



Save the Children



Niger Sponsorship Early Childhood Development Endline Assessment

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Save the Children's Sponsorship programs empower communities to support their children's health, education, protection and growth. This report was fully funded through the generous support of Sponsorship funding.

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Introduction and context

Introduction

Save the Children's Sponsorship-funded programs operate in 20 countries worldwide, and integrate health, education and protection to support the development of children from 0 to 18 years of age. Sponsorship programs are made possible by the generous donations of individuals in the United States, Italy, South Korea, Australia, Hong Kong and Mexico.

The Sponsorship Program in the Maradi impact area of Niger has been operating integrated programming for children since 2016. This report presents the results of an assessment of early childhood development and home learning environment conducted at two points in time: baseline data were collected in November 2016, and endline data were collected one year later from the same children and caregivers, in November 2017. The assessment includes 94 children and their caregivers from five *Jardin d'Enfants Communautaire* (JEC) in Aguié and Tchadua communes, department of Tessaoua, in the Maradi Region of Niger. These five JECs are participating in Emergent Literacy and Math (ELM, or *LaLeMAPE*) activities as part of Save the Children's Sponsorship programming

ELM is one of the evidence-based education programs implemented in Sponsorship sites. In Niger, ELM activities include parent/caregiver workshops designed to support parents and other family members to promote their children's learning at home and training and support for educators at ECD centers (JECs). The ELM project will contribute to Niger's attainment of key goals in education and overall socioeconomic development by supporting schools and communities to improve children's learning. This is essential in a country where only four percent of females and six percent of males complete sixth grade with sufficient competency in reading and math.¹

The key research questions to be explored in this report are:

1. What is the quality of the home learning environment among families of young children attending 5 JECs in Aguié and Tchadoua?
2. How have children's early childhood development skills (motor, emergent literacy, emergent numeracy and socio-emotional development and executive function) changed over one year, from November 2016 to November 2017?
3. Are there any differences in early childhood development according to children's sex, home learning environment, or socioeconomic status?

Methods

This study is designed to assess how children's skills develop over the course of one year, and explore changes in the quality of the home learning environment. Baseline data were collected in November, 2016 and endline data were collected one year later, in November, 2017. The same children were interviewed at baseline and endline in order to observe how skills develop over the course of one year. Children's primary caregivers were also interviewed in order to collect data on background characteristics and the home environment.

This study is not designed to estimate the impact of Save the Children's Sponsorship ELM programming. Without a comparison group of children, we have no way of knowing how children's skills would have developed in the absence of ELM, and thus we are not able to isolate the effect of participation in ELM. Rather, this study provides a snapshot of children's skills development over one year, allowing Save the Children and partners to contextualize their early childhood

¹ World Bank Francophone Africa Results Monitor | Basic Education, based on 2014 PASEC data.

education interventions based on the learning environment (research question #1) and children’s developmental strengths and weaknesses (research question #2). The other key objective is an equity analysis (research question #3). By comparing skills development between groups (by sex, socioeconomic status, and home learning environment), Save the Children and partners can identify which families and children are most in need of support from Sponsorship and inform Save the Children’s and partners’ efforts to promote educational equity in this context.

Sample

The sponsorship impact area was selected in collaboration with local education authorities in accordance with Save the Children International recommendations, in which priority is given to areas where Save the Children already has a presence for the initial years of Sponsorship programming in order to ensure a smooth launch of operations and programming, before expanding to new impact areas.

The baseline sample consists of five JECs participating in Save the Children sponsorship programming in Maradi, Niger (four in the Aguié commune and one in the Tchadoua commune). ECD infrastructure in Niger is minimal; at the start of Sponsorship programming these five JECs were the only operational ECD centers within the sponsorship impact area. Within each JEC, 20 children aged three to six years old were randomly selected to participate in the study (10 boys and 10 girls). In JECs with fewer than 20 children enrolled/in attendance, all children were invited to participate. Sampled children’s primary caregivers were administered a questionnaire about basic sociodemographic characteristics and caregiving practices (in most cases the caregiver interviewed was the child’s mother). All selected children were administered verbal assent, in which enumerators explained the purpose of the study and the child’s right to participate or not participate. In order to be assessed the child’s caregiver also had to provide verbal consent. Caregivers were also administered verbal consent before responding to the caregiver questionnaire

The total baseline sample includes 98 children (49 girls and 49 boys) and their primary caregivers². At endline, 96% (94) of these children were reached, resulting in a 6% attrition rate. The sample is representative of children and caregivers attending the five JECs, it is not representative of all children in the sponsorship impact area, nor of all families in the JEC catchment area.

Measurement

Children’s skills were assessed using the International Development and Early Learning Assessment (IDELA) tool. IDELA is a holistic tool developed by Save the Children to be both easily adaptable to diverse contexts while also provide reliable and valid data on four developmental domains: motor, socioemotional, emergent literacy and emergent numeracy. The assessment is administered in children’s home language (in this case, Hausa), although emergent literacy sub-tests may also include the language of instruction, if different from the home language. Table 1 describes the individual sub-tests under each domain.³

Table 1: IDELA Domains and skills

Developmental domain	Skills
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² Four children with incomplete data at baseline were dropped from the analysis, and three children assessed at endline who could not be matched to children in the baseline sample were dropped.

³ IDELA is not a diagnostic tool. In other words, IDELA is designed to be reported at an aggregate level, exploring overall (sample-wide) strengths and weaknesses and identify equity gaps in order to inform program development and implementation. It is not meant to provide individual results for each child assessed.

Gross and fine motor development	<ul style="list-style-type: none"> • Hopping on one foot • Copying a shape • Drawing a human figure • Folding paper
Emergent literacy and language	<ul style="list-style-type: none"> • Print awareness • Expressive vocabulary • Letter identification • Emergent writing • Initial sound discrimination • Listening comprehension
Emergent numeracy	<ul style="list-style-type: none"> • Measurement and comparison • Classification/sorting • Number identification • Shape identification • One-to-one correspondence • Simple operations • Problem solving
Socio-emotional development	<ul style="list-style-type: none"> • Peer relations • Emotional awareness • Empathy • Conflict resolution • Self-awareness

The IDELA caregiver questionnaire includes questions about children’s family and household environments, such as the presence of print materials and play items at home, caregiver/child interactions, and perceptions of early childhood education. Data were collected digitally (using Kobo software on tablets) by a team of enumerators trained in IDELA administration, research ethics, and child safeguarding. Data collection took place at the JECs.

Results

This section begins with a description of the basic socio-demographic characteristics of the sample, and then presents the results of each research question: the quality of the home learning environment, caregivers’ attitudes and expectations regarding early childhood education, followed by children’s development skills and an analysis of learning equity.

Sample characteristics

The sample of children is split equally between sexes, with 49 boys and 49 girls (baseline) and 47 boys and 47 girls at endline. Children were five years old on average at baseline and six years old on average at endline. Anecdotal reports from Save the Children staff and local education authorities indicate that data on children’s age in this context may not be reliable, given that many parents do not keep track of children’s birth dates and birthdays each year.

Table 2 illustrates the distribution of caregiver respondents according to their relationship with the sampled child. At baseline there were more fathers, *marâtres* and other caregivers who responded to the caregiver survey, at endline it was primarily mothers who responded.

Table 2: Caregiver respondents’ relation to sampled child

	Baseline	Endline
Mother	74%	93%
Father	15%	3%

Marâtre	4%	0%
Aunt	1%	0%
Uncle	2%	0%
Grandfather	1%	0%
Grandmother	1%	2%
Sister	1%	2%
N	89	94

Table 3 describes the basic socio-demographic characteristics of the sample, including home language, parental educational background and household size. The overwhelming majority of mothers and fathers did not complete any education.

Table 3: Basic socio-demographic characteristics (baseline)

	Percent/ Average	N
Hausa is primary language (%)	100%	98
Number of languages spoken at home (average)	1	88
Mother's age (average)	28.1	75
Mother is literate (%)	24%	90
Father's age (average)	43.6	45
Father is literate (%)	44%	90
Child's mother completed primary education or higher (%)	33%	90
Child's father completed primary education or higher (%)	34%	90
Number of children in the household (average)	7.5	88
Number of children and adults in the house (average)	11.5	88

To obtain an indication of families' wealth, caregivers were asked whether or not they have a series of nine relatively common household items or infrastructure. These data suggest that Sponsorship programming in Niger is reaching communities that are among the most disadvantaged. Most families only had two of the items included, and only one percent of homes had electricity, compared to 14 percent nationally with electricity as of 2012 (World Bank Sustainable Energy for All (SE4ALL) database).

Table 4: Household possessions: Percent of families who have the following household items (baseline)

	% of families
Cell phone	83%
Radio	72%
Motorcycle	22%
Tin Roof	13%
Bicycle	6%
Solar panel	3%
Generator	2%
Television	2%
Electricity	1%
Total number of household possessions of 9 (average)	2.1
N	94

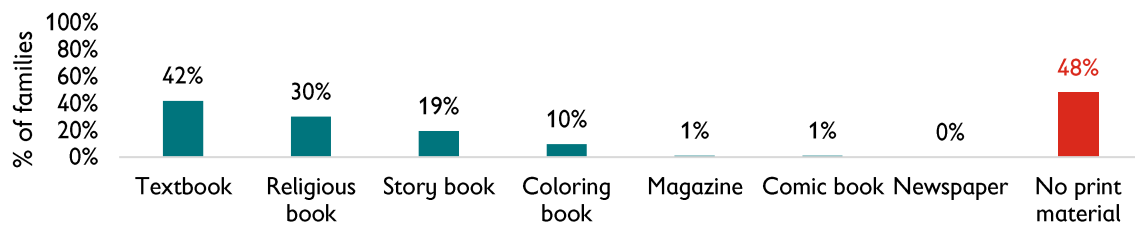
RQ1: What is the quality of the home learning environment among families of young children attending 5 JECs in Aguié and Tchadoua?

We operationalize the quality of the home learning environment (HLE) as (1) print and play materials at home, (2) caregiver/child learning and play interactions, and (3) discipline practices. Data on the HLE were collected at baseline and endline from caregiver respondents. However, given concerns about the validity of the baseline data for the first and second components of HLE (print/play materials and caregiver/child interactions), we present only the endline data, rather than assessing changes in print and play materials and caregiver/child learning interactions from baseline to endline.⁴ A comparison between baseline and endline would suggest that the quality of the home learning environment decreased from baseline to endline—with fewer print and play materials, and fewer learning interactions, when the more likely explanation is that caregivers responded more accurately at endline.

Print and play material

At endline, the most commonly found print material is a textbook (42% of families have a textbook), followed by a religious book (30%). Only about one in five families have a story book. On average, families have only one type of print material at home, and nearly half of the families in this sample have no print material at home.

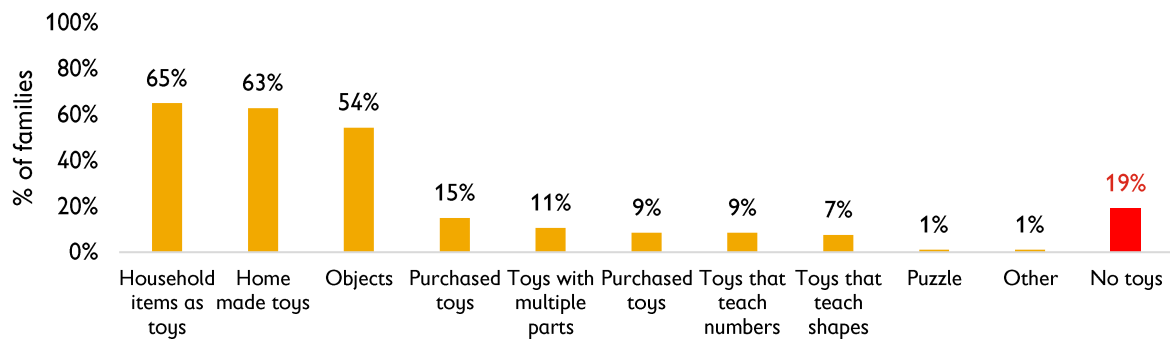
Figure 1. Types of print materials at home, endline



Toys are more common, especially household items, homemade toys, and objects. On average families have between one and two types of toys at home. Nearly one in five families have no toys. There is no significant difference in print materials or toys between boys and girls.

⁴ At baseline, caregiver reports of print and play materials at home and learning interactions were much higher than expected, considering that less than 40% of mothers and fathers in the sample are literate (for example, at baseline 72% of caregivers said they had taught their children letters and 67% they read to their children). Local education authorities and Save the Children staff found the baseline findings surprising given their knowledge of the context, as in their view it is not common for parents to teach children letters and or read to their children, and most families lack print materials of any kind. At the time of baseline data collection (November 2016), Save the Children had just begin Sponsorship programming, so it is possible within these first few months there was still a lack of trust between community members and Save the Children, and a tendency for caregivers to report what they assumed Save the Children wanted to hear, rather than answering truthfully. A sub-sample of caregivers were re-contacted in June 2017, and again asked about print and play materials at home and home learning interactions. These findings differed from baseline—fewer families reported having print materials at home and much fewer reported reading and teaching their children letters than at baseline. This further implies that the baseline home learning environment data were biased, and thus at endline we present only the endline findings.

Figure 2. Types of toys and learning materials at home, endline

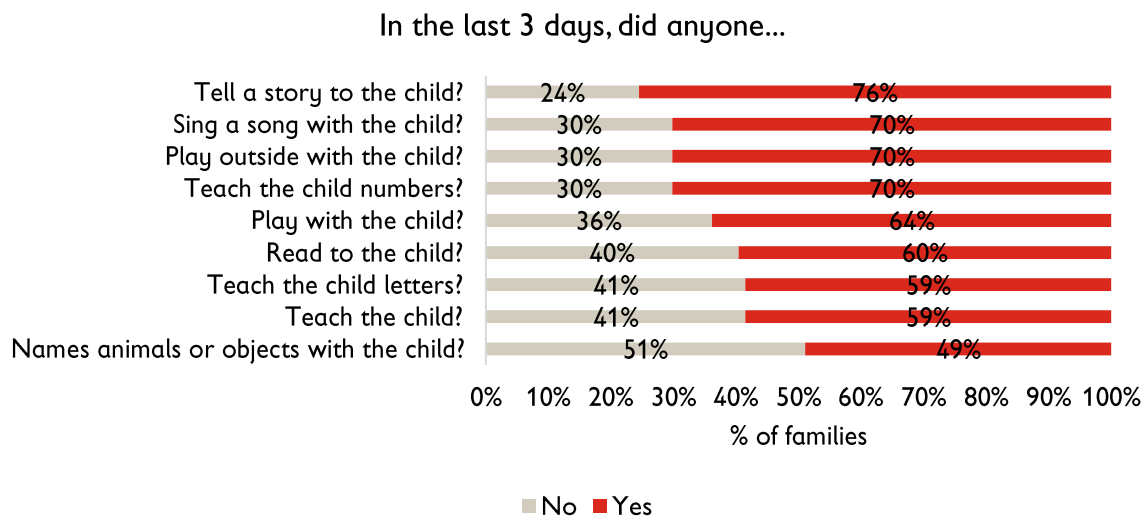


Caregiver/child interactions

The quality of the home learning environment is not just about access to materials, but also the extent to which families engage in their children’s learning at home. To this end, caregivers were asked about nine different home learning interactions. Specifically, enumerators asked caregiver respondents if they or someone else in the household had done each of nine home learning activities in the last three days with the sampled child. If the caregiver said *yes*, they were then asked who did the activity with the child—“*the child’s mother? The child’s father?*” “*Sister?*” “*Brother?*” etc. Responses to the latter question were not mutually exclusive—enumerators marked all household members that the respondent mentioned (mother, father and/or other caregiver).

Figure 3 illustrates the percentage of respondents who report that “*yes, someone at home read to the child, told him/her stories, played with him/her,*” etc., in the past three days, (in grey) versus the percent who responded “*no*” (in red).

Figure 3. Learning and play interactions at home, endline



On average caregivers responded “yes” to five or six of these nine activities. The most common activities are telling a story, singing a song, playing outside, and teaching the child numbers. There is no significant difference the caregiver/child learning interactions between boys and girls.

Caregivers were also asked which family members did each activity with the child. Children’s brothers and sisters are the most likely to engage in each activity, followed by mothers, fathers, aunts/uncles, cousins and grandparents.

Table 5. Family members' participation in home learning activities, endline

	Tell a story	Sing a song	Play outside	Teach numbers	Play	Read	Teach letters	Teach	Name animals or objects
Mother	44%	34%	63%	28%	39%	19%	14%	32%	26%
Father	16%	4%	22%	18%	10%	19%	23%	23%	20%
Sister/Brother	100%	100%	69%	84%	100%	89%	96%	100%	98%
Cousin	11%	9%	7%	10%	13%	12%	12%	13%	11%
Aunt/Uncle	15%	12%	4%	10%	7%	12%	9%	9%	13%
Grandparent	5%	3%	4%	1%	8%	0%	0%	2%	2%
Other	3%	3%	1%	0%	3%	2%	0%	0%	0%
N	73	67	68	68	61	57	57	56	46

Negative discipline practices

Caregiver respondents were also asked about discipline practices (“in the last three days, did your or any other adult in the household yell at the child? Spank the child? Hit the child? In French: <<Critiquer ou crier sur votre enfant? Gifler votre enfant? Frapper votre enfant?>>”). We have no reason to believe that data on discipline practices at baseline were inaccurate. Thus, for this component of the HLE we do compare responses from baseline to endline, and we find that discipline practices appear to have increased slightly from baseline to endline. However, the differences between baseline and endline are not statistically significant.

At baseline, boys were more likely to be hit than girls (63 percent of boys versus 40 percent of girls were hit; difference statistically significant at $p < 0.05$). At endline there is no observed difference in discipline practices between boys and girls.

Table 6. Discipline practices, baseline and endline

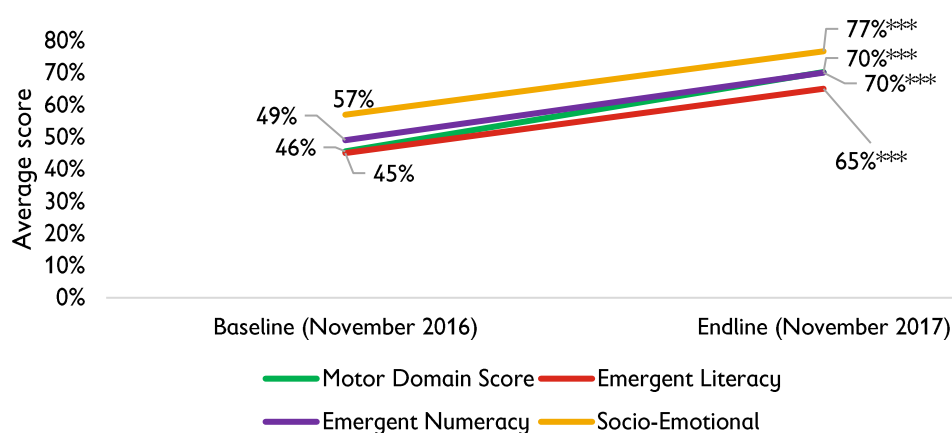
	Baseline	Endline
Yelled at child	79%	85%
Spanked child	21%	29%
Hit child	53%	61%
Total negative disciplinary measures (3 total)	1.5	1.7
N	94	94

RQ2: How have children's early childhood development skills changed over one year, from November 2016 to November 2017?

Children's IDELA scores increased from baseline to endline in each of the four domains assessed: motor, socio-emotional, emergent literacy and emergent numeracy. This is to be expected given children are one year older at endline. Some of this growth in early learning skills may be explained at least in part by children's participation in the JECs, but **we have no way of identifying the causal effect (impact) of JECs through this dataset.**

Of the four domains assessed, children are strongest in socio-emotional development and weakest in emergent literacy. This is true at both time points, from baseline to endline.

Figure 4. Average IDELA scores at baseline and endline



Difference in baseline and endline scores is statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***)

This is an important caveat to keep in mind when interpreting these findings. **Data on emergent literacy and emergent numeracy in this report are less accurate than they would have been if implementation of the IDELA tool were consistent at baseline and endline.**⁵

In the following pages we review outcome's for each of the domains, comparing baseline and endline scores.

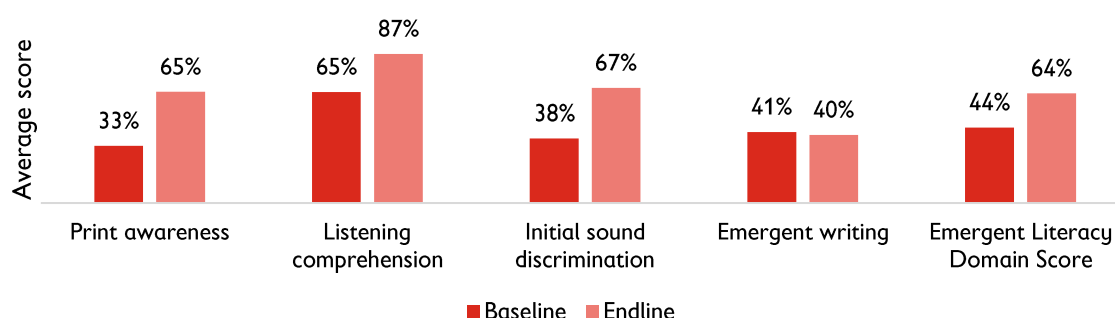
Another important limitation of these data is that the emergent literacy and emergent numeracy scores do not include all of the sub-tasks due to differences in administration between baseline and endline. This reduces the accuracy of these data as a reliable, meaningful representation of children's skills. **Scores here are inflated (higher than they actually are) because 3 sub-tests are excluded from the analysis due to inconsistencies in IDELA administration.** Specifically:

- Average scores for **letter identification** and **number identification** were higher at baseline than they were at endline. This would suggest that children knew more letters and numbers in November 2016 (baseline) than they did in November 2017 (endline), which is highly unlikely. There is no reason to believe that children "forgot" their letters and numbers from baseline to endline, all of these children have been participating in JECs throughout the year.
- A more likely explanation is that these sub-tests were administered incorrectly either at baseline or endline, but it is impossible to know which one is more accurate. Thus, we exclude letter and number identification sub-tests when calculating the total emergent literacy and emergent numeracy domain scores, respectively.
- We also exclude the **expressive vocabulary** sub-test from the calculation of the emergent literacy domain score, due to differences in scoring between baseline and endline that reduce comparability (see foot note 5).

⁵ The expressive vocabulary sub-test was administered in Hausa and French. Children were asked two questions: first, to name as many items at the market as they can, and second, to name animals. At baseline, enumerators marked the number of words children named in French and Hausa, with a maximum of 10 words for each question/language. At endline, the maximum was changed to 5 words for each question/language. This means that scores are not comparable between baseline and endline.

Emergent literacy. Of the emergent literacy skills assessed, children were strongest in listening comprehension (in Hausa), identifying initial word sounds (Hausa) and print awareness.

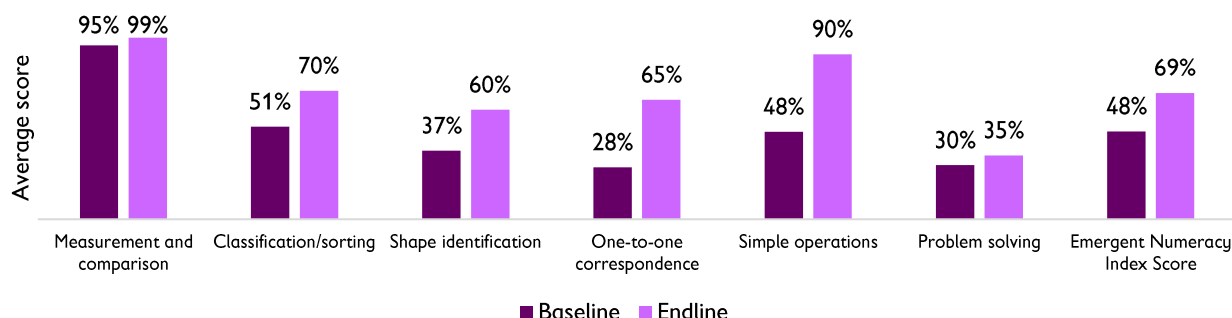
Figure 5. Emergent Literacy: Average scores per item, baseline and endline



Difference in baseline and endline scores is statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***). The Emergent Literacy Domain Score excludes the Letter Identification and Expressive Vocabulary sub-tasks (not shown) due to inconsistencies in administration.

Emergent numeracy. In emergent numeracy, children did best at measurement and comparison, simple addition and subtraction questions (simple operations) and classification.

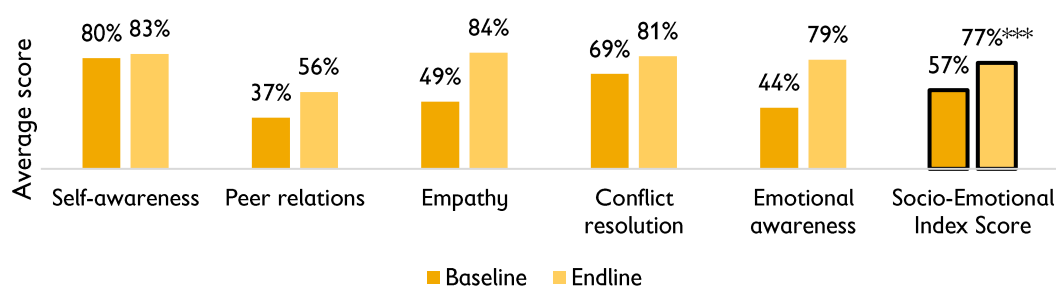
Figure 6. Emergent Numeracy: Average score per item, baseline and endline



Difference in baseline and endline scores is statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***). The Emergent Numeracy Domain excludes the Number Identification sub-task (not shown), due to errors in administration.

Socio-emotional development. In the socio-emotional domain children scored highest in self-awareness at baseline and endline. Meanwhile, the largest gains were seen in empathy and emotional awareness items, with average scores increasing by 35 percentage points.

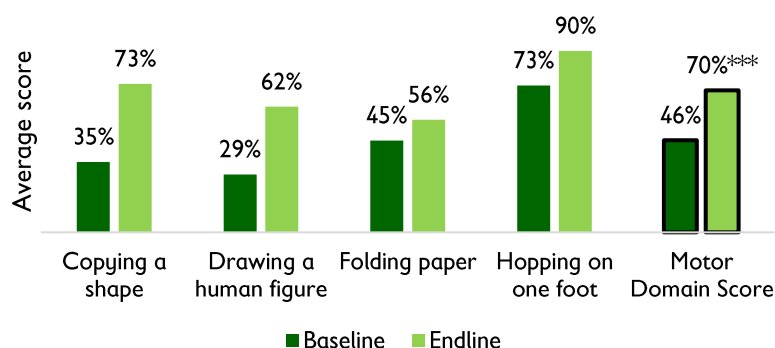
Figure 7. Socio-emotional: Average score per item, baseline and endline



Difference in baseline and endline scores is statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***)

Motor development. At baseline and endline, children had higher gross motor skills (hopping on one foot) than fine motor, although they made substantial improvement in two items: copying a shape and drawing a human figure.

Figure 8. Motor: Average score per item, baseline and endline



Difference in baseline and endline scores is statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***)

RQ3: Are there any differences in early childhood development according to children’s sex, home learning environment, or socioeconomic status?

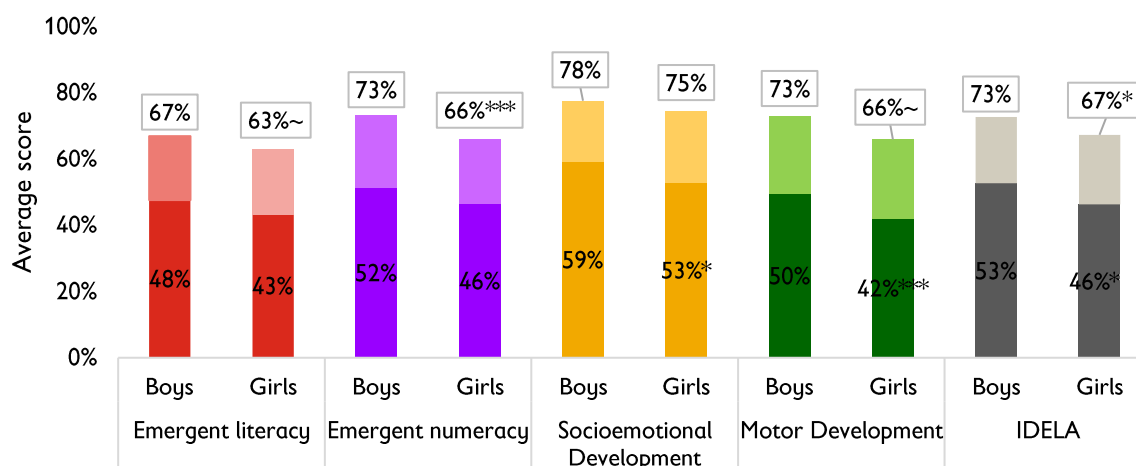
The objective of RQ3 is to identify groups of children who are falling behind, and identify factors that have a positive influence on children’s development. To do so, we model developmental outcomes (emergent literacy, emergent numeracy, socio-emotional and motor development, as well as the total IDELA score) as a function of background factors and the home learning environment, using multiple regression analyses. The full results of these models are included in Appendix 1.

Findings reveal that girls are falling behind boys. This was true at baseline and it remains true at endline.

- At baseline, girls’ scores in socioemotional development, motor development, and overall IDELA development (the sum of all domains) were significantly lower than boys’ scores.
- From baseline to endline, boys made greater gains than girls did in emergent literacy, numeracy, and overall IDELA scores.
- At endline, there is a significant gap between boys and girls in emergent literacy, emergent numeracy and overall IDELA development. This gender-based gap is large in magnitude, 0.3 – 0.4 standard deviations.

Figure 13 depicts these gaps.

Figure 9. Gender-based skills gaps from baseline to endline



Difference between boys and girls is statistically significant at $p < 0.10$ (~), $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***). Values on the bottom represent baseline values. Values above the bars are the average endline scores. All values are predicted scores, controlling for age, home literacy environment and socio-economic status.

There were no significant differences found based on the home learning environment or household socioeconomic status.

Conclusion and next steps

This endline evaluation highlights the following results and action points, in response to our three research questions.

Table 7. Findings and action points

RQ1: What is the quality of the home learning environment among families of young children attending 5 JECs in Aguié and Tchadoua?	
Finding	Action point
<ul style="list-style-type: none"> Nearly 50% the families in this sample do not have any kind of print material at home, and very few have child-friendly reading material. Toys or other play materials are more common, 65% of caregivers say they use household objects as play/learning materials for their young children. Most children have at least somewhat at home who tells them stories, sings songs, and plays games with them, but fewer have family members who support learning letters, numbers and reading. Older sisters and brother are more likely to engage in learning interactions with their younger siblings than are mothers and fathers. Negative discipline practices have gone up slightly, with more parents reporting yelling, hitting and spanking their children. 	<p>The Niger Sponsorship program is piloting a new approach this year that combines Literacy Boost (basic education), Emergent Literacy and Math (early childhood education) methodologies through weekly parent workshops. Parent workshops will be led by trained volunteer facilitators from the community. Through these workshops, parents and other caregivers will be engaged in dialogue about the importance of children's early years for their success in primary school and beyond, and the role of the family as children's first teacher. These sessions will also be an opportunity for parents to practice concrete way they can support their children's learning at home through games, stories, creative activities, and even simple conversations.</p> <p>The parent workshops will be include 8 sessions on the following topics:</p> <ol style="list-style-type: none"> 1: Child development 2: Talking with my children 3: Singing with my children 4: Playing with my children 5: Promoting reading skills by working together 6: Sharing stories to share knowledge and culture 7: Reading arrives at home

	8: Making reading materials and a reading corner in the house
RQ2: How have children’s early childhood development skills (motor, emergent literacy, emergent numeracy and socio-emotional development and executive function) changed over one year, from November 2016 to November 2017?	
<i>Finding</i>	<i>Action point</i>
<ul style="list-style-type: none"> Children are strongest in socio-emotional development and weakest in emergent literacy. Due to administration and/or scoring errors, key IDELA items (letter identification, expressive vocabulary, and number identification) were left out of this analysis. This limits the reliability, validity of these data. 	<p>Sponsorship programming will continue to strengthen the quality of the 5 JECs in the Sponsorship impact area by conducting regular observation visits (using observation sheet developed) and providing ongoing coaching for JEC facilitators based on data collected from these observations.</p> <p>These endline findings will be used to demonstrate to JEC facilitators and local education authorities the importance of development of emergent math skills with an emphasis on emergent literacy pedagogy. It is also worth exploring the ways in which the JEC environment support socioemotional development, as there may be valuable things to learn from this context where children’s socioemotional development is stronger than motor development (this is relatively rare).</p> <p>In light of the limitations of this dataset, all future data collections will include special attention to the administration of the letter identification, number identification, and expressive vocabulary, as this has proven challenging in this multilingual context. Data on inter-rater reliability should also be collected through paired assessment in order to assess the degree of consistency across enumerators in IDELA administration.</p>
RQ3: Are there any differences in early childhood development according to children’s sex, home learning environment, or socioeconomic status?	
<i>Finding</i>	<i>Action point</i>
<ul style="list-style-type: none"> Holding age, socioeconomic status, and home learning environment constant, girls are falling behind boys in skills development, in particular emergent numeracy. 	<ul style="list-style-type: none"> To sensitize parents on gender (enrolling girls in school, avoiding stereotypes, interacting with girls) through community mobilization efforts, etc. Ensuring gender balance in community volunteers at JECs (<i>animateurs</i>) as well as volunteer facilitators of parent workshops for early childhood education programs Messaging in training of volunteer facilitators of parent workshops to influence messaging in parent workshops in communities later. Intensify the supervision of quality education, monitoring at all levels of JEC interactions including animator-girl child, girl child-other children, etc. particularly during observation visits, and providing thorough feedback to JEC animators.

Appendix 1: Multiple regression analysis

All models in Tables 7 through 10 were conducted using multiple regression analyses with random effects at the JEC level and standard errors clustered at the JEC level. Socioeconomic status (SES) is the standardized sum of household possessions at baseline. Given concerns about the validity of caregiver reported home learning environment variables at baseline (see page 9 for details), the index of print materials at home and home learning interactions is only included in the endline equity analysis (Table 10).

Table 8. Equity analysis at baseline

	Emergent literacy		Emergent numeracy		Socio-emotional		Motor		IDELA	
	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD
Age in years at baseline ⁶	0.032 (0.058)	0.161	0.117*** (0.023)	0.602	0.022 (0.040)	0.125	0.126*** (0.026)	0.627	0.065* (0.028)	0.461
Sex (female)	-0.044 (0.035)	-0.223	-0.050 (0.035)	-0.260	-0.062* (0.027)	-0.348	-0.076*** (0.019)	-0.376	-0.064** (0.022)	-0.452
SES	-0.006 (0.032)	-0.029	-0.032 (0.021)	-0.164	0.017 (0.014)	0.094	0.008 (0.020)	0.042	0.004 (0.020)	0.031
Household size	0.005 (0.004)	0.023	0.002 (0.003)	0.008	-0.001 (0.004)	-0.008	0.001 (0.006)	0.007	0.001 (0.004)	0.006
Constant	0.262 (0.281)	1.340	-0.096 (0.121)	-0.494	0.497* (0.202)	2.772	-0.161 (0.137)	-0.797	0.185~ (0.112)	1.309
R2 within	0.0317		0.179		0.0511		0.198		0.141	
R2 between	0.0810		0.390		0.0000279		0.703		0.257	
R2 overall	0.0361		0.188		0.0474		0.208		0.147	
N	80		80		78		80		78	

Statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***)

⁶ The relatively weak association between age in years and development outcomes is concerning. This could be explained by (1) limited age variation in the JECs (if most of the children are within 1-2 years of each other, there is less variation to observe a relation between years in age and outcomes. (2) caregivers in this context do not always know (or report) their children's exact age.

Table 9. Equity analysis of gains from baseline to endline

	Emergent literacy		Emergent numeracy		Socio-emotional		Motor		IDELA	
	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD
Age in years at baseline	0.004 (0.030)	0.017	0.021 (0.018)	0.096	0.043 (0.030)	0.180	0.024 (0.041)	0.089	0.027 (0.022)	0.155
Sex (female)	-0.068* (0.034)	-0.284	-0.090*** (0.012)	-0.400	-0.027 (0.038)	-0.110	-0.067 (0.044)	-0.253	-0.060*** (0.012)	-0.349
SES	0.014 (0.027)	0.060	0.015 (0.017)	0.069	-0.014 (0.027)	-0.056	-0.008 (0.024)	-0.030	0.001 (0.011)	0.004
Household size	0.005*** (0.001)	0.021	0.003 (0.002)	0.011	-0.002 (0.005)	-0.008	0.003 (0.003)	0.013	0.002 (0.001)	0.012
Baseline score	-1.295*** (0.220)	-5.382	-1.083*** (0.095)	-4.843	-0.976*** (0.156)	-4.054	-0.966*** (0.112)	-3.636	-1.044*** (0.167)	-6.043
Constant	0.658*** (0.159)	2.734	0.590*** (0.090)	2.638	0.560*** (0.149)	2.325	0.551*** (0.159)	2.075	0.560*** (0.089)	3.243
R2 within	0.535		0.576		0.521		0.512		0.536	
R2 between	0.190		0.905		0.726		0.0131		0.181	
R2 overall	0.510		0.582		0.526		0.493		0.525	
N	80		80		78		80		78	

Statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***)

Table 10. Equity analysis at endline

	Emergent literacy		Emergent numeracy		Socio-emotional		Motor Development		IDELA	
	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD	Beta (S.E.)	Effect size in SD
Age in years at baseline	0.021 (0.019)	0.125	0.046*** (0.011)	0.311	0.048~ (0.025)	0.281	0.021 (0.041)	0.107	0.034* (0.016)	0.275
Sex (female)	-0.035~ (0.021)	-0.209	-0.073*** (0.018)	-0.494	-0.030 (0.042)	-0.175	-0.071~ (0.041)	-0.368	-0.056* (0.025)	-0.448
SES	0.001 (0.024)	0.007	-0.004 (0.020)	-0.024	-0.017 (0.029)	-0.100	-0.016 (0.023)	-0.085	-0.009 (0.010)	-0.073
Household size	0.004** (0.001)	0.024	0.002 (0.002)	0.017	-0.002 (0.005)	-0.014	0.002 (0.003)	0.012	0.001 (0.002)	0.011
Types of print materials at home (weighted)	0.026 (0.018)	0.156	0.015 (0.020)	0.103	0.008 (0.010)	0.047	0.049*** (0.011)	0.254	0.027* (0.014)	0.214
Types of learning interactions at home	-0.005~ (0.003)	-0.031	0.002 (0.006)	0.014	0.004 (0.006)	0.026	-0.003 (0.003)	-0.017	-0.000 (0.004)	-0.003
Baseline score	0.097 (0.174)	0.576	0.043 (0.074)	0.290	0.015 (0.165)	0.088	0.057 (0.106)	0.292	0.035 (0.156)	0.281
Constant	0.475*** (0.143)	2.808	0.423*** (0.045)	2.880	0.515*** (0.125)	3.035	0.531*** (0.157)	2.738	0.493*** (0.063)	3.936
R2 within	0.0644		0.134		0.0603		0.155		0.148	
R2 between	0.718		0.625		0.0711		0.652		0.948	
R2 overall	0.0916		0.148		0.0607		0.178		0.179	
N	80		80		78		80		78	

Statistically significant at $p < 0.05$ (*), $p < 0.01$ (**), and $p < 0.001$ (***). Types of print materials at home: story books are weighted double.