

Executive Summary

In 2017, the Nuru Ethiopia Education Program achieved impact in progress toward literacy and across the core components of reading. This report shows the growth of students in grades 1 & 2 during Nuru's second year of education services in Ethiopia. The core pieces of the Nuru education model: teacher training, school libraries, and community reading activities come from Save the Children's Literacy Boost program. Nuru partnered with Save to implement the Literacy Boost model in 2015. Over the course of the 2016-2017 school year Nuru worked with almost 6,000 children and trained 142 teachers in 21 primary schools and provided out of school reading opportunities to children in 12 Nuru farmer cooperatives.

For the 2017 impact evaluation a sample of 269 Nuru farmer children and 129 children from a non-Nuru comparison area were assessed using the Uwezo and Early Grades Reading Assessment (EGRA) literacy measurement tools. This report uses a difference in difference methodology to compare the growth of Nuru farmer children and non-Nuru farmer children on literacy indicators from the baseline in 2016 to the follow-up timepoint in 2017 after one year of Nuru's intervention.

Key findings of the 2017 impact report include:

- On the Uwezo assessment, 9% more Nuru farmer children improved at least one reading level from 2016 to 2017 than the children from the comparison area.
- Over the course of one year of Nuru's education intervention, Nuru farmer children grew at a faster rate on progress towards literacy metrics of the Uwezo assessment than non-Nuru Children. Additionally, Nuru children had higher gains in reading skills at each grade level from Grades 1-2.
- On Early Grades Reading Assessment (EGRA) sub-tasks Nuru famer children grew at slightly higher rates when it came to letter identification, while the majority of children in both-Nuru and non-Nuru areas were not able to read words or paragraphs.
- Overall, Nuru students showed slow, but steady growth on all indicators after starting from almost complete illiteracy at baseline.

This report serves as a summary of Nuru Education's impact in Ethiopia over the course of the 2016-2017 school year. Another assessment of impact will be conducted in late 2018.

Introduction

The Nuru Ethiopia (NE) Education Program aims to increase child literacy levels to second grade reading levels among Nuru farmer children in early primary school (Grades 1-4). Grade 2 level literacy is generally defined where children can fluently read and comprehend basic text. For the 2016-2017 school year, Nuru offered services to 21 primary schools and 12 Nuru farmer cooperatives, serving almost 6,000 children in grades 1-4.

The core components of the Nuru Ethiopia Education model are:

- Teacher training on the best practices in teaching literacy in the schools located in Nuru farmer cooperative areas, along with regular follow-up observations and feedback to teachers and administrators
- The establishment of school libraries in the schools where teacher training is conducted
- Training for district and school officials on leadership and management techniques
- The establishment of book banks, or mini-libraries, at Nuru farmer cooperatives where children of cooperative members can practice reading outside of school walls
- The co-construction of sex-segregated latrines to increase girls attendance in school.

This model is based on [Save the Children's Literacy Boost](#) model. The overall focus and goal is to improve the reading skills of students in Nuru target areas, specifically focused on the five core components of literacy: letter identification, phonemic awareness, fluency, vocabulary and comprehension.

Objective

This report serves as the follow-up time point to the 2016 baseline. Nuru conducted a baseline literacy assessment of a sample of its service areas in Ethiopia in 2016. The follow-up assessment was conducted in 2017 after approximately one year of education program services. The following presentation of individual level data collected at the household level intends to provide an update on the progress Nuru farmer children are making in literacy compared to a non-Nuru sample of children over one year of the Education program in Ethiopia.

Nuru M&E supports this work by conducting an annual review of progress toward the program's impact goal to address the evaluation question: *What is the impact of Nuru Ethiopia's Education Program on progress toward literacy and the core components of reading?*¹

Methodology

Nuru Ethiopia M&E conducted a baseline assessment of literacy in Ethiopia in August 2016. The M&E team returned to try to capture the same children in August 2017 to assess their growth over one year of Nuru's intervention. August was chosen as a time when children were out of school for "summer" break between school years. The baseline and follow-up assessments were carried out at the household level with an attempt to capture all households of Nuru cooperative members that had children who had completed grades Kindergarten and first grade in 2016. In addition, the same household level assessment was carried out in areas that were used as comparison areas for Nuru's other non-educational services.

The findings presented in this report highlight those children who initially completed Grades Kindergarten and first grade in August of 2016 and then followed up with them after they

¹ The evaluation survey is available upon request

completed who completed Grades 1-2 in 2017. The numbers of children assessed in Nuru and Non-Nuru households is depicted in Table 1.

The growth of the children on literacy domains from the Uwezo and EGRA assessments in Nuru areas vs the children in non-Nuru areas were captured and compared to each other. The difference in literacy growth rates will be assessed as Nuru’s impact. This is often referred to as a difference in difference approach and allows for the comparison of results when groups start at different places.

Table 1: Survey timeline and sample sizes

| Sample | # of children surveyed in 2016 ² | # of children surveyed in 2017 | # of enumerators | Dates of training | Dates of data collection | Data entry and quality control |
|------------|---|--------------------------------|------------------|-------------------|--------------------------|--------------------------------|
| Nuru | 314 | 269 | 35 | July 2017 | Aug 2017 | Aug 2017 |
| Comparison | 216 | 129 | | | | |

Table 2: Grades completed

| Sample Group | # of children that completed kindergarten ³ | # of students that completed first grade |
|--------------|--|--|
| Nuru | 141 | 128 |
| Comparison | 37 | 92 |

Uwezo

The Uwezo Literacy Assessment was developed by a regional initiative between Kenya, Tanzania and Uganda called Uwezo, which strives to improve the competencies in numeracy and literacy among primary school aged children.⁴ NE M&E originally chose this tool to use for the baseline assessment because Nuru had used Uwezo in Kenya for assessing literacy and it was a relatively quick and easy tool to use.

In August 2017, at follow-up, the Uwezo assessment was used to assess the growth of children on two main indicators: 1) progress toward literacy, a composite measure scaled 0-5, which

² These numbers reflect the matched respondents between 2016 and 2017.

³ Kindergarten completed in 2016

⁴ Primary school aged children are between 6 and 16 years old in this context. For more information on Uwezo, please visit www.uwezo.net.

reflects the average literacy level of students according to the Uwezo assessments, where 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story and 5 = Literate, and 2) the percentage of children who moved up a level on the Uwezo from one year to the next.

EGRA

As a part of the evaluation strategy starting in 2016, NE M&E began using the Early Grade Reading Assessment (EGRA) for measuring literacy. [The Early Grades Reading Assessment \(EGRA\)](#) is currently the most commonly used early grades (grades 1-4) literacy assessment in the world. EGRA was developed in 2006-2007 by early grade reading experts at RTI and USAID in consultation with reading scholars at universities and early grade reading experts from a host of other organizations around the world. EGRA has been used by over 30 organizations in over 70 countries and translated into 120 languages.

Typically EGRA has six main components, but this study highlights three components that were selected for their comparability to Nuru's past assessment, Uwezo, and for time purposes. In future years, Nuru may include more EGRA components, in addition to these three. The three main components of literacy assessed were: Letter Name Identification, Familiar Word Reading, and Oral Reading Fluency. From those domains, three main indicators were used to assess baseline results. Those indicators are:

- Percentage of letters correctly identified in one minute
- Percentage of words correctly read in one minute
- Number of correct words per minute (cwpm) read in a short story

For the first two domains, children were given lists of 50 letters and 50 words and asked to identify or read as many as they could. Enumerators timed them while recording their results and stopped them after one minute was complete. For the third indicator, children were given a story and asked to read it all of the way through. Enumerators recorded how many words children read correctly in one minute, but children were allowed to finish the story if it took them longer than one minute. Only words read correctly in the first minute were recorded for analysis.

In future evaluations, NE M&E will use the EGRA assessment due to its wide use in the education sector, ability to compare results to other organizations and countries, and ability to provide more precise estimates of literacy levels. The Uwezo assessment was used in 2017 to gather a 2nd timepoint of data, but it will might be phased out to prevent administering two separate assessments at once.

Results

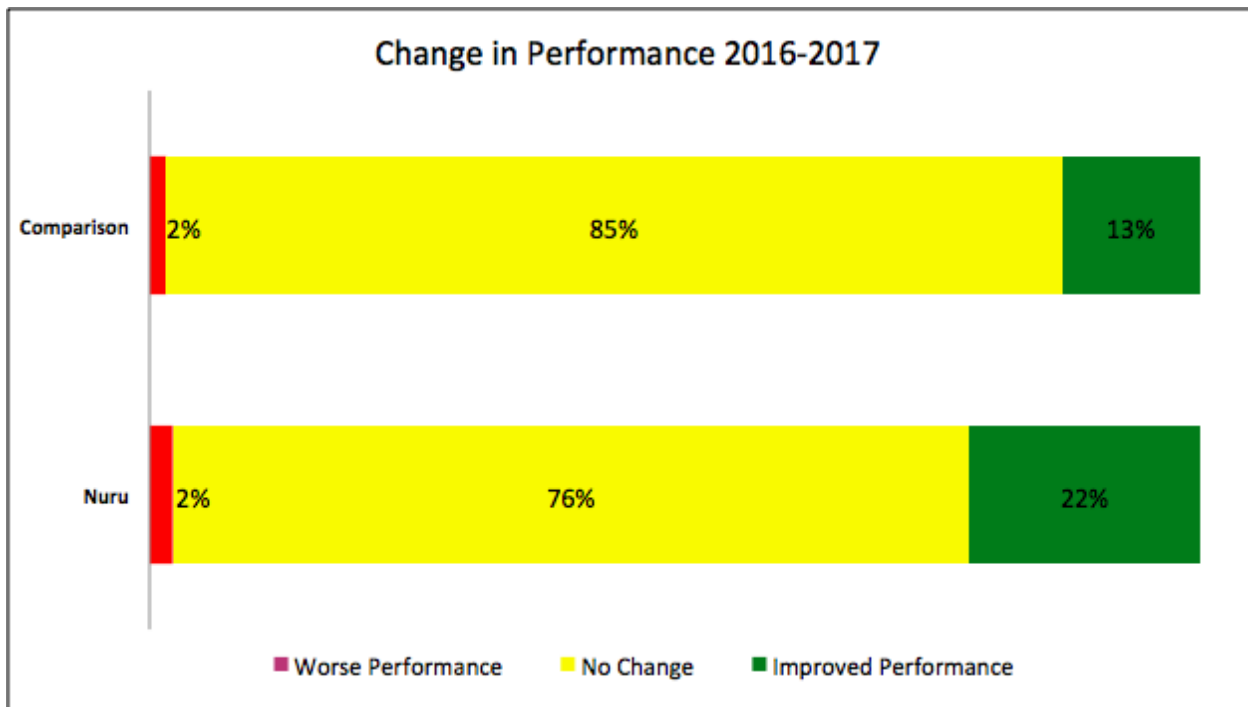
The results portion of this report is broken down into two sections: 1) The results of the Uwezo assessment which depict growth of students from 2016-2017 and 2) The results of the EGRA assessment for 2016-2017. The students tracked in these analyses completed Kindergarten and Grade 1 in 2016 and Grades 1-2 in 2017.

Results: Uwezo 2016-2017

The results of the Uwezo assessment are often broken down into levels: Nothing, Letter, Word, Paragraph, Story and Literate. Students are characterized by the highest level they were proficient at on the Uwezo exam. For example: If the student is able to read the two short paragraphs of the Uwezo assessment fluently with minimal errors, but not able to read the full story given to them after that, they will be marked as having attained the paragraph level. At baseline in 2016, the highest level attained on the Uwezo was recorded for both Nuru and Non-Nuru students. For the 2017 follow-up assessment, the highest level attained on the Uwezo for each of the same students with the goal of understanding how many students moved up a level, stayed the same, or performed worse than in 2016 (See Figure 1).

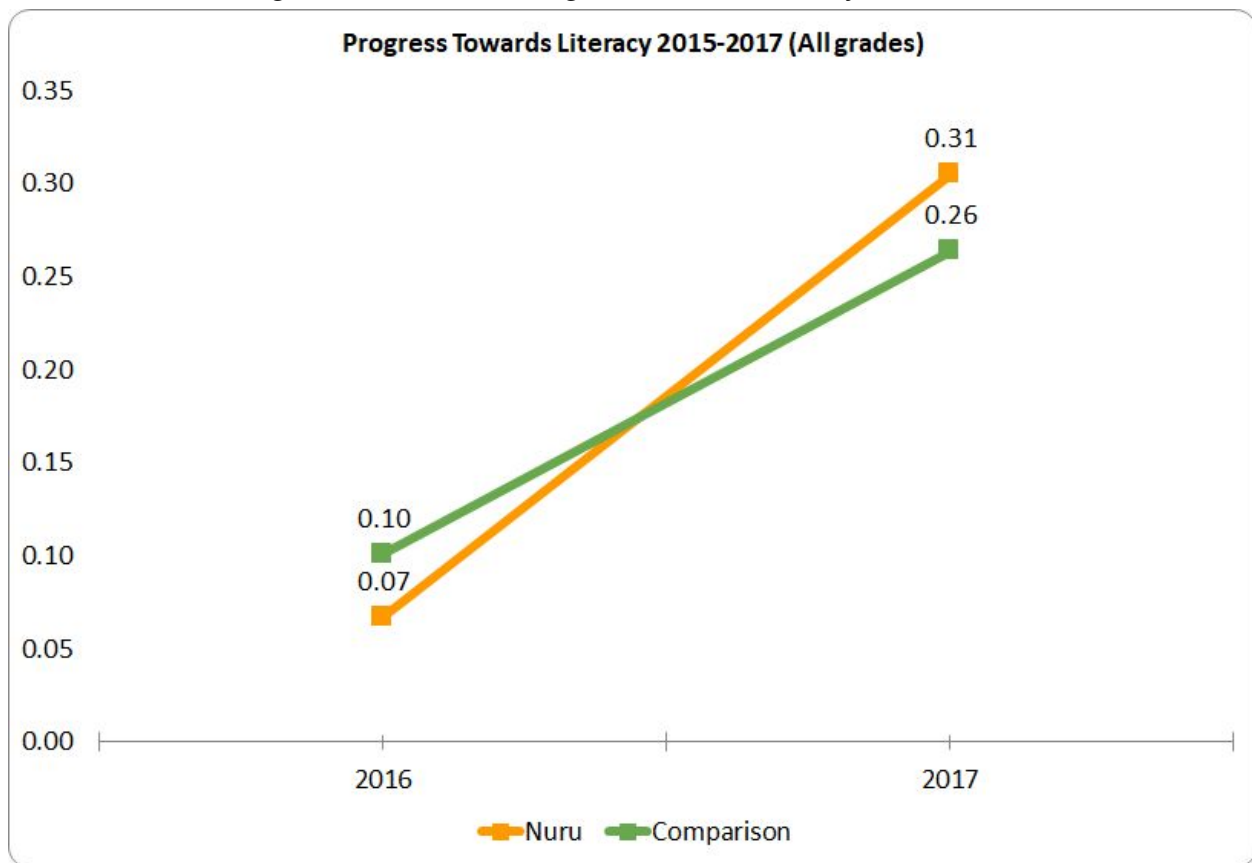
Figure 1 shows the percentage of students in the Nuru-service areas versus the children in the non-Nuru comparison areas. Overall, approximately 22% of the children in Nuru service areas increased at least one level on the Uwezo assessment, while only 13% of children in the comparison areas increased one level. The difference of 9% is reflected as impact of the Nuru Education program over one year of the program. While the majority of students, 76%, stay at the same level in Nuru areas, a small percentage (2%) of children perform worse and their literacy levels drop from 2016 to 2017. Overall, more children in Nuru areas are improving their reading levels than non-Nuru areas.

Figure 1: Change in Literacy Levels 2016-2017



In addition to how many students improve their literacy levels, Nuru also looked at the average literacy level students achieved. At baseline in 2016, children in Nuru areas averaged approximately 0.07 on a scale of 0-5, while non-Nuru students averaged 0.10 (Figure 2). In practical terms, this meant that the majority of students in both groups were not even able to recognize letters, the initial level on the Uwezo assessment, where children are asked to identify 4 of 8 letters presented. At follow-up in 2017, Nuru students averaged 0.31 compared to only 0.26 for comparison students. Nuru students grew by 0.24 points, while comparison students grew by 0.16 points, a difference of 0.09 points. While this difference was small, children in Nuru areas were growing at a faster rate than non-Nuru areas. Overall, children in both Nuru and comparison areas were averaging well below the “Letter” level on Uwezo.

Figure 2: 2015-2016 Progress Towards Literacy All Grades



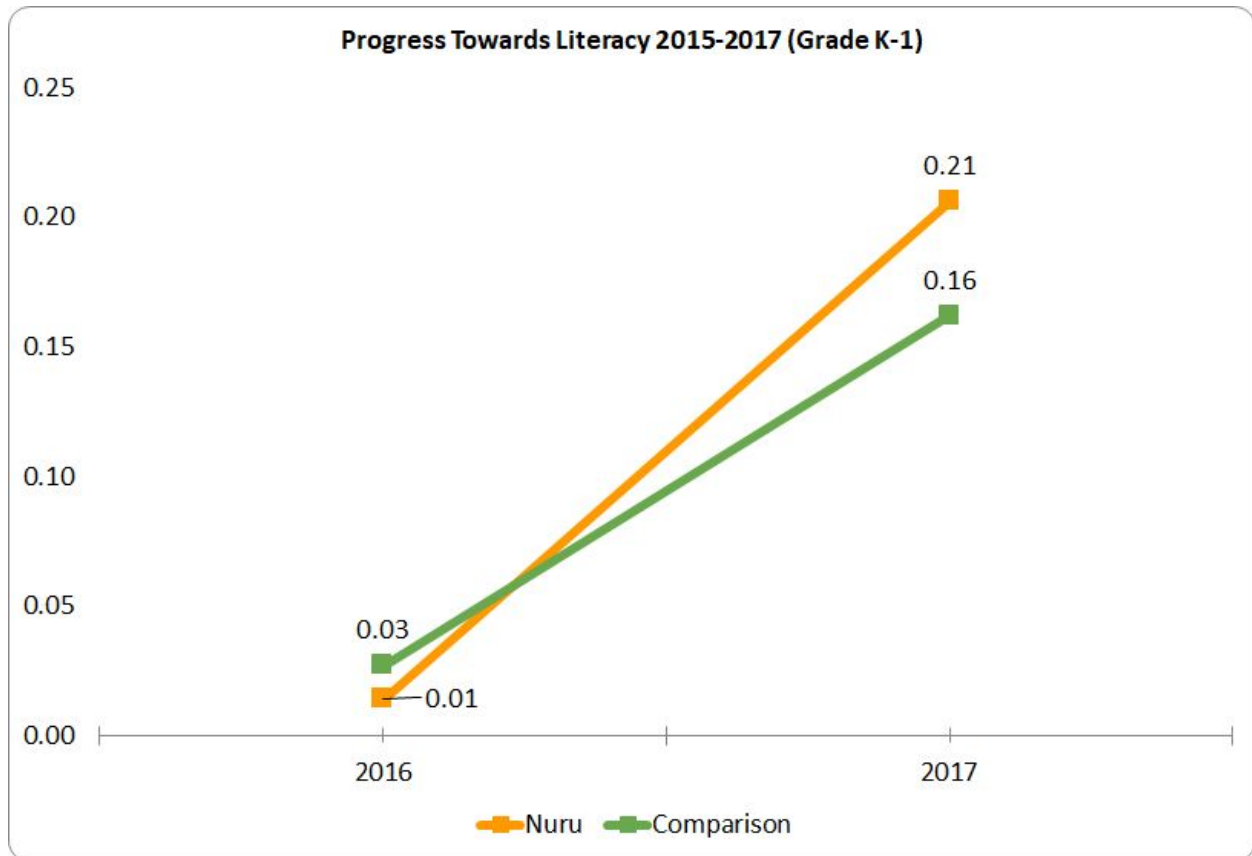
Literacy Scores: 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story, 5 = Full Literacy

While overall literacy levels are still low, children in the Nuru areas are trending up over time. The comparison group is growing as well, but at a slightly slower level. It is important to note that one explanation for the comparison group’s growth is spillover. Nuru works with Woreda (district) officials that oversee all of the schools and cluster supervisors who have some Nuru intervention schools and some comparison schools. The exact spillover effects cannot be determined, but anecdotally, the Woreda is implementing some of the best practices Nuru is teaching at other non-Nuru intervention schools.

Nuru saw challenges with its out of school reading activities in 2016-2017. Volunteers did not show up regularly and when they did, instruction and supervision of children engaged in reading activities was not high quality. As a result, Nuru decided to shift strategy to support after school reading sessions held at schools led by trained teachers. This activity is scheduled to start in January 2018, and will emphasize the practice of reading. Additionally, Nuru saw that families were not involved in children’s reading. Nuru Education will also implement behavior change workshops with mothers of school children beginning in 2018. Themes will emphasize the importance of sending children to school, allowing more time for homework and reading practice at home, creating a home literate environment, and giving supplemental reading charts to each Nuru farmer household.

When the aggregate results are broken down by grade level, students in Nuru areas outperform students in non-Nuru areas at each set of grades (Figure 3.1). Students in Nuru areas who moved from grade K to 1 from 2016 to 2017 grew by a slightly larger margin, .07 points, than the comparison group.

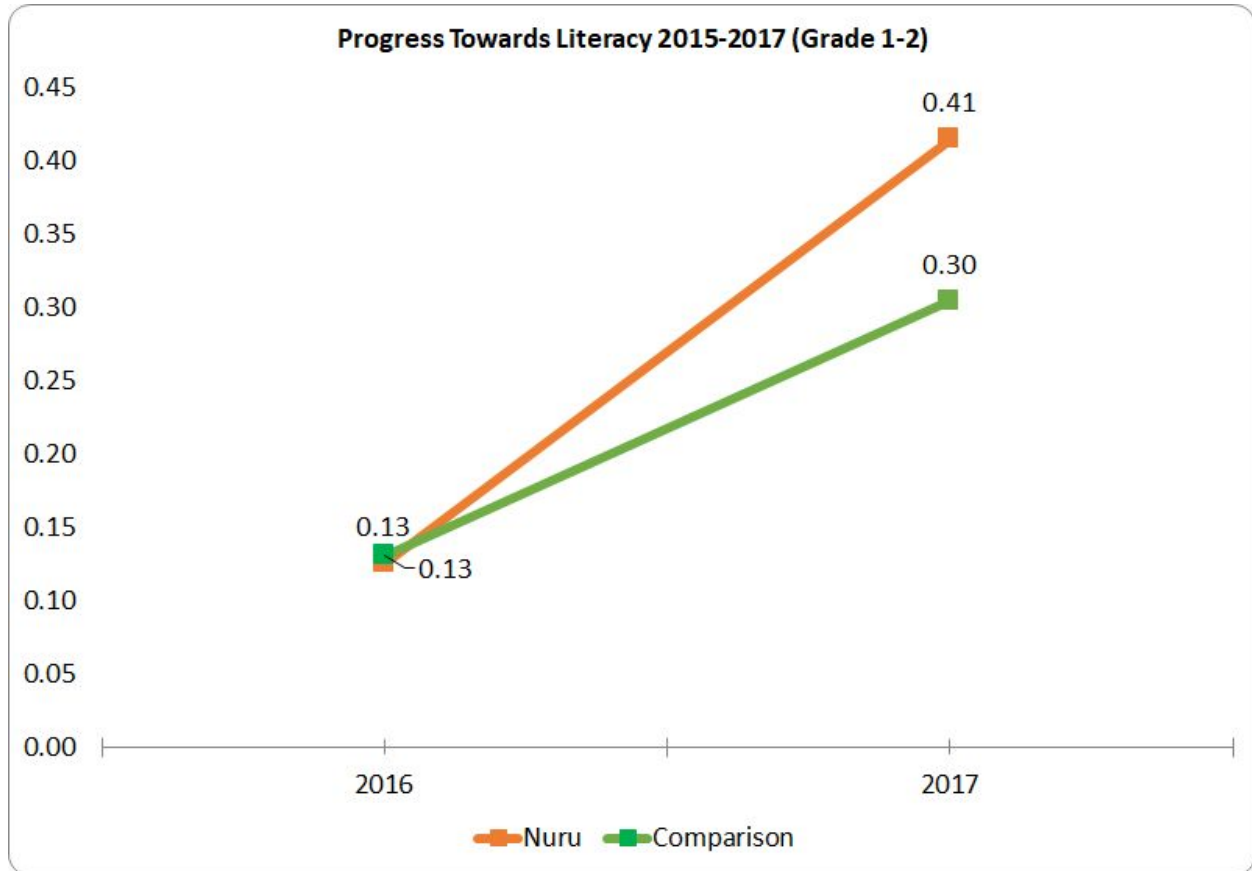
Figure 3.1: Progress Towards Literacy Grade K-1



Literacy Scores: 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story, 5 = Full Literacy

In Figure 3.2, students who complete Grade 1 at baseline in 2016 and Grade 2 at follow-up in 2017 grew by .28 points in Nuru areas vs .17 in comparison areas. This difference of .09 points can be seen as Nuru’s impact as both groups started at the same level.

Figure 3.2: Progress Towards Literacy Grade 1-2



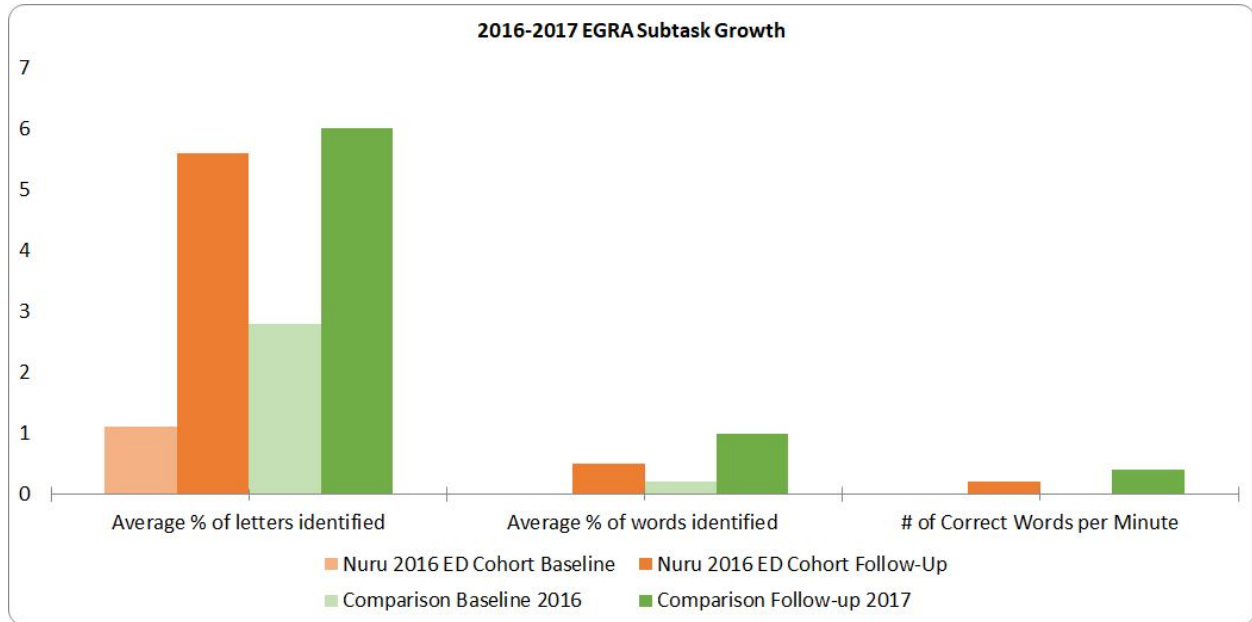
Literacy Scores: 0 = None, 1 = Letter, 2 = Word, 3 = Paragraph, 4 = Story, 5 = Full Literacy

Results: EGRA 2016-2017

As noted in the methodology section, 2016 was the first year that subtasks of the Early Grade Reading Assessment (EGRA) were administered by Nuru in Ethiopia. Nuru also followed up using those EGRA subtasks in 2017. On the domain for average percentage of letters identified (out of 50), Nuru students grew by 4.5%, while comparison students grew by 3.2%. Gains on the percentage of letters identified and correct words per minute were not significantly different from the comparison group with the vast majority of children not able to read any words. While Nuru’s students growth was small, it is important to remember that over 94% of children at baseline in Nuru’s group were not able to identify letters. That percentage of zero scores has decreased by 18% for Nuru children over the course of one year compared to only a 7% reduction in the comparison group. Nuru students are making more progress than

comparison students, but there continues to be a need for more emphasis at the basic letter identification level given the very low levels of literacy of the catchment area.

Figure 4: 2016-2017 EGRA Sub-task Results



Limitations

While Nuru farmer children saw gains in literacy over and above children in non-Nuru areas, Nuru recognizes some limitations to this study. As in any longitudinal study over the course of time, retention of participants is a challenge. Nuru had some challenges in retaining initial participants, though sample sizes are still large enough to compare Nuru students to non-Nuru students. Additionally, the results of this analysis only compare average scores across Nuru farmer children and non-Nuru farmer children. Control variables and other factors are not included, which may have some effect on the overall assessment of impact. As mentioned earlier, there is likely to be spillover from the Nuru intervention into the comparison areas due to working with Woreda (district) officials who are implementing some of Nuru’s best practices across the entire area. It is not possible to estimate this spillover effect on the comparison group’s growth, but it should nevertheless be noted.

Conclusion and Recommendations

The Nuru Ethiopia Education Program made impact, helping to increase students’ literacy levels on both the average progress towards literacy and core reading skills. Students showed progress towards using reading as a skill to learn new things which could open up opportunities in the future and prevent the cycle of intergenerational poverty.

2017 Nuru Ethiopia Education Impact Assessment

While there is still much room for growth, with the majority of Nuru children only reading below letter level, Nuru's literacy intervention does appear to be making positive impact. The next follow-up assessment will be taken in August 2018 to assess the impact of Nuru's education program.

After an extensive review process in 2017 where previous impact results were analyzed and brought together with monitoring data, the following changes are being implemented by the program beginning in 2018:

1. Including Kindergarten teachers in the teacher training sessions each month at schools to help establish some of the foundational skills such as letter identification at an early age.
2. Transitioning from out of school reading camps to support tutorial sessions during school free periods and after school to emphasize core reading skills.
3. Adding a behavior change communication components to parent meetings through cooperative activities with women such as healthcare care groups and saver meetings to continue to emphasize the importance of children attending school and reading outside of school walls.
4. Creating reading rooms for some schools to ensure greater use of books during school time.

An additional recommendation based on the data from this report is that Nuru Ethiopia focus its efforts on how to effectively teach letter identification and word decoding skills due to the lack of these basic literacy skills in the catchment area.