BACKGROUND

The Uzbekistan Education for Excellence Program (the Program) is a 4-year program (December 9, 2019–December 8, 2023) funded by the United States Agency for International Development (USAID) and implemented by the RTI International Consortium[1] in collaboration with the Uzbekistan Ministry of Public Education. The Program conducted baseline Early Grade Reading and Mathematics Assessments (EGRA and EGMA, respectively) in November and December 2021. The purpose of the baseline was to measure the pre-intervention levels of mathematics and Uzbek language reading achievement for students at the end of grade 2 and grade 4. The baseline was originally planned to assess students completing grades 2 and 4 at the end of the 2019–2020 school year in May 2020. However, the baseline was postponed to the beginning of the following school year—November–December 2021—because of COVID-19, and grades 3 and 5 students were assessed as proxies for students completing grades 2 and 4, respectively.

EGRA/EGMA baseline
PARTICIPANTS

4568 students

3252 students

140 Program schools

1406 students

59 comparison schools

Namangan
Sirdarya

Jizzakh

The baseline was part of the larger national EGRA/EGMA survey[2]. Baseline data will be compared with the endline data that will be gathered in May 2022 in the same grades to determine the impact of the intervention in Program schools.

Below is an overview of the EGRA and EGMA tasks administered by grade.

Language	Grade 3	Grade 5
EGRA		
Assessed in Uzbek	• Letter sound identification • Nonword decoding • Oral reading fluency (ORF) (grade 2–level text) • Oral reading comprehension (grade 2–level text)	• Nonword decoding • ORF (grade 4–level text) • Silent reading comprehension (grade 4–level text)
EGRA		
Instructions given in the language of instruction	• Quantity discrimination • Missing number • Addition/subtraction • Word problems • Relational reasoning • Three-dimensional (3D) spatial thinking	• Numbers and operations • Geometry • Measurement • Statistics

[1] The RTI International Consortium includes RTI, Florida State University, and Mississippi State University.
[2] 2021 National Early Grade Reading Assessment for Uzbekistan: Assessment Outcomes. (n.d.) Early Grade Reading Barometer. Retrieved from https://earlygradereadingbarometer.org/results/Uzbekistan/2021/outcomes

RECOMMENDATIONS

EGRA: Most students have mastered the basic skills needed to eventually be able to read fluently and with comprehension in Uzbek. It is important for students to know how to read, but they also need to be able to comprehend what they are reading. The rate of grade-level comprehension was high in grade 3 but relatively low in grade 5.

Teachers need continued support to implement an effective, evidence-based instructional methodology to strengthen the acquisition of basic reading skills and help students master higher-order skills (e.g., fluency, comprehension) as they advance to higher grades.

The concept of fluency includes reading with speed, accuracy and understanding. Teacher's emphasis on speed reading in the traditional reading subject, needs to be expanded to fluency in Uzbek Language by enhancing teacher's strategies towards attention to greater accuracy and understanding in materials and the training.

Teacher professional development (TPD) activities should emphasize training teachers on reading fluency and reading comprehension.

Effective instruction should be complemented with appropriate teacher guides, student textbooks, and supplementary reading materials.

EGMA: Grade 3 and 5 students were found to be reasonably proficient on tasks that require the application of elementary mathematics skills but struggled to use these skills to solve more advanced and unfamiliar problems. Like all other subjects, mathematics is a subject that builds on itself, so teachers must ensure that students have a strong understanding of basic mathematics skills before they are moving on to higher-level concepts.

- Students who are struggling with basic mathematics may need more time to practice and master new concepts, revisit earlier concepts they learned to solidify their knowledge, or be shown alternative approaches to solving mathematics problems.
- Teachers can also enhance students' abilities to apply basic skills to higher-level mathematics ideas through different techniques, such as: using mathematics manipulatives, strengthening mathematics conceptual knowledge and independent problem solving.
- TPD activities should emphasize training teachers on strategies that can help students improve in the areas where students showed lower results (e.g., relational reasoning, 3D spatial thinking, geometry, and measurement).
- Because the student textbooks contain exercises designed for students with an average level of achievement, the Program could develop and publish a set of additional examples and tasks for students that need more support and more advanced students.

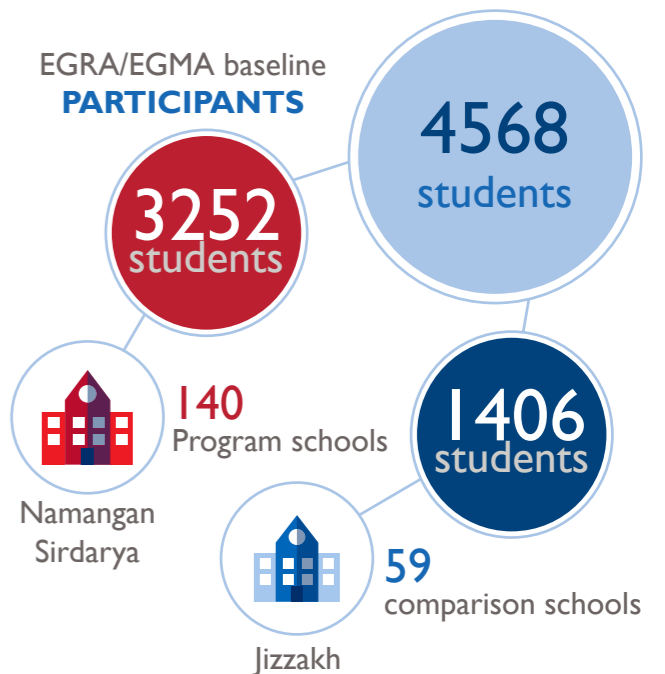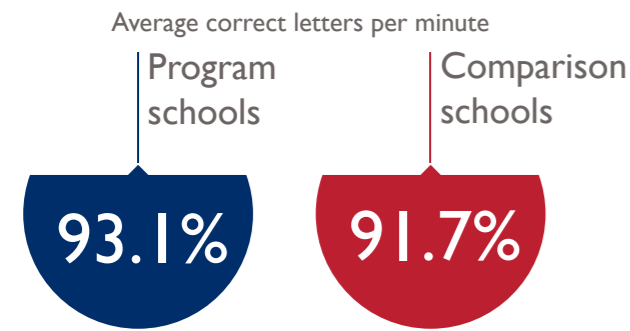The main findings of the EGRA/EGMA baseline are presented below. Overall, the Program and comparison school averages were similar.
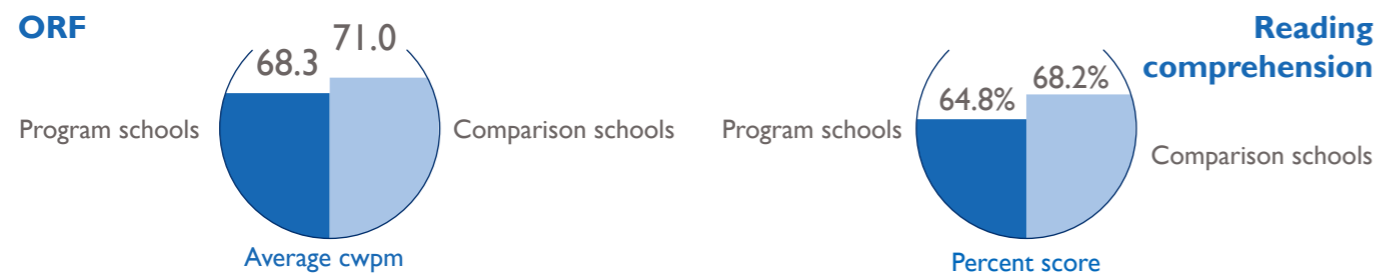
GRADE 3 AND GRADE 5 EGRA RESULTS

Grade 3 students demonstrated mastery of letter sounds.

Average correct letters per minute

Program schools

93.1%

Comparison schools

91.7%

Grade 3 students scored high on ORF and reading comprehension.

ORF

Treatment	Average correct words per minute (cwpm)
Program schools	47.9
Comparison schools	49.5

Reading comprehension

Treatment	Percent score
Program schools	79.1%
Comparison schools	80.3%

Average ORF was highest in grade 5, but comprehension was relatively low.

ORF

68.3 Program schools

71.0 Comparison schools

Average cwpm

Reading comprehension

64.8% Program schools

68.2% Comparison schools

Percent score

DISAGGREGATED EGRA RESULTS

Gender

- Grade 3: Girls performed better than boys on all tasks, and the differences were statistically significant (p<0.001), except for reading comprehension.
- Grade 5: Girls scored significantly better than boys on nonword decoding and ORF p<0.001), but boys outperformed girls on silent reading comprehension (p<0.01).

Student rural/urban classification

- Grade 3: There were no differences in performance on the letter sounds and nonword decoding tasks between students in rural and urban schools. Students in rural schools read slightly more words than students in urban schools (average score: 48.5 cwpm [rural] vs. 46.8 cwpm [urban]), but students in urban schools understood more of what they read than their peers in rural schools (average percentage of questions correctly answered: 78.4% [rural] vs. 80.6% [urban]).
- Grade 5: Students in urban schools performed better than students in rural schools on all tasks, although the differences were not statistically significant.

Region

- Across all tasks, the differences in literacy scores between Namangan and Sirdaryo Regions were not significant in grade 3 or 5, with the exception of grade 5 silent reading comprehension (average scores: 61.9% [Namangan] vs. 73.3% [Sirdaryo]; p<0.0).
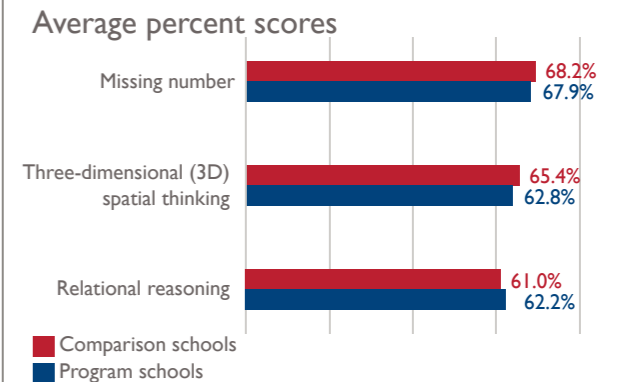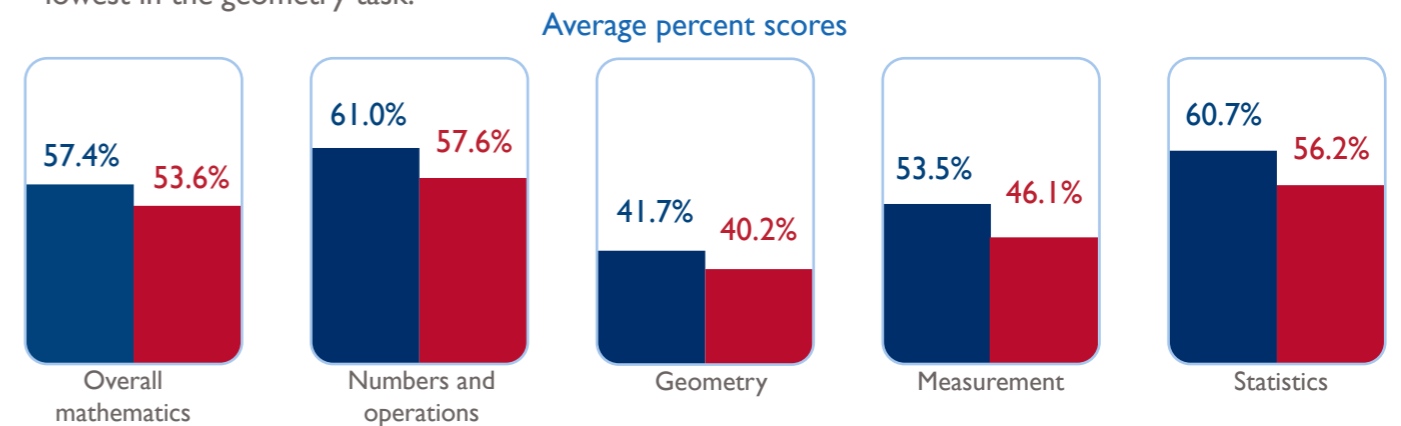
GRADE 3 EGMA AND GRADE 5 WRITTEN MATHEMATICS TEST RESULTS

Grade 3 students showed high proficiency in tasks that required the application of foundational mathematics skills.

Average percent scores

	Comparison schools	Program schools
Number discrimination	97.5%	97.5%
Addition	84.4%	83.2%
Subtraction	78.9%	74.7%
Word problems	73.4%	75.4%

■ Comparison schools
■ Program schools
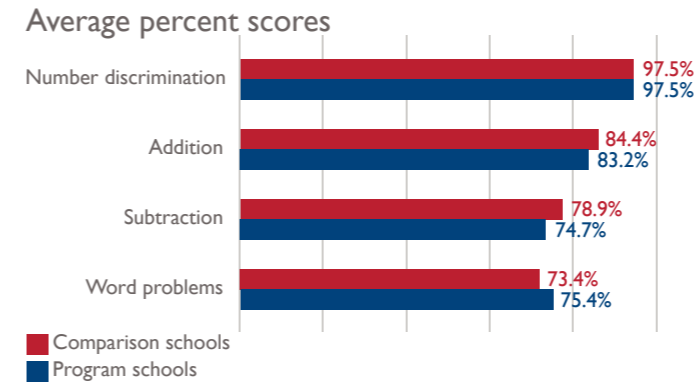
Grade 3 students struggled with problems that required high-order mathematical reasoning skills.

Average percent scores

	Comparison schools	Program schools
Missing number	68.2%	67.9%
Three-dimensional (3D) spatial thinking	65.4%	62.8%
Relational reasoning	61.0%	62.2%

■ Comparison schools
■ Program schools

Grade 5 performance on the written mathematics test was moderate, with overall average scores of 57.4% and 53.6% in program and comparison schools, respectively. This finding implies that students struggle to apply the foundational skills acquired in the early grades to more complex math problems in higher grades. Grade 5 students' performance was strongest in the numbers and operations task and lowest in the geometry task.

Average percent scores

Overall mathematics	Numbers and operations	Geometry	Measurement	Statistics
57.4% / 53.6%	61.0% / 57.6%	41.7% / 40.2%	53.5% / 46.1%	60.7% / 56.2%

DISAGGREGATED MATHEMATICS RESULTS

Gender

- Grade 3: There were no statistically significant gender differences in students' performance in math in grade 3, except in 3D spatial thinking, where boys outperformed girls by 4.3 percentage points.
- Grade 5: Estimates show that overall, boys outperformed girls (average percent score: 58.4% [boys] vs. 56.4% [girls]; p<0.05).

Student rural/urban classification

- In both grades, there were no statistically significant differences in performance between students from urban and rural schools, across all tasks.

Region

- Across all grades and tasks, the differences in students' achievement in mathematics between Namangan and Sirdaryo Regions were not significant, with the exception of 3D spatial thinking in grade 3 (average percent score: 61.5% [Namangan] vs. 66.9% [Sirdaryo]; p<0.05). Although this difference is significant, it is not large in terms of magnitude—just 5.4 percentage points.