ALL CHILDREN READING: GRAND CHALLENGE FOR DEVELOPMENT

EVALUATION REPORT

# Qysas (Stories): An Arabic Leveled Digital Library

Implemented by Little Thinking Minds in Jordan

SEPTEMBER 2017

Prepared by
School-to-School International (STS)
For All Children Reading: A Grand Challenge for Development

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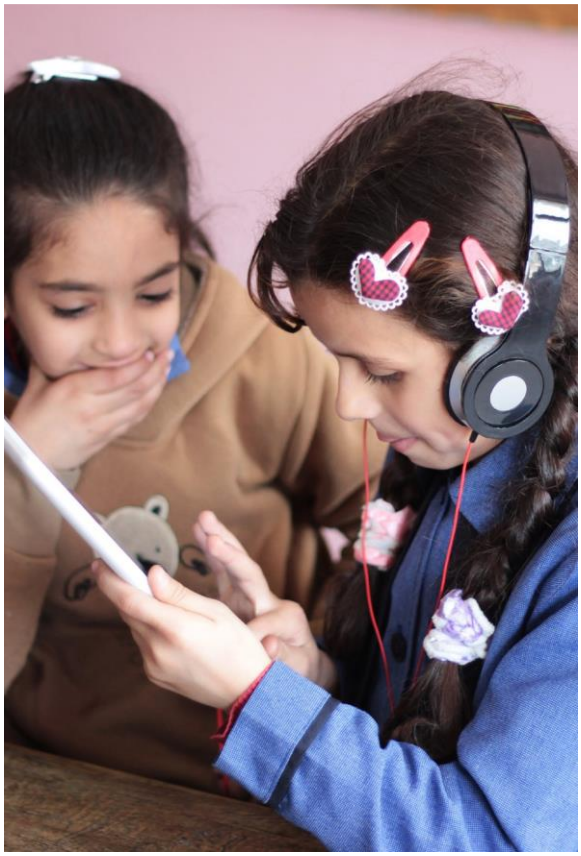

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## List of Acronyms

| | |
|---|---|
| 2012 National Survey | 2012 National Early Grade Literacy and Numeracy Survey |
| ACR GCD | All Children Reading: A Grand Challenge for Development |
| CLSPM | Correct Letter Sounds per Minute |
| CNWPM | Correct Nonwords per Minute |
| Co-ed | Co-educational |
| CSSPM | Correct Syllable Sounds per Minute |
| CWPM | Correct Words per Minute |
| E-book | Electronic Book |
| EGRA | Early Grade Reading Assessment |
| EOP | End-of-Project |
| FOI | Fidelity of Implementation |
| GOJ | Government of Jordan |
| ICT | Information and Communications Technology |
| INTEGRATED | Integrated Services-Indigenous Solutions |
| IRB | Institutional Review Board |
| JEI | Jordan Education Institute |
| LTM | Little Thinking Minds |
| M&E | Monitoring and Evaluation |
| MOE | Ministry of Education |
| NICRA | Negotiated Indirect Cost Recovery Agreement |
| ORF | Oral Reading Fluency |
| QRF | Queen Rania Foundation for Education and Development |
| Qysas | Qysas (Stories): An Arabic Leveled Digital Library for Every Classroom |
| PHARE | Programme Harmonisé d'Appui au Renforcement de l'Education |
| RAMP | Early Grade Reading and Math Project |
| RTI | RTI International |
| STS | School-to-School International |
| USAID | United States Agency for International Development |

# I. Executive Summary

All Children Reading: A Grand Challenge for Development (ACR GCD)—a partnership between the United States Agency for International Development (USAID), World Vision, and the Australian Government—is an ongoing series of grant and prize competitions that leverage science and technology to source, test, and disseminate scalable solutions to improve literacy skills of early grade learners in developing countries. Round 2 of ACR GCD, which started in 2014 and continues through 2017, supports technology-based innovations to improve early grade reading outcomes in developing countries.[1] These technology-based innovations concentrate on three focus areas:

1. Mother tongue instruction and reading materials
2. Family and community engagement
3. Children with disabilities

ACR GCD Round 2 increased its focus on the assessment of early grade reading skills to understand the ability of technology-based innovations to improve the literacy skills of early grade learners. To measure this, ACR GCD uses the Early Grade Reading Assessment (EGRA) to systematically assess reading skills across all Round 2 grantees. The EGRA is an oral assessment that measures students' most basic foundational literacy skills in the early grades—specifically, recognizing letters of the alphabet, reading simple words, understanding sentences and paragraphs, and listening with comprehension. The EGRA methodology was developed under EdData II and has been applied in more than 30 countries and 60 languages.[2] The EGRA instruments used by ACR GCD grantees were adapted to reflect the specific context of each grantee's project, including adaptations for students who have low vision or are blind and students who are deaf or hard of hearing.

Little Thinking Minds (LTM)—an ACR GCD Round 2 grantee—is a Jordanian women-owned for-profit business that creates engaging, digital literacy tools to improve children's Arabic reading skills. LTM implemented the Qysas (Stories): An Arabic Leveled Digital Library for Every Classroom (Qysas) project to address the lack of leveled Arabic-language reading materials available to early primary school students in Jordan. The project aimed to increase early grade literacy skills in Arabic—specifically, oral language and vocabulary, fluency, and comprehension—by providing self-paced, interactive, electronic reading materials that supplemented ongoing classroom instruction. It began in January 2015 and ended on July 31, 2017.

The Qysas project developed an Arabic early grade reading and learning platform that is child-centered and provides a leveled and differentiated experience. It is designed for Grade 2 students in Jordan to use at school, both during and outside of class. The learning platform, also called Qysas, contains a series of interactive electronic books (e-books) and teaching materials that focus on developing letter recognition, word formation, and reading comprehension skills. Students in the Qysas project accessed the platform during literacy group sessions held at their school. LTM implemented the project in partnership with Integrated Services-Indigenous Solutions (INTEGRATED) and the Jordan Education Institute (JEI).

To understand how the Qysas project impacted students' early grade reading skills, School-to-School International (STS) and LTM conducted EGRAs twice during the project. Baseline data were collected in September and October 2016, and endline data were collected in May 2017.[3] During endline data collection, STS also conducted

1 All Children Reading. (2017, June). *About us.* Retrieved from http://allchildrenreading.org/about-us/

2 EdData II was a contract mechanism funded by USAID from January 1, 2004, to December 31, 2013. Implemented by RTI International, the purpose of EdData II was to improve the accuracy, timeliness, accessibility, and use of data for education policy and program planning. See http://www.rti.org/sites/default/files/brochures/eddataii.pdf for additional details.

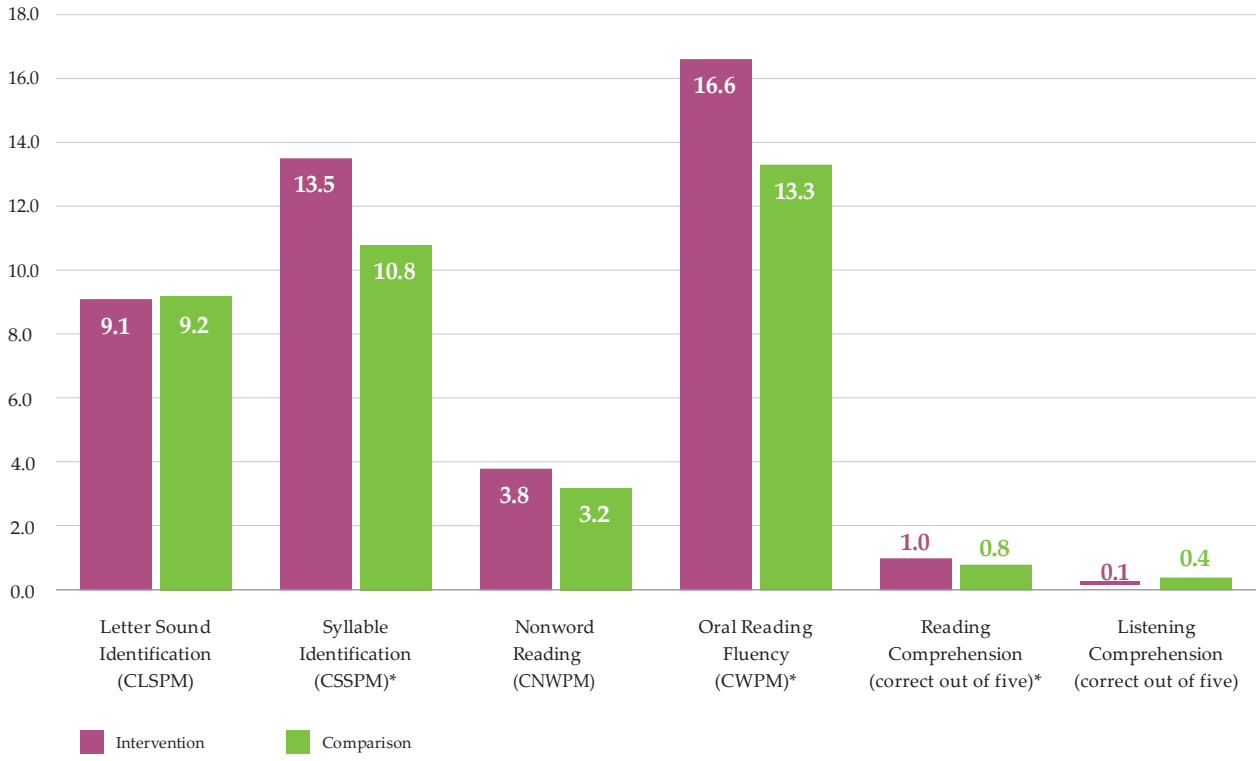
3 LTM implemented the Qysas project over two academic years with two different cohorts of students. While baseline and endline EGRA data were also collected on the 2015–16 cohort of students, results presented in this report are just from the 2016–17 cohort of students.

semi-structured, end-of-project (EOP) interviews with the Qysas project staff, teachers, students, and other stakeholders. The interviews were designed to explore any lessons learned from the project's implementation, elicit data that would lead to better understandings about how the project impacted students, and allow funders and researchers to assess the potential scalability of the Qysas project.

The following report presents a summary of lessons learned from project implementation, EGRA results, and scalability assessments.

## Key Findings

Figure 1: **Average Gain Scores from Baseline to Endline by Subtask and Group**[4]




- Students who participated in the Qysas project achieved statistically significant greater gains than comparison group students who did not participate in the project on three EGRA subtasks: syllable identification, oral reading fluency (ORF), and reading comprehension. On the syllable identification subtask, students in the intervention group gained 13.5 correct syllable sounds per minute (CSSPM) from baseline to endline, in contrast to students in the comparison group, who gained only 10.8 CSSPM from baseline to endline. On the ORF subtask, intervention group students were able to read 16.6 additional correct words per minute (CWPM) at endline over baseline, as opposed to comparison group students, who read an additional 13.3 CWPM. On the reading comprehension subtask, intervention students correctly answered an average of 1.0 additional questions correctly at endline than at baseline, while comparison students correctly answered only 0.8 additional questions. These findings are notable, as the project targeted fluency and comprehension.

4 An asterisk (*) indicates the gain score for the intervention group was significantly higher than the gain score for the comparison group at $p<0.05$. *N* sizes: $N_{Intervention}=285$; $N_{Comparison}=251$.

- Students participating in the Qysas project had a statistically significant lower proportion of zero scores than their peers in the comparison group on two subtasks at endline: ORF and reading comprehension. On ORF, 12.6 percent of intervention group students were unable to correctly read a single word, in contrast with 19.1 percent of comparison group students. On the reading comprehension subtask, 32.3 percent of intervention group students were unable to correctly answer a single question, compared with 49.4 percent of comparison students. The proportions of intervention and comparison group students receiving zero scores on the other subtasks at endline were comparable.
- Girls who participated in the Qysas project had significantly greater gains than girls in the comparison group on three subtasks: syllable identification, ORF, and reading comprehension. There were no significant differences in the average gains of boys who participated in the Qysas project and boys in the comparison group on any subtask. Specifically, intervention group girls gained 10.0 CSSPM on the syllable identification subtask, in contrast with 6.4 CSSPM among comparison group girls. Intervention group girls gained 14.3 CWPM on the ORF subtask, as compared with 9.4 CWPM among comparison group girls. Finally, intervention group girls were able to correctly answer 1.0 additional reading comprehension question at endline over baseline, while comparison group girls answered 0.6 additional questions.
- The proportion of girls in the intervention group who received zero scores at endline was statistically significantly lower than the proportion of girls in the comparison group on two subtasks: reading comprehension and listening comprehension. On all five subtasks, the proportion of boys in the intervention group who received zero scores was comparable to the proportion of boys in the comparison group who received zero scores. On the reading comprehension subtask, 35.4 percent of intervention group girls were unable to answer correctly a single question at endline, compared with 62.4 percent of comparison group girls. On the listening comprehension subtask, 12.2 percent of intervention group girls received zero scores at endline, while 24.8 percent of comparison group girls received zero scores.
- Over the life of the Qysas project, teachers held an average of 44 literacy group sessions, at which student attendance was high. On average, students attended 42 literacy group sessions. The average number of sessions held at all-girls schools was slightly higher than the average at all-boys schools—49 sessions versus 42 sessions, respectively, while co-educational (co-ed) schools held an average of 44 sessions. This means that students who attended all-girls schools received, on average, more exposure to the Qysas project than students who attended all-boys schools.
- During the Qysas project, LTM created a total of 145 e-books—126 interactive e-books and 19 basic e-books—that were distributed to students through the Qysas platform. On average, each student who participated in the project read 105 books on the Qysas platform. The average number of books read per student was slightly higher at all-girls schools than at all-boys schools: 127 books per student and 102 books per student, respectively. Students at co-ed schools read an average of 104 books during the project. Analysis revealed a weak but statistically significant relationship between the number of books read per student and EGRA gains on four subtasks: syllable identification, nonword reading, ORF, and reading comprehension. This indicates that students who read more books tended to have greater gains on these subtasks.

# II. Project Description

LTM, a Jordanian woman-owned for-profit business that creates engaging, digital, Arabic literacy tools to improve children's reading skills, developed the Qysas project to address the lack of leveled Arabic-language reading materials for early primary school students in Jordan. The project, implemented in partnership with INTEGRATED and JEI, aimed to increase early grade literacy skills in Arabic—specifically, oral language and vocabulary, fluency, and comprehension—by providing self-paced, interactive, electronic reading materials that supplemented ongoing classroom instruction.

The Qysas project developed a child-centered, leveled, and differentiated information and communications technology (ICT)-based Arabic early grade reading and learning platform for Grade 2 students in Jordan to use at school, both during and outside of class. The learning platform, called Qysas, contained a series of interactive, animated e-books and teaching materials that focused on developing word reading and comprehension skills. The Qysas platform was used by teachers and students in select schools on pre-loaded tablets. The platform was also available to parents for home use with their children on digital devices.

The Qysas project had two key components:

1. Development of the Qysas platform and leveled e-books, which were loaded onto the platform for use by students
2. Creation of literacy groups, led by trained teachers, in Jordanian public schools in which students could use the Qysas platform on tablets

LTM worked with regional publishers to select 145 engaging books to develop into e-books for the Qysas project and loaded them onto the Qysas platform.[5] Students logged on to the platform using a unique user name and password ensuring that each student's unique usage data were captured through the platform. Selected books represented a range of reading levels and topics; all were gender- and culturally sensitive. Each e-book had corresponding audio voice-overs to allow students to listen as they read and quizzes to assess students' comprehension. LTM grouped the e-books into seven levels, and all students began at level one. Once a student read all of the books at a given level and completed the corresponding quizzes, he or she could progress to the next level. Although the platform was originally designed to be used online, LTM also programmed an offline option to accommodate internet connectivity challenges at the schools. The Qysas team collected student usage data during site visits by downloading the records onto portable memory devices.

LTM engaged students in the Qysas project by collaborating with JEI Discovery Schools in Amman that were equipped with technical infrastructure, including internet access.[6] Participating schools provided students with opportunities to use the tablets and the Qysas platform either during class or after school during literacy group sessions. These sessions were held twice a week for 45 minutes, at which time students could listen to and read along with e-books and take quizzes that corresponded to the e-books. Teachers and project staff monitored the literacy group sessions to check on student progress and verify that students' reading abilities matched the level of e-books they were reading on the Qysas platform.

5 LTM developed 126 interactive e-books, including comprehension quizzes. LTM uploaded 19 additional basic e-books—with no comprehension quizzes—for students who had completed all 126 interactive e-books by March 2017.

6 JEI Discovery Schools were created as part of a private-public partnership with Jordan's MOE and USAID that began in 2004 and ended in 2009. JEI schools had access to ICT equipment, broadband connectivity, and a cadre of teachers skilled in using ICT and implementing the electronic curriculum. See https://partnerships.usaid.gov/partnership/jordan-education-initiative-jei for more details.

Prior to the first year of implementation, the Qysas project team trained teachers, JEI interns, and students on how to use the platform on tablets and mobile devices. Teachers and JEI interns also received comprehensive training on tablet management and upkeep, the types of reading materials available on the platform, how to monitor students' progress to enhance classroom teaching, and how to keep records for project monitoring purposes. Participating schools received one tablet and one headset for each student in its literacy group. Students received instructions on how to access the platform on mobile phones for use outside of school.

LTM implemented the Qysas project over two academic years with two cohorts of Grade 2 students at ten intervention schools. Implementation began in selected schools with the first cohort of Grade 2 students during the 2015–16 academic year. During the first year of implementation, teachers and JEI interns were responsible for overseeing the literacy groups. Due to technical and implementation challenges during the first year of implementation, the project was extended through the 2016–17 academic year. A new cohort of Grade 2 students was selected from the same ten intervention schools in the second year. Although many aspects of the project were implemented similarly during the 2016–17 academic year, LTM improved the Qysas platform and stabilized the implementation model. Additionally, during the second year, only teachers—not JEI interns—lead literacy groups. Teachers were given the option of conducting the group session during the school day, instead of being required to host group sessions after school. All teachers opted to hold literacy group sessions at the end of the school day as part of an unstructured literacy strengthening class.

Over the course of two years, the project reached 720 students: 381 students in the 2015–16 academic year cohort and 339 students in the 2016–17 academic year cohort. Only results from students in the 2016–17 academic year cohort are presented in this report.

## III. Research Purpose and Design

The goal of the Qysas project was to increase early grade literacy skills in Arabic for Grade 2 students by providing self-paced, interactive, electronic reading materials that supplemented ongoing classroom instruction. The research conducted by STS and LTM sought to answer the following research questions specific to the Qysas project:

1. Have the literacy skills of students who participated in the Qysas project (intervention group) improved relative to the literacy skills of students who did not have access to the project (comparison group)?
2. How have the literacy skills of girls and boys who participated in the Qysas project changed relative to the literacy skills of students of the same gender who did not have access to the project?

In addition, EOP research was conducted to answer the following ACR GCD supplemental questions common to all ACR GCD grantees:

1. How successful was the rollout of the project?
2. How did the project influence or impact adults' (teachers, parents, community members) knowledge, skills, or attitude regarding their role in helping children read?
3. How did the project influence certain subsets of the student population more than others based on identifiable contextual factors?
4. How much did the development, implementation, and management aspects of the project cost?
5. Are this project and technology suitable for scaling?

To answer these research questions, STS and LTM collected EGRA data twice during academic year 2016–17. Baseline data were collected in September and October 2016, and endline data were collected in May 2017. Qualitative and cost data were also collected to answer ACR GCD's supplemental questions.

The research design for the Qysas project included one intervention group and one comparison group.

## Sample

Before implementation, LTM evaluated 55 JEI Discovery Schools and identified 24 primary schools in a similar geographic area that met the following selection criteria:

- School has 20 computers available with defined specifications.
- Grade 2 students did not participate in a literacy intervention in the 2014–15 academic year.
- School principal is willing to implement the program.

From the 24 schools that met selection criteria, LTM randomly selected 20 schools to make up the research sample. The 20 schools were then randomly assigned to the intervention and comparison groups, with ten schools in each group. The same ten schools served as intervention schools during both academic implementation years. However, two of the ten initial comparison schools were replaced in the 2016–17 academic year, as one of the schools merged with another school, and the second school was under construction.

Selection of Grade 2 students for the 2016–17 academic year cohort took place during the baseline data collection for the 2016–17 academic year. LTM intended to recruit 50 students per school; however, in reality, the number of students selected to participate in the Qysas project varied based on the school. In the second year of implementation, student engagement depended on the willingness of teachers to participate, the number of students teachers chose to include in literacy group sessions, and purposive selection by school principals of Grade 2 classes. In four schools, an entire class was selected, and in the remaining six schools, teachers and JEI randomly selected a smaller group of students within a larger class to participate (see Annex Table G.1). Comparison group students were randomly selected from all Grade 2 classes in each school.

For the 2016–17 academic year cohort of students, 285 students took part in the intervention group and 251 students in the comparison group. Table 1 provides characteristics of the student sample used in this report.

Table 1: **EGRA Sample Characteristics**[7]

| Group | All Students | Girls | Boys | Attending single sex school | Attending co-ed school | Number of schools |
|---|---|---|---|---|---|---|
| Intervention group | 285 | 82 | 203 | 122 | 163 | 10 |
| Comparison group | 251 | 125 | 126 | 90 | 161 | 10 |
| Total: All Students | 536 | 207 | 329 | 212 | 324 | 20 |

7 Because more boys single-sex schools were randomly assigned to the intervention group, the intervention group sample had a larger proportion of boys than girls.

STS, with support from World Vision, conducted EOP interviews from May 14 to 23, 2017, during endline EGRA data collection. EOP interview details are provided in Table 2.

Table 2: **EOP Interview Sample**

| Type of Interview | *N* | Description |
|---|---|---|
| Project management | 6 | Two LTM and four INTEGRATED team members |
| Principal and teacher | 15 | 13 intervention group teachers, one comparison group teacher, and one intervention group principal |
| Student | 11 | 11 intervention group students |
| Stakeholder | 10 | Five staff members from JEI, three staff members from USAID, and two staff members from the Abdul Hameed Shoman Foundation |
| Total | 42 | |

STS and World Vision purposively selected the Qysas project managers and key stakeholders for EOP interviews. STS and LTM randomly selected four intervention schools and one comparison school to participate in the EOP interviews. All participating teachers were interviewed, as was one school principal. Students were randomly selected for interviews after completing the endline EGRA.

# IV. Fieldwork Preparation and Data Collection

## EGRA Instrument

In 2012, RTI International (RTI) developed an Arabic-language EGRA instrument for Grade 2 students that was adapted to the linguistic context of Jordan; the Qysas project utilized this EGRA. The same EGRA instrument was used at baseline and endline and consisted of six subtasks: letter sound identification, syllable identification, nonword reading, ORF, reading comprehension, and listening comprehension.

During the EGRA, LTM also administered a student demographic survey at baseline and a student questionnaire at endline. The student demographics survey was administered at baseline in intervention and comparison schools to collect background information on students and provide a better understanding of the student population. The student questionnaire administered at endline contained questions related to students' language exposure, socioeconomic status, family literacy, family and teacher reading support, reading materials access, disposition to reading, and technology use. Results of the questionnaire were used to better understand the contextual factors that may have influenced students' reading gains from baseline to endline (see Key Factors for Success).

## Institutional Review Boards

Institutional review boards (IRBs) are responsible for ascertaining the acceptability of proposed research regarding institutional commitments and regulations, applicable laws, standards of professional conduct and practice, and ethical and societal norms. IRBs examine subject recruitment procedures, proposed remuneration, and the informed consent process. IRBs also evaluate the potential risks and benefits to participants outlined in each protocol.

The Qysas project was included in a request for an IRB-review exemption submitted to RTI's Committee for the Protection of Human Subjects as part of an ongoing study in Jordan. RTI received approval of their request on April 12, 2012.

## Baseline EGRA

The original baseline EGRA assessor training, hosted by RTI, took place from August 9 to 13, 2015, prior to the operational baseline data collection for the 2015–16 academic year cohort of students. During training, the assessors reviewed EGRA principles and gained a comprehensive understanding of the EGRA instrument components, practiced EGRA administration and scoring procedures, rehearsed conducting the EGRA assessment on tablets,[8] and learned about the roles and responsibilities of both supervisors and assessors in the field.

The assessors also underwent assessor accuracy testing, which is conducted to ensure consistency in scoring among assessors and to measure the degree to which assessors agree in their assessment decisions.[9] At least 90 percent consistency is considered the minimum requirement; this means that at least 90 percent of assessors' ratings must be consistent with the list of acceptable responses. All assessors met the 90 percent threshold.

8 LTM engaged Prodigy Systems to program the EGRA instrument into a digital form on their platform, Prodigy Assessments.

9 Assessor accuracy testing is similar to interrater reliability testing. According to the *EGRA Toolkit (2nd Edition)*, assessor accuracy refers to the testing conducted during training, while interrater reliability is conducted during operational data collection.

Table 3: **Fieldwork Preparation and Data Collection Timeline for 2016–17 Academic Year**

| Task | Dates |
|---|---|
| Baseline refresher training and operational data collection *(2016–17 academic year cohort)* | September 26–October 13, 2016 |
| Endline refresher training *(2016–17 academic year cohort)* | May 10, 2017 |
| Endline EGRA operational data collection *(2016–17 academic year cohort)* | May 14–June 1, 2017 |
| EOP interviews | May 14–25, 2017 |

Assessors conducted operational baseline data collection for the 2015–16 academic year cohort of students between September 6 and October 26, 2015. After receiving an extension to implement the Qysas project with a new cohort of Grade 2 students during academic year 2016–17, LTM conducted an assessor refresher training with the same assessors that were trained in 2015. The operational baseline data collection for the 2016–17 academic year cohort of students took place from September 26 to October 13, 2016.

## Endline EGRA

Endline EGRA data were collected from May 14 through June 1, 2017. Before operational data collection, STS conducted a one-day refresher training that included assessor accuracy testing and review sessions on the EGRA instrument and its administration. The same assessors who collected baseline data also conducted the endline data collection, and all assessors met the 90 percent assessor accuracy threshold.

## End-of-Project Interviews

STS and World Vision conducted EOP interviews from May 14 to 25, 2017. The purpose of the interviews was to explore the contextual factors that may have impacted variations in implementation and results among schools and students. They also explored the potential scalability of the project. EOP interviews were conducted with four groups: project management, principals and teachers, students, and stakeholders.

Project management interviews consisted of open-ended questions related to general information about the project and the intervention timeline, characteristics of the implementing organizations, perceptions of project design and implementation quality, and considerations for scalability. LTM and INTEGRATED staff members directly involved in the implementation of the Qysas project were interviewed.

Intervention school teachers were asked 27 open-ended questions related to the Qysas project and its technologies, challenges faced in implementing the project with fidelity, practices for delivering literacy group sessions, and perspectives of the platform's ability to help students learn to read. One principal from an intervention school was asked her perspective on the Qysas project and considerations for scalability. One comparison school teacher was asked questions about the school's literacy approaches, use of technology, and early grade reading materials.

Students were asked 13 open-ended questions related to their engagement with the Qysas project, disposition to reading, and overall experience using the Qysas platform as well as their access to reading materials and other assistive technologies at home and in school.

# V. Project Implementation

The Qysas project began on February 1, 2015, and implementation ended in May 2017. This section presents implementation challenges, solutions, and successes that help answer the ACR GCD research question: *How successful was the rollout of the intervention?*

## Development

The development phase of the Qysas project consisted of the creation of e-books and the Qysas platform as well as the procurement of ICT hardware for use by project participants.

Before the Qysas project began, LTM engaged with regional publishers whose books were listed in the Arab Thought Foundation's regional Arabi 21 leveled-reading ranking.[10] LTM identified 50 engaging books and began developing the Qysas platform in the first months of the project. It intended to finalize and roll out the platform with e-books prior to the start of the 2015–16 academic year. By September 2015, the project had developed and tested the e-books and accompanying audio voice-overs with students in two public schools. After receiving an extension for an additional academic year, LTM digitized and created audio voice-overs for 76 additional books. In total, LTM created 126 interactive e-books and 19 basic e-books for the Qysas project. The Qysas project team did not report any significant challenges or delays in developing the e-books.

Development of the Qysas platform commenced with the project grant in February 2015. The platform was finalized by September 2015 and pilot tested in schools in the last months of 2015. The platform was updated four times after the start of implementation for the 2015–16 academic year cohort; each version update sought to improve user experience and backend data capture. When LTM released the first version of the Qysas platform, content was only available online, with student progress intended to be automatically captured and synchronized to a server through an internet connection. By the fourth and final version, all books and quizzes were available offline, and student progress was saved locally on the tablet with an option on the platform that allowed for student-progress data to be manually synchronized with the server. During these version updates, student progress data were lost, thus limiting the ability of the Qysas project to track usage data during the first year of implementation.

Given the limited access to ICT—including computers and the internet—in Jordanian public schools, LTM leveraged the existing resources available in JEI Discovery Schools. LTM expected the JEI Discovery Schools to have the technical infrastructure necessary for the project's implementation. However, after the pool of potential implementation schools was identified, LTM realized that the computer labs in the majority of the JEI Discovery Schools did not have fully functioning computers; to run the Qysas platform, the computers would require software upgrades and memory increases. To mitigate this challenge, LTM secured external funding from the Abdul Hameed Shoman Foundation and Itihad Bank, which allowed the Qysas project to provide 250 tablets to intervention schools.

## Implementation

The first year of implementation was challenging, although it was evident that the project had the potential to be improved. As a result, LTM received an extension through the 2016–17 academic year. The details below cover both years of implementation.

10 The Arab Thought Foundation is an international nongovernment organization which's mission is to advance Arab-cultural solidarity and promote Arab-world progress with openness to world cultures. The Arabi 21 project works to create a future in which any Arab citizen could acquire education throughout his or her life. The project launched the Arabi 21 Standards to Classify Arab Children's Literature Books, which have been adopted by publishers, governmental, and non-governmental organizations to help teachers build classroom libraries with level-appropriate books. See http://arabthought.org/en#.WZHNmlGGM2w for more details.

In October 2015, LTM conducted training for intervention school teachers and JEI interns who helped oversee the implementation of the project in the 2015–16 academic year. LTM provided an overview of the project, demonstrated the Qysas platform and user manual, and suggested a weekly implementation schedule for literacy groups. JEI also provided a follow-up session for ten principals to emphasize the project's intended outcomes and encourage engagement from school leadership with the project.

The Qysas project was rolled out in JEI schools after the teacher and intern training. The project team—particularly INTEGRATED—provided significant monitoring support to schools observing progress and tracking challenges faced by teachers, interns, and students. One of the first challenges noted by the project team was inconsistent start-dates; although LTM distributed tablets to JEI during the last week of October, some schools launched literacy group sessions in November, while others did not start until December.

During the first year of implementation, the Qysas project team also noted a number of technology-related challenges. These included poor battery charge on the tablets, platform bugs, difficulty retrieving usage data, tangled headphones, broken tablets, and poor internet connections. To remedy these issues, LTM built charging stations in each classroom to ease the burden on teachers and JEI interns to locate sufficient electrical outlets. LTM released several updates to the Qysas platform to resolve programming bugs and reconcile the problems faced in downloading usage data. They provided covers for the tablets and replaced damaged headphones. To stabilize internet connections, routers provided by Umniah Telecom were installed in each school; this also led to faster internet access and improved user experience on the Qysas platform. Furthermore, LTM tasked JEI interns with the management of the tablets—ensuring the devices were charged, the platform was connected to the server, and the usage data were properly tracked—which allowed teachers to focus on providing the literacy group sessions to students.

Although these technical fixes were issued as quickly as possible by the Qysas project team, the initial challenges impeded the project from being implemented as intended during the 2015–16 academic year. Luckily, these issues were mostly resolved and therefore did not significantly impact the implementation of the Qysas project during the 2016–17 academic year. The Qysas project management did note that, in the 2016–17 academic year, when JEI interns no longer supported the project, the responsibility of ensuring tablets were charged and functioning fell to teachers, who did not always do so. Feedback from teachers indicated that they were concerned about being held responsible for the safety and security of the tablets throughout the project. Some noted that charging and storing the tablets was a burdensome daily task.

The Qysas project also faced implementation challenges unrelated to the project technology. During the 2015–16 academic year, teachers were instructed to hold literacy group sessions after school and given a small stipend to cover the additional time they spent at work. The number of literacy group sessions offered by teachers during the first year was lower than originally targeted, and student attendance was often low. For some schools, literacy group sessions were held in the library, but, when the space was occupied for other purposes, teachers were unable to find a substitute location and canceled the sessions. Also, because the sessions were held after school, teachers would often cancel sessions because of more pressing work tasks or because students were tired. Although teachers often intended to make up the session, this did not always occur. Another challenge related to holding the literacy group sessions after school was the additional time required of other school personnel. Specifically, school security guards were required to stay later to accommodate the after-school sessions, though LTM did not have resources available to provide them with additional pay. In the second year of implementation, LTM instructed teachers to hold sessions whenever was most convenient for them during the school day, including during class. This flexibility appears to have improved the number of literacy group sessions held by teachers, as well as student attendance.

During EOP interviews, a majority of teachers, parents, and students indicated that they were satisfied with the overall implementation of the project. Project staff mentioned that, to improve upon the Qysas platform, incorporating games and activities to teach phonics on the platform would be beneficial, as would embedding a time restriction within the e-books to ensure that students were not advancing through the text without reading. Teachers reported that students became increasingly engaged and motivated to read throughout the project because the e-book content was often more interesting than the school's reading materials. Several teachers mentioned that the Qysas platform would be a good way to support struggling readers and recommended that, in the future, the platform be made available as a way to boost struggling readers' exposure and practice with self-paced, individualized books.

## Management

The Qysas project benefited from the support and expertise of several organizations. LTM, a company with capabilities in educational apps and web-content design, partnered with INTEGRATED, an organization with a strong background in monitoring and evaluation (M&E), to implement the Qysas project. From the beginning of the project, divisions of labor were well established: LTM was responsible for the development of the Qysas platform, managing the tablets, and providing technical support throughout implementation; INTEGRATED was responsible for monitoring student progress and ensuring fidelity of implementation (FOI) through the platform's built-in assessments, usage data, and M&E and FOI data collection. The Qysas project team delegated capturing attendance data to JEI teachers and interns.

The Qysas project team quickly learned that the project required more implementation monitoring than originally anticipated. LTM conducted routine visits to the schools to provide technical assistance on the platform and tablets. Similarly, INTEGRATED dedicated significant time and resources throughout the project, to visit schools and provide support to teachers as well as to capture M&E data. Additionally, INTEGRATED hired two full-time M&E staff members for the 2016–17 academic year to oversee project implementation and collect data.

Overall, the strong working relationship and understanding of roles and responsibilities between LTM and INTEGRATED facilitated the management of the Qysas project throughout the development and implementation challenges.

## Fidelity of Implementation

By definition, FOI is the accurate and consistent application of an agreed-upon procedure. FOI research is used to assess the degree to which a project is implemented as intended. Measuring FOI helps implementers and researchers understand and differentiate between what was supposed to happen and what actually happened during the life of a project. When FOI is high and an intervention group experiences gains, then it is possible to associate gains with the intervention; this, in turn, makes it possible to recommend scaling the intervention. FOI research also makes it possible to identify which components of an intervention are most strongly associated with outcomes. When FOI is low and gains are low, it is impossible to know whether the reason for low gains is a poor design or poor implementation. FOI research can be coupled with M&E to provide feedback to implementers during the project cycle to improve adherence to project design, in the case of low FOI.[11]

11 Creative Associates International, Inc. (2015). Fidelity of Implementation (FOI) how-to guide (unpublished). Washington, D.C.: USAID.

As part of their projects, all ACR GCD Round 2 grantees conducted FOI research during the implementation period. The primary objectives of FOI research for grantees were to

1. Understand what FOI research is and why it is important throughout the life of the project
2. Identify essential components, activities, and questions for each phase of project implementation
3. Create relevant, project-specific FOI tools to monitor participant adherence to the intervention plan

STS held a series of FOI meetings with each ACR GCD grantee to develop project-specific FOI tools and an implementation plan for FOI research. After finishing the FOI sessions, ACR GCD grantees were expected to pilot test their FOI tools and collect data. Grantees were advised to collect a minimum of one round of FOI data; two or more rounds of data collection were ideal. The data collected served several purposes:

1. To indicate where revisions in data collection tools were necessary
2. To highlight where improvements in implementation were needed
3. To attribute impact when combined with assessment data

The Qysas project team participated in a series of FOI calls in April and August 2016, developed FOI tools, and collected one round of FOI data using the tools during the last two weeks of December 2016. Furthermore, INTEGRATED collected student attendance data from teachers and user data from the Qysas platform. Results were used to identify challenges and improve implementation; select data were used in correlational analysis with EGRA scores (see Key Factors for Success). Select FOI findings from December 2016, as presented by LTM, are included below.

Table 4 shows responses to students' preference of reading material mechanism. Overall, more than half (55.8 percent) of students preferred using the Qysas platform to read, compared with nearly one quarter (24.7 percent) who preferred print books. A slightly higher percentage of boys said they preferred the platform than girls (60.0 percent and 53.8 percent, respectively).

Table 4: **Student Reading Material Mechanism Preference by Gender**[12]

| Responses | Girls (Percentage of Total) | Boys (Percentage of Total) | All Students (Percentage of Total) |
|---|---|---|---|
| Platform | 28 (53.8%) | 15 (60.0%) | 43 (55.8%) |
| Print Book | 14 (26.9%) | 5 (20.0%) | 19 (24.7%) |
| Both | 10 (19.2%) | 5 (20.0%) | 15 (19.5%) |
| Total | 52 (100.0%) | 25 (100.0%) | 77 (100.0%) |

Results in Table 5 indicate that a majority (59.7 percent) of students, regardless of gender, found the platform "somewhat easy" to use. Less than 2.0 percent of students thought the platform was hard to use.

12 Due to rounding, total percentages may not equal 100.0.

Table 5: **Ease of Platform Use by Gender**

| Responses | Girls (Percentage of Total) | Boys (Percentage of Total) | All Students (Percentage of Total) |
|---|---|---|---|
| Somewhat Easy | 27 (51.9%) | 19 (76.0%) | 46 (59.7%) |
| Very Easy | 24 (46.2%) | 6 (24.0%) | 30 (39.0%) |
| Hard | 1 (1.9%) | 0 (0.0%) | 1 (1.3%) |
| Total | 52 (100.0%) | 25 (100.0%) | 77 (100.0%) |

Table 6 shows responses from students rating their teacher's engagement and support during the literacy group sessions. Overall, most students (79.2 percent) felt their teacher was highly engaged in the sessions. A slightly smaller percentage of girls (75.0 percent) responded this way, and about 5.8 percent of girls said their teacher was not engaged during the sessions.

Table 6: **Students' Rating of Teacher Engagement During Sessions**

| Responses | Girls (Percentage of Total) | Boys (Percentage of Total) | All Students (Percentage of Total) |
|---|---|---|---|
| Highly Engaged | 39 (75.0%) | 22 (88.0%) | 61 (79.2%) |
| Moderately Engaged | 10 (19.2%) | 3 (12.0%) | 13 (16.9%) |
| Not Engaged | 3 (5.8%) | 0 (0.0%) | 3 (3.9%) |
| Total | 52 (100.0%) | 25 (100.0%) | 77 (100.0%) |

# VI. EGRA Data Analysis

EGRA data were analyzed using Microsoft Excel and IBM SPSS Statistics. Only data from students who participated in the EGRA at both baseline and endline were used. EGRA subtask results were matched by student and compared by time period to calculate reading gains over the life of the project.[13] Gain scores were computed as the difference between endline and baseline for each subtask. Student reading performance was calculated by comparing gain scores for students in the intervention group to gain scores for students in the comparison group. Zero scores[14] were also calculated for all subtasks. Differences in gain scores between the intervention and comparison groups were tested for statistical significance using independent sample t-test analysis,[15] and differences in the percentage of zero scores were tested for significance using chi-square test.[16] Results with statistically significant differences are reported throughout with an asterisk. Where results are not statistically significant, it is not possible to assume that there is any difference between the results of students in the intervention and comparison groups.

13 Because of rounding, mean changes reported may not always equal endline value minus baseline value.

14 Students receive a zero score if they are unable to correctly identify a single item on a subtask. In this report, zero scores are shown as the number of students or as the percentage of the total students who were unable to identify correctly a single item on a subtask.

15 The independent-sample t-tests compare the difference between the means of two independent groups on the same dependent variable.

16 The chi-square test is a statistical test comparing proportion of students with zero scores that were observed in the data against what was expected.

For each subtask, decision rules were applied to assess whether outliers would need to be removed. For example, if the time remaining for a timed subtask resulted in a fluency rate that was outside a reasonable range, then that student's fluency rate was not included in the analyses. Reasonable ranges for the time remaining were based on multiple factors, including the rate at which letters or words in the language tested are typically read, the distribution or relative performance of students in the sample, and the mean fluency rate with and without the outlier data point(s). After consideration of the reasonable ranges in the data, no outliers were removed.

Table 7 provides details on the EGRA subtasks, including how results were calculated.

Table 7: **EGRA Subtask and Data Analysis Method**

| Subtask | Type | Analysis |
|---|---|---|
| Letter sound identification | Timed | Letter sound identification is measured as the number of correct letter sounds read in one minute (CLSPM). Letter sound identification is a measure of alphabet knowledge. Each student had the opportunity to read up to 100 upper- and lower-case letters. |
| Syllable identification | Timed | Syllable identification is measured as correct syllable sounds read in one minute (CSSPM). Syllable identification is a measure of knowledge of the sounds of letter combinations and is a more advanced predictor of decoding ability. Each student had the opportunity to read up to 100 syllable sounds. |
| Non-word reading | Timed | Nonword reading is measured as the number of correct "nonwords" read in one minute (CNWPM). Nonword reading measures decoding. Each student had the opportunity to read up to 50 one- or two- syllable nonwords. |
| Oral reading fluency | Timed | ORF is measured as correct words read in one minute (CWPM). ORF is a decoding and reading fluency measure. Each student had the opportunity to read 52 words in one minute. The ORF passage formed the textual basis for the reading comprehension subtask. |
| Reading comprehension | Untimed | Reading comprehension is measured as the number of correct answers verbally delivered to the assessor based on questions asked about the passage read as part of the ORF subtask. Each student had the opportunity to answer up to five questions. |
| Listening comprehension | Untimed | Listening comprehension is measured as the number of correct answers verbally delivered to the assessor. Listening comprehension is a measure of vocabulary. Each student had the opportunity to answer five questions based on a passage read aloud by the assessor. |

## Considerations

### Sample Selection for the 2016–17 Academic Year Cohort

In the second year of implementation, student selection was dependent on teachers' willingness to participate, the number of students to whom teachers agreed to provide literacy group sessions, and school principals' purposive selection of Grade 2 classes that could participate in the project. As a result, the number of students who participated in each school was not equal, limiting the ability of comparisons of participating students across schools. Further, because LTM relied on the willingness of school principals and teachers to participate—

as opposed to random assignment—there are internal- and external-validity threats implicit in the research design. Results should not be generalized beyond the sample of participating students to the school level or larger student populations in JEI schools.

### Contamination from USAID's Early Grade Reading and Math Project

When selecting JEI Discovery Schools to incorporate into the Qysas project for intervention and comparison groups, LTM required that none of the schools should have received a literacy intervention in the previous academic year. The LTM team also anticipated that no literacy interventions would be implemented concurrently with the Qysas project. However, in 2015, RTI began implementing the USAID Early Grade Reading and Math Project (RAMP) project, which was rolled out to all project schools—intervention and comparison—during the 2016–17 academic year.[17] The USAID RAMP project aims to improve reading and mathematics teaching and learning methodologies for greater learning outcomes in kindergarten through Grade 3 throughout public schools in Jordan. All teachers who were part of the Qysas project received inputs from USAID RAMP during the 2016–17 academic year, primarily in the form of teacher training and support. As teachers in intervention and comparison groups received the same intervention, it is still possible to attribute the reading gains found in this research to the Qysas project, though it should be noted that findings may be conflated with impacts from USAID RAMP.

## VII. EGRA Results

This section presents EGRA results to answer the following research question posed by the Qysas project: *Have the literacy skills of students who participated in the Qysas project—intervention group students—improved relative to the literacy skills of students who did not have access to the project—comparison group students?* The following section presents the results of the EGRA results by subtask and gender.

Overall, as Figures 2 and 3 indicate, all students showed improvements in their literacy skills during the academic year regardless of their participation in the project. However, students in the intervention group showed statistically significantly greater gains than students in the comparison group on three subtasks: syllable identification, ORF, and reading comprehension. Additionally, students participating in the Qysas project had a significantly lower proportion of zero scores at endline than did their peers in the comparison group on two subtasks: ORF and reading comprehension. The proportion of students in the intervention and comparison group who received zero scores at endline was comparable on other subtasks.

17 United States Agency for International Development. (2017, May 26). *Early Grade Reading and Mathematics Project (RAMP).* Retrieved from https://www.usaid.gov/jordan/fact-sheets/early-grade-reading-and-mathematics-project-ramp

Figure 2: **Mean Results by EGRA Subtask and Group at Baseline and Endline**[18]

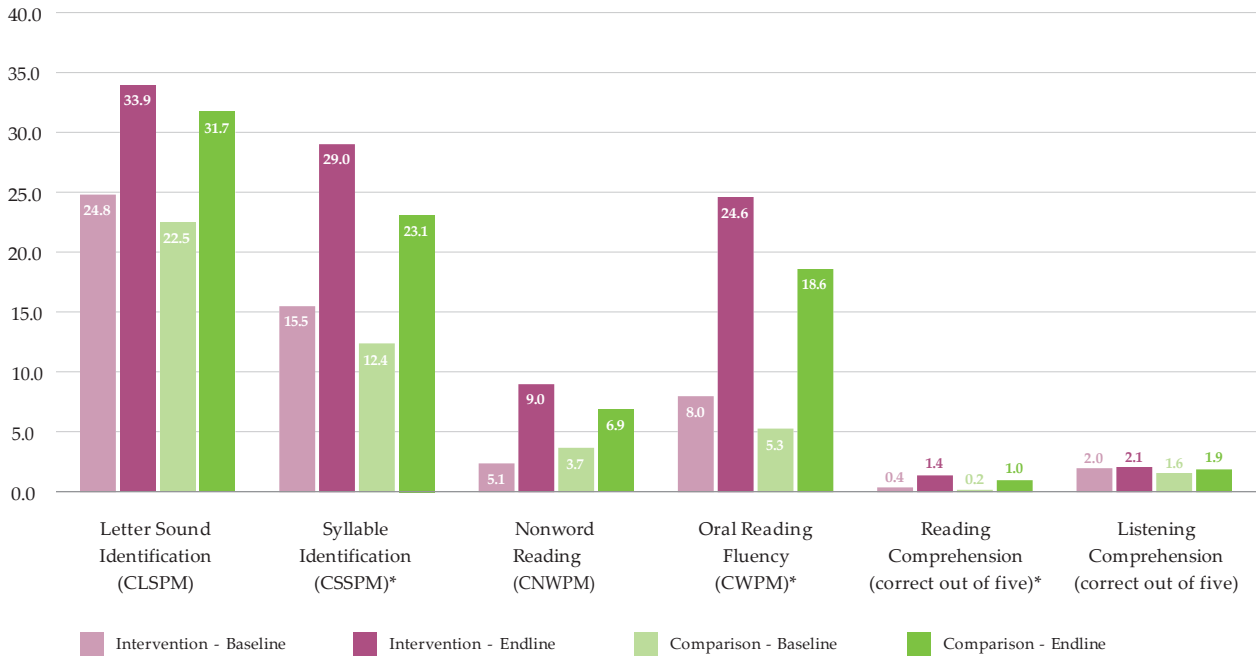
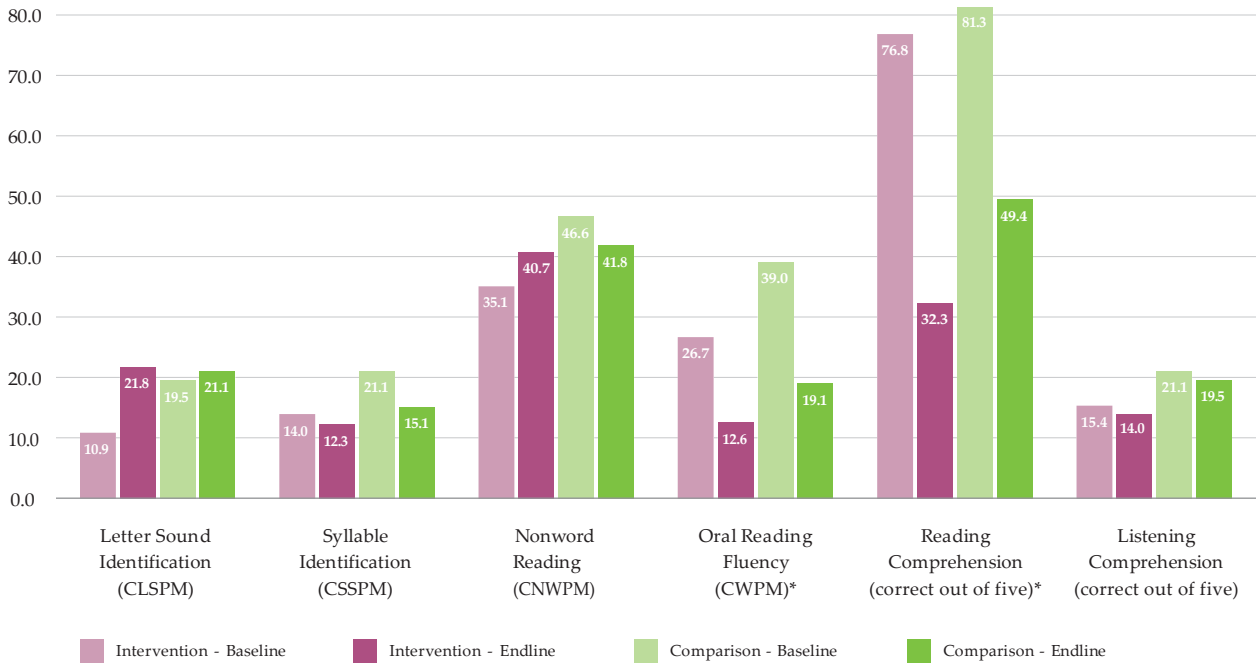



Figure 3: **Percentage of Students Receiving Zero Scores by EGRA Subtask and Group at Baseline and Endline (%)**[19]




18 An asterisk (*) indicates the gain score for the intervention group was significantly higher than the gain score for the comparison group at p<0.05. *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

19 An asterisk (*) indicates the proportion of student receiving zero scores in the intervention group was significantly lower t han the proportion of students receiving zero scores in the comparison group at endline at p<0.05. *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

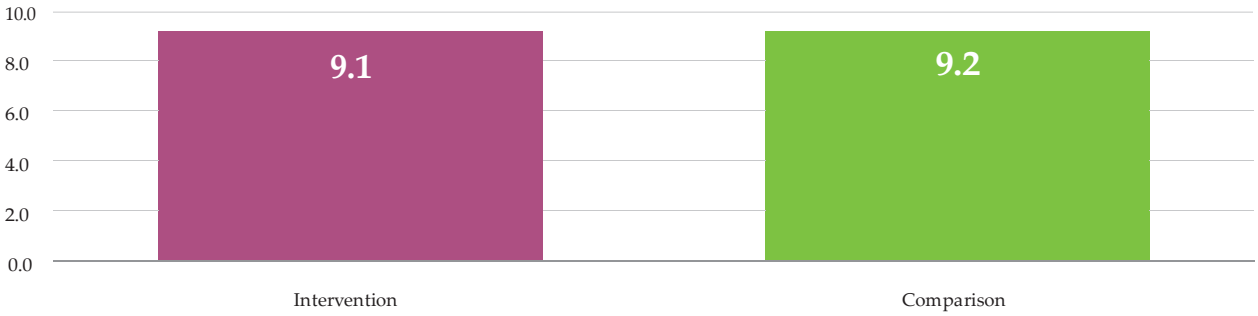
## EGRA Results by Subtask

### Letter Sound Identification

The letter sound identification subtask measures students' understanding of the alphabetic principle, which states that each letter of the alphabet corresponds to a specific sound. To demonstrate letter sound identification, students must identify the appropriate sounds for each letter. The ability to match letters with correct sounds is critical to reading fluency and comprehension. For this subtask, each student was presented with a stimulus of 100 letters and asked to read aloud as many of the sounds as he or she could in one minute.[20] Results for this subtask are reported as CLSPM.

Average gain scores for the letter sound identification subtask are presented in Figure 4. On average, students in both groups increased their letter sound fluency at comparable rates from baseline to endline; there was no statistically significant difference between the gain scores of intervention group students and those of comparison group students.

Figure 4: **Average Gain Scores by Group—Letter Sound Identification (CLSPM)**[21]




The percentage of students receiving zero scores on the letter sound identification subtask at endline is presented in Figure 5. The percentage of zero scores at endline in the two groups was not statistically significantly different, meaning that the proportions of intervention and comparison group students receiving zero scores at endline were comparable.

Figure 5: **Percentage of Students Receiving Zero Scores by Group at Endline—Letter Sound Identification (%)**[22]


20 There is an auto stop rule in all of the timed EGRA subtasks. In this case, the test was discontinued if a student was unable to correctly name any the first ten letters on the stimulus.

21 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

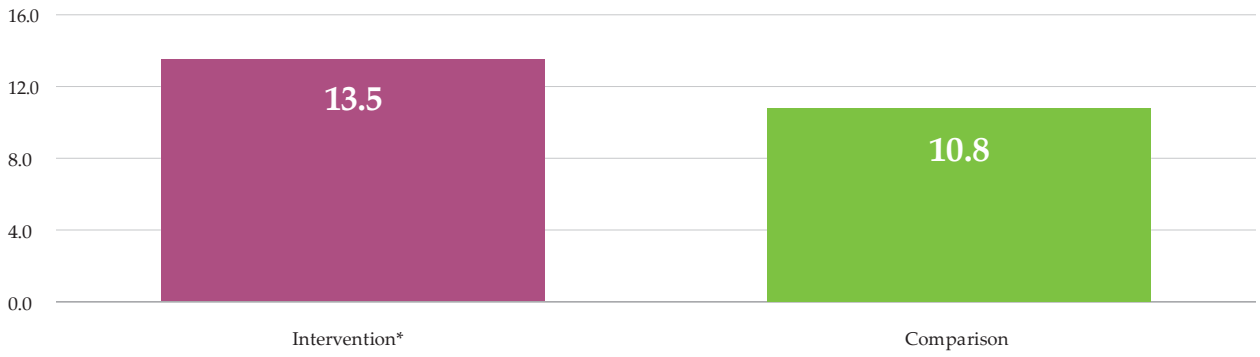
22 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

## Syllable Identification

The syllable identification subtask measures students' understanding of how letter combinations correspond to specific sounds. To demonstrate syllable identification, students must vocalize the appropriate sounds for each syllable. The ability to match letters with correct sounds is critical to reading fluency and comprehension. For this subtask, each student was presented with a stimulus of 100 syllables and asked to read as many of the sounds as he or she could in one minute. Results for this subtask are reported as CSSPM.

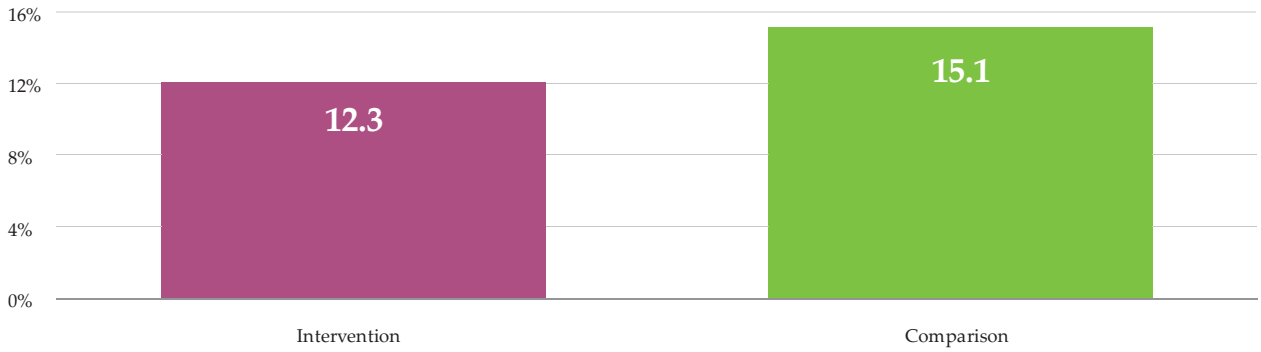
Average gain scores for the syllable identification subtask are presented in Figure 6. On average, students in both groups increased their syllable reading fluency rates from baseline to endline. The gains of students in the intervention group were statistically significantly greater than were the gains of students in the comparison group. Specifically, students in the intervention group were able to read, on average, an additional 13.5 CSSPM at endline than at baseline, in contrast to students in the comparison group, who read an additional 10.8 CSSPM at endline.

Figure 6: **Average Gain Scores by Group—Syllable Identification (CSSPM)**[23]




The percentage of students receiving zero scores on the syllable identification subtask at endline is presented in Figure 7. The percentage of zero scores at endline for the two groups was not statistically significantly different, meaning that the proportion of intervention and comparison group students who received zero scores at endline was comparable.

Figure 7: **Percentage of Students Receiving Zero Scores by Group at Endline—Syllable Identification (%)**[24]




23 An asterisk (*) indicates the average gain score for the intervention group was significantly higher than the average gain score for the comparison group at $p<0.05$. *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

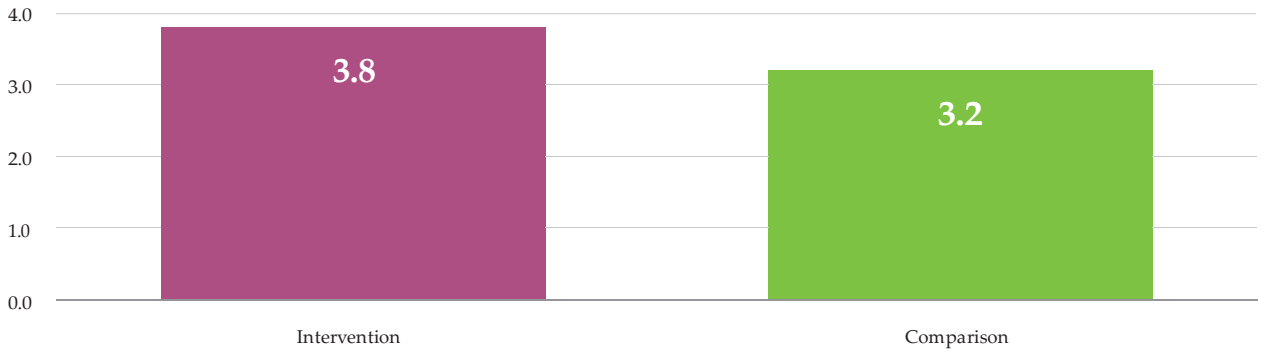
24 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

## Nonword Reading

The nonword reading subtask measures students' decoding ability by presenting them with words that they would not be able to recognize due to familiarity. Many students in the early grades learn to memorize or recognize a range of familiar words. Thus, to assess their decoding skills, students are presented with invented or nonsense words that require them to sound out each letter and syllable to decode a word. During this timed subtask, the assessor presented each student with 50 nonwords and asked him or her to read as many as possible in one minute. Results for this subtask are reported as CNWPM.

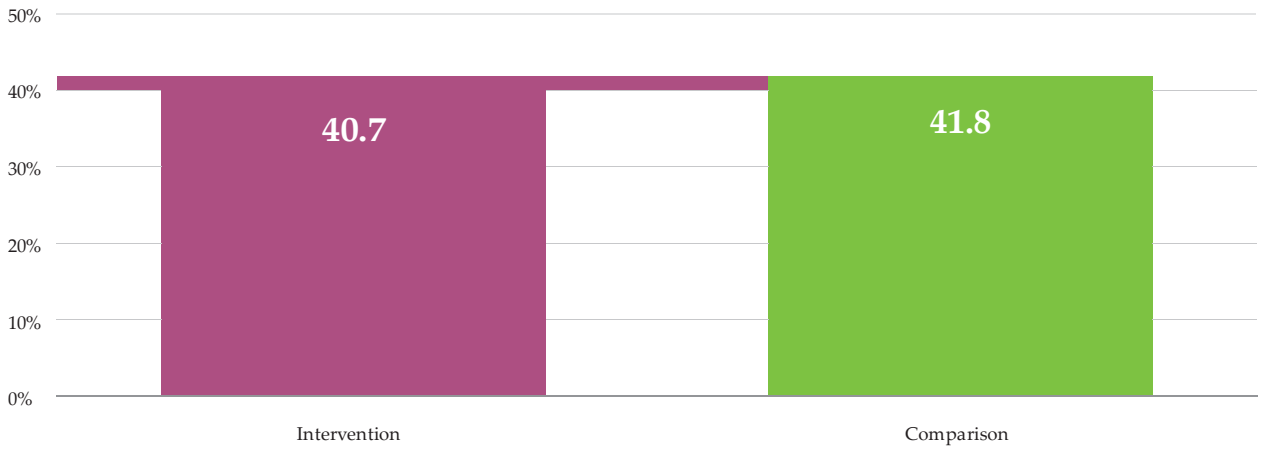
Average gain scores for the nonword reading subtask are presented in Figure 8. On average, nonword reading fluency increased at a comparable level from baseline to endline for students in both groups. There was no statistically significant difference between the gain scores of intervention students and comparison students.

Figure 8: **Average Gain Scores by Group—Nonword Reading (CNWPM)**[25]




The percentage of students receiving zero scores on the nonword reading subtask at endline is presented in Figure 9. The proportions of zero scores at endline in the two groups were not statistically significantly different, meaning that the proportions of intervention and comparison students who received zero scores at endline were comparable.

Figure 9: **Percentage of Students Receiving Zero Scores by Group at Endline—Nonword Reading (%)**[26]




25 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

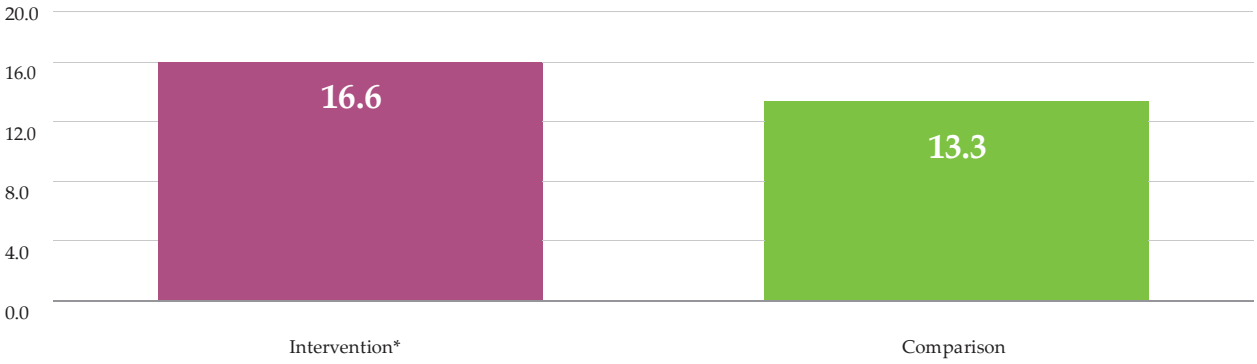
26 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

## Oral Reading Fluency

The ORF subtask measures students' overall reading competence. It is the culmination of translating letters into sounds, merging sounds to become words, linking words to become sentences, relating the text to meaning, and making inferences to fill in missing information. A student's ORF score is dependent on the skills assessed in previous subtasks, since students need to have some mastery of letter sounds and decoding to read fluently. Students had the opportunity to read up to 52 words in the ORF passage. Results for this subtask are reported as CWPM.

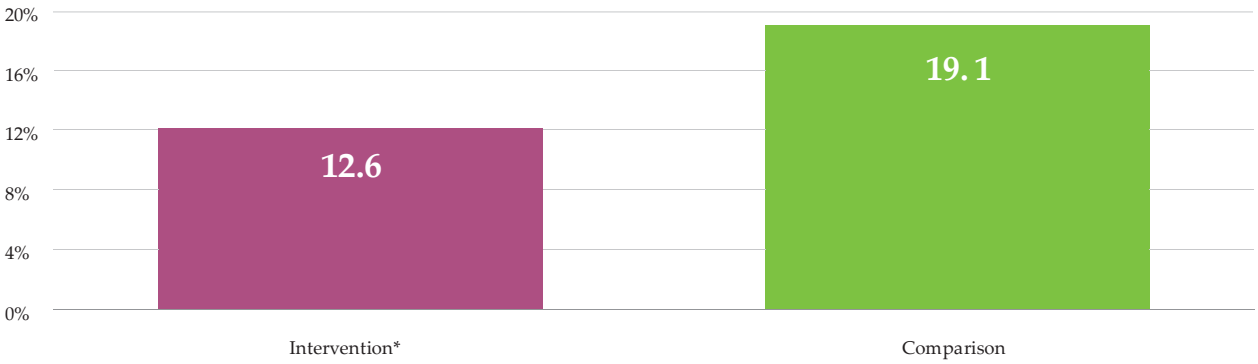
Average gain scores for the ORF subtask are presented in Figure 10. On average, ORF rates increased from baseline to endline for students in both groups, though the gains made by students in the intervention group were statistically significantly greater than the gains made by students in the comparison group. Specifically, students in the intervention group were able to read, on average, an additional 16.6 CWPM at endline than at baseline; by contrast, students in the comparison group read, on average, an additional 13.3 CWPM.

Figure 10: **Average Gain Scores by Group—ORF (CWPM)**[27]




The percentage of students who received zero scores on the ORF subtask at endline is presented in Figure 11. Overall, the percentage of students in the intervention group who received zero scores at endline was statistically significantly lower than the percentage of students in the comparison group who received zero scores. Specifically, 12.6 percent of students in the intervention group received zero scores at endline, while 19.1 percent of students in the comparison group received zero scores.

Figure 11: **Percentage of Students Receiving Zero Scores by Group at Endline—ORF (%)**[28]




27 An asterisk (*) indicates the average gain score for the intervention group was statistically significantly greater than the average gain score for the comparison group at p<0.05. *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

28 An asterisk (*) indicates the proportion of student receiving zero score in the intervention group was significantly lower th an the proportion of students receiving zero scores in the comparison group at endline at p<0.05. *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

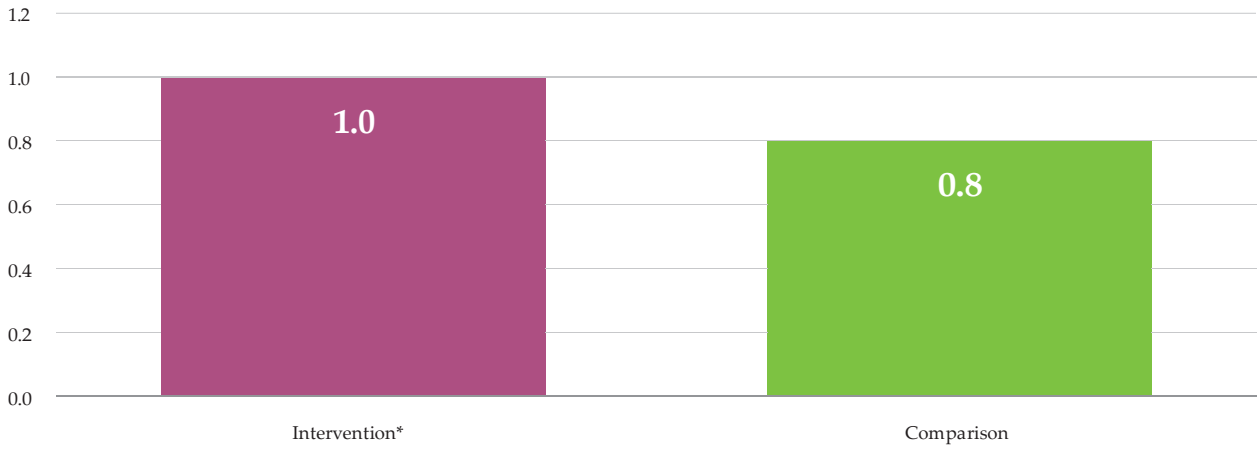
## Reading Comprehension

Comprehension is the purpose of reading. Once a student learns the sound-letter relationship and is able to decode and read with automaticity, he or she becomes increasingly able to understand the meaning of a text. The reading comprehension subtask assesses that ability.

For the reading comprehension subtask, the assessor removed the story used in the ORF subtask and then asked each student up to five comprehension questions based on what he or she had read. The number of questions asked depended on how many words each student read on the ORF subtask. For instance, if a student read just the first ten words, he or she would be asked only the first comprehension question. Similarly, if a student read all words on the ORF subtask, he or she would be asked all five questions. Students who received a zero score on the ORF subtask also received a zero score on the reading comprehension subtask because no questions were presented to them. Additionally, any student who could not correctly answer a single reading comprehension question received a zero score on the subtask. Results for this subtask are reported as the number of questions answered correctly out of five.

Average gain scores for the reading comprehension subtask are presented in Figure 12. On average, reading comprehension scores increased from baseline to endline for students in both groups, though the gains of students in the intervention group were statistically significantly greater than the gains of students in the comparison group. Specifically, students in the intervention group were able to answer correctly, on average, 1.0 additional question at endline than at baseline, compared to 0.8 additional correct answers by students in the comparison group.

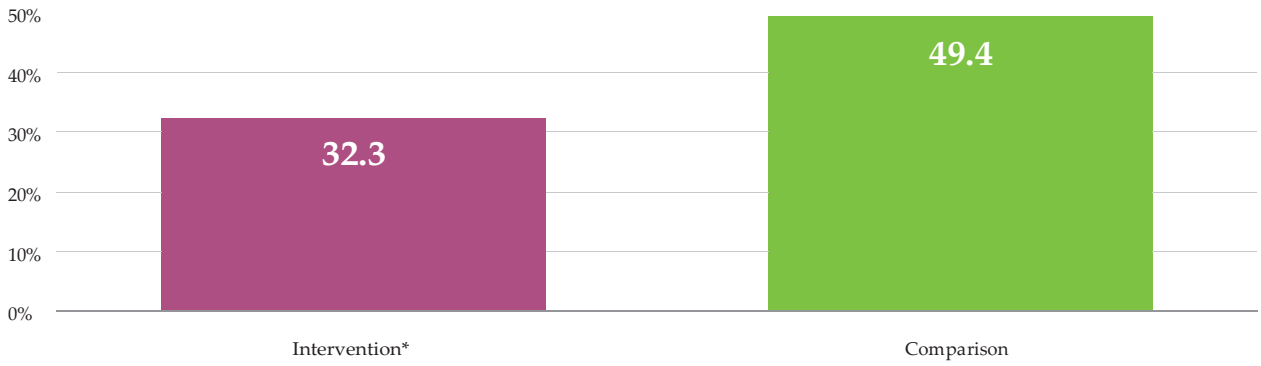
Figure 12: **Average Gain Scores by Group—Reading Comprehension (correct out of five)**[29]




The percentage of students who received zero scores on the reading comprehension subtask at endline is presented in Figure 13. Overall, the percentage of students in the intervention group who received zero scores at endline was statistically significantly lower than the percentage of students in the comparison group who received zero scores. Specifically, 32.3 percent of students in the intervention group received zero scores at endline, while 49.4 percent of students in the comparison group received zero scores.

29 An asterisk (*) indicates the average gain score for the intervention group was significantly higher than the average gain score for the comparison group at $p<0.05$. *N* sizes: Intervention Group $n=285$; Comparison Group $n=251$.

Figure 13: **Percentage of Students Receiving Zero Scores by Group at Endline–Reading Comprehension (%)**[30]

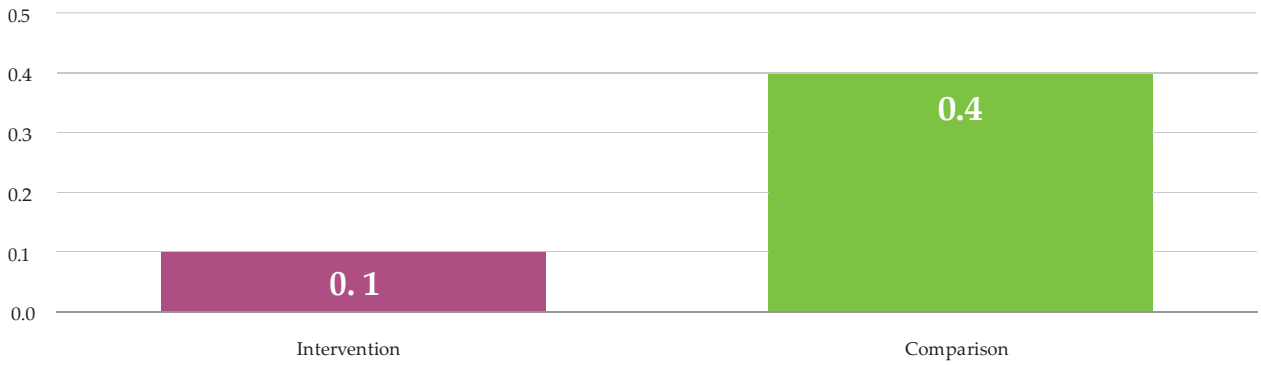



## Listening Comprehension

The untimed listening comprehension subtask measures students' ability to comprehend the meaning of a story read to them orally. Students do not need to know how to read to answer listening comprehension questions. As a result, this subtask is an important measure of students' pre-reading abilities because it helps detect obstacles to learning to read, such as limited language proficiency, auditory problems, attention deficit, or other difficulties. In the listening comprehension subtask, the assessor reads a short passage to the student and asks him or her to answer comprehension questions based on what he or she heard. Results for this subtask are presented as the number of questions answered correctly out of five.

Average gain scores for the listening comprehension subtask are presented in Figure 14. On average, students' scores on the listening comprehension subtask increased from baseline to endline at a comparable level. There was no statistically significant difference between the gain scores of intervention group students and comparison group students.

Figure 14: **Average Gain Scores by Group—Listening Comprehension (correct out of five)**[31]

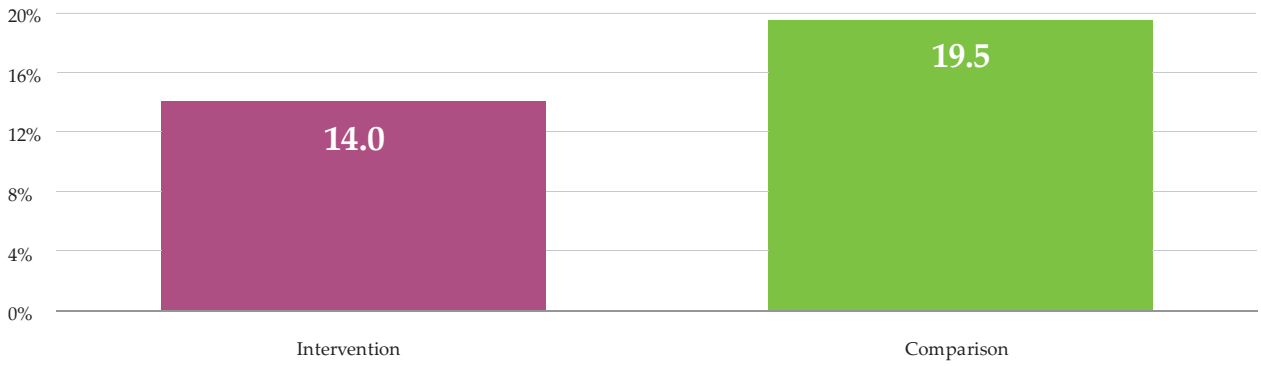



The percentage of students receiving zero scores on the listening comprehension subtask at endline is presented in Figure 15. The percentage of zero scores at endline in the two groups was not significantly different, meaning that the proportions of intervention group and comparison group students who received zero scores at endline were comparable.

30 An asterisk (*) indicates the proportion of student receiving zero scores in the intervention group was significantly lower than the proportion of students receiving zero scores in the comparison group at endline at $p<0.05$. *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

31 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

Figure 15: **Percentage of Students Receiving Zero Scores by Group at Endline—Listening Comprehension (%)**[32]



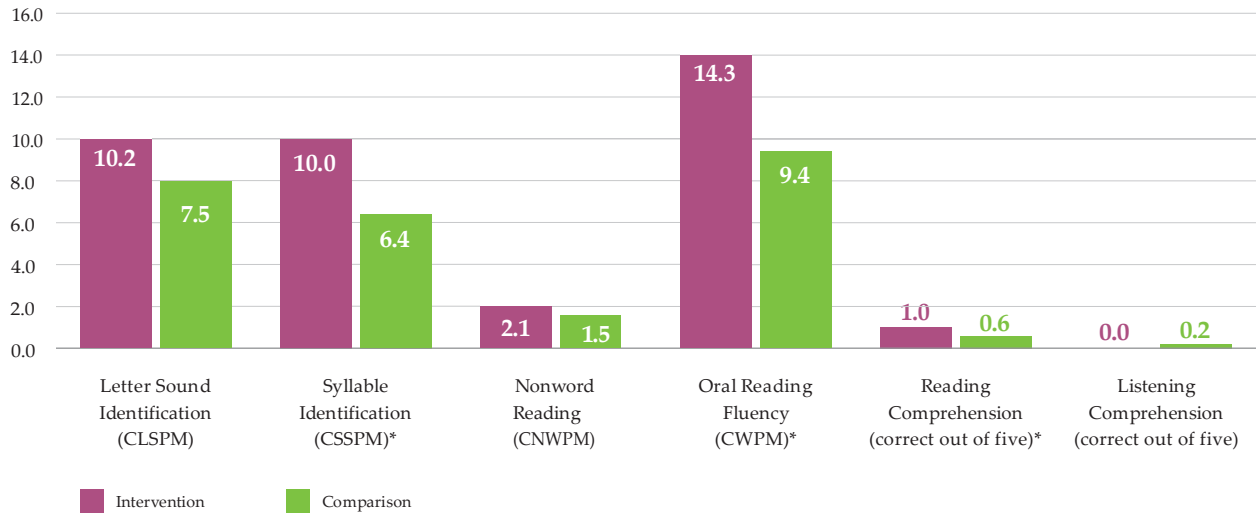

## EGRA Results by Gender

Students' gain scores and proportion of zero scores were analyzed to examine whether girls and boys who participated in the Qysas project performed differently on the EGRA compared to students of the same gender who did not participate in the project. This section specifically answers the research question: *How have the literacy skills of girls and boys who participated in the Qysas project changed relative to the literacy skills of students of the same gender who did not have access to the project?*

As indicated in Table 1, 207 girls and 329 boys completed the baseline and endline EGRAs. Gain scores for girls and boys are presented first, followed by zero scores for girls and boys (see Annex Table D.7 for detailed results).

Although girls and boys in both intervention and comparison groups made gains from baseline to endline, girls in the intervention group made statistically significantly greater gains than girls in the comparison group on three subtasks: syllable identification, ORF, and reading comprehension (Figure 16). Notably, boys in the intervention and comparison groups had comparable gains; there was no statistically significant difference in gains made by boys in the intervention group and boys in the comparison group on any subtask (Figure 17).

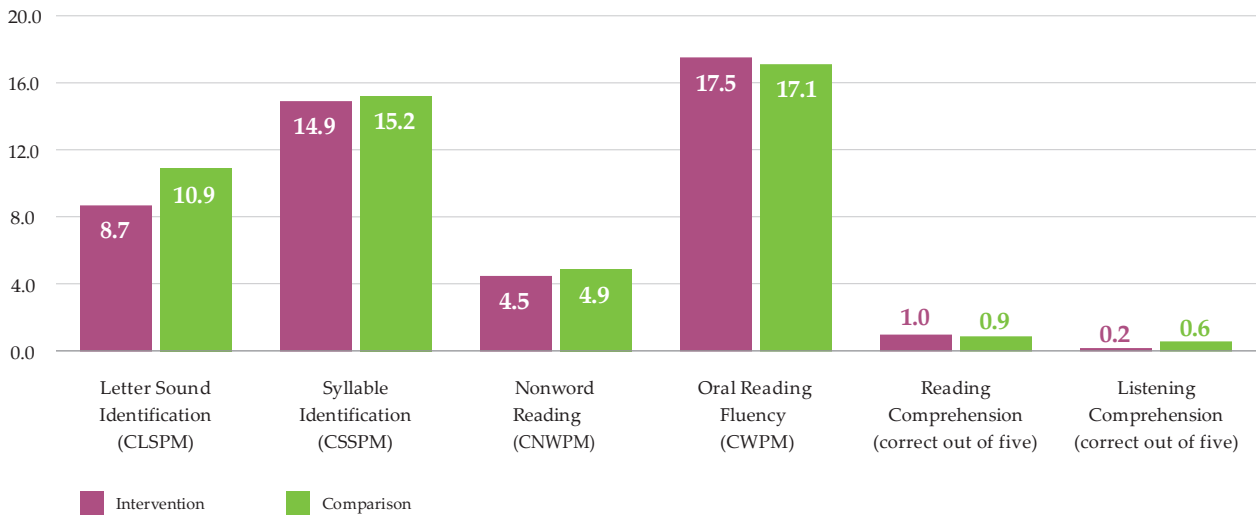
Figure 16: **Average Gain Scores by Subtask and Group—Girls**[33]




32 *N* sizes: Intervention Group *n*=285; Comparison Group *n*=251.

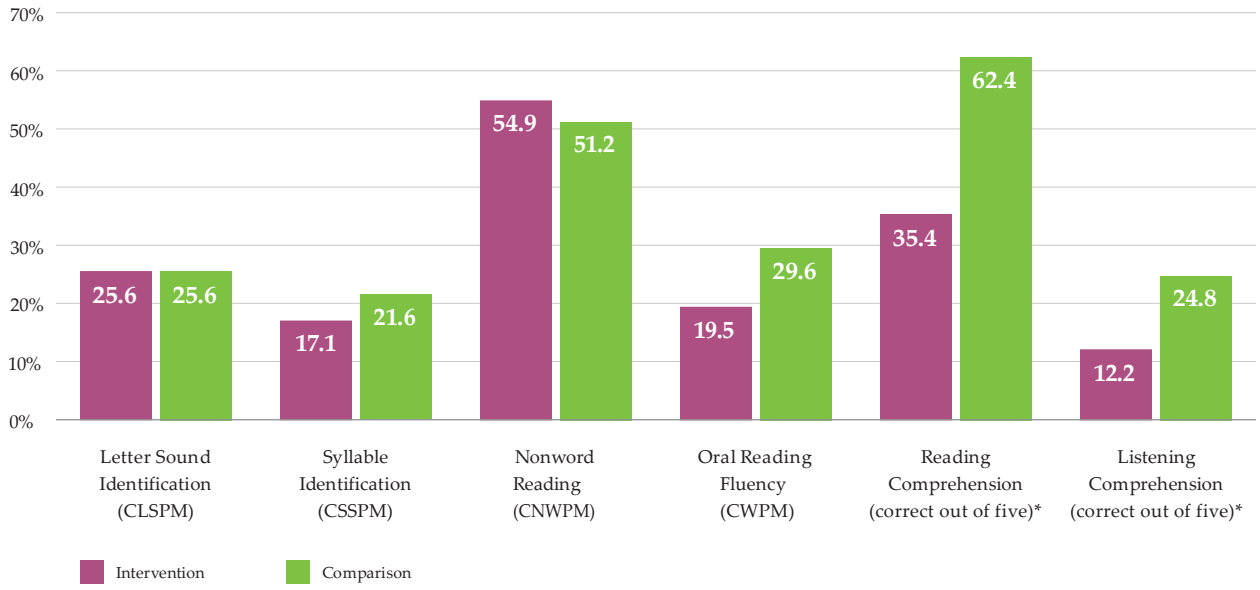
33 An asterisk (*) indicates the average gain score for the intervention group was significantly higher than the average gain score for the comparison group at p<0.05. *N* sizes for Girls: Intervention Group *n*=82; Comparison Group *n*=125.

Figure 17: **Average Gain Scores by Subtask and Group—Boys**[34]




The proportion of girls who received zero scores at endline is presented in Figure 18, and the proportion of boys who received zero scores at endline is presented in Figure 19. At endline, the proportion of girls in the intervention group who received zero scores was statistically significantly lower than the proportion of girls in the comparison group on two subtasks: reading comprehension and listening comprehension. The proportions of intervention and comparison girls who received zero scores on the other four subtasks were comparable (Figure 18). The proportion of boys who received zero scores was comparable across groups on all five subtasks (Figure 19).

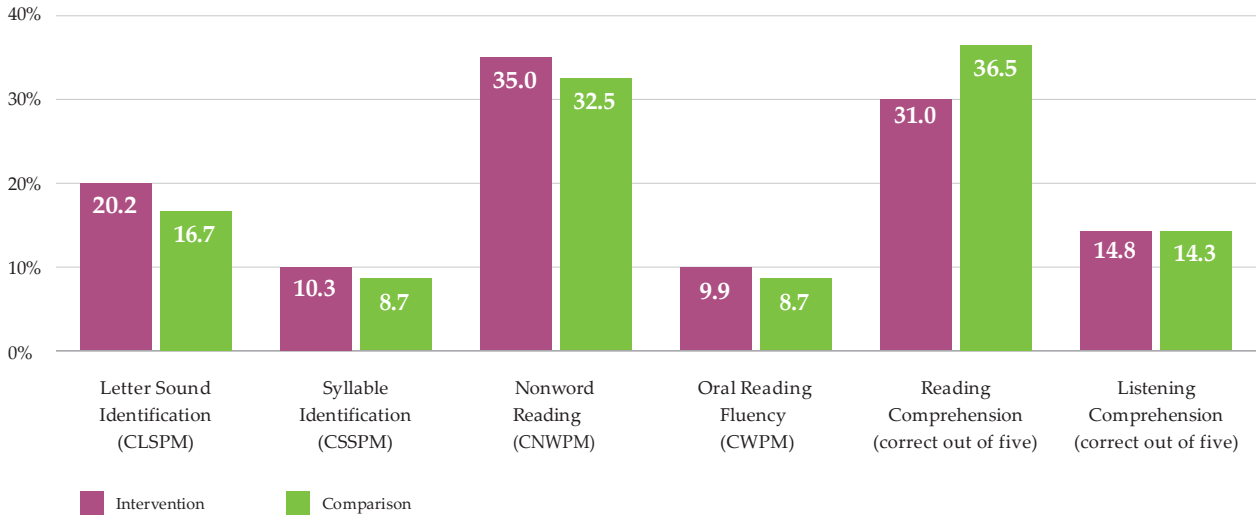
Figure 18: **Percentage of Students Receiving Zero Scores at Endline by Subtask and Group—Girls (%)**[35]




34 An asterisk (*) indicates the average gain score for the intervention group was significantly higher than the average gain score for the comparison group at $p<0.05$. *N* sizes for Boys: Intervention Group $n=203$; Comparison Group $n=126$.

35 An asterisk (*) indicates the proportion of girls receiving zero scores in the intervention group was significantly lower than the proportion of girls receiving zero scores in the comparison group at endline at $p<0.05$. *N* sizes: Intervention Group $n=82$; Comparison Group $n=125$.

Figure 19: **Percentage of Students Receiving Zero Scores at Endline by Subtask and Group—Boys (%)**[36]




# VIII. Key Factors for Success

Results in this section answer the ACR GCD supplemental question, *How did the project influence certain subsets of the student population more than others based on identifiable contextual factors?* Specifically, analysis was conducted to understand variations in students' performance based on their school and the amount of exposure and dosage of the Qysas project they received. Results are also presented from the student questionnaire.

## Project Exposure and Dosage

Overall, student participation in the Qysas project was similar across all ten intervention schools, although some variations were present. On average, across school type, teachers delivered 44 project library sessions during the academic year of implementation (Table 8). All-girls schools had a slightly higher average number of sessions than all-boys schools: 49 sessions compared with 42 sessions. Co-ed schools offered an average of 44 sessions during the academic year of implementation. Student absenteeism was low across schools. Generally, students missed few or no project literacy group sessions held by their teachers; on average, students attended 42 sessions. During these sessions, students averaged 1,907 minutes to access the content and activities on the Qysas platform.[37] At the end of the implementation period, students reached reading level 5 out of a maximum of 9 levels. Furthermore, students had read an average of 105 books on the Qysas platform during the academic year; this average was higher in all-girls schools than in all-boys schools (127 books versus 102 books, respectively), while the average in co-ed schools was 104 books.

36 *N* sizes: Intervention Group *n*=203; Comparison Group *n*=126.

37 Due to limitations with backend data capture on the Qysas platform, this statistic was calculated as the number of literacy group sessions multiplied by the number of minutes per session. The amount of time students actually spent on the platform was not available.

Table 8: **Project Exposure and Dosage Descriptive Statistics by School Type**

| Average Exposure and Dosage Category | School Type | | | | | | Total: All Schools | |
|---|---|---|---|---|---|---|---|---|
| | All-Girls School | | All-Boys School | | Co-Ed School | | | |
| | *n* | Mean | *n* | Mean | *n* | Mean | *n* | Mean |
| Number of Qysas literacy group sessions delivered | | 49 | | 42 | | 44 | | 44 |
| Number of Qysas literacy group sessions attended per student | 19 | 46 | 101 | 41 | 158 | 43 | 278 | 42 |
| Qysas platform usage (maximum amount possible, minutes) per student | 19 | 2,082 | 101 | 1,863 | 158 | 1,914 | 278 | 1,907 |
| Student Qysas reading level | 19 | 6 | 96 | 5 | 146 | 5 | 261 | 5 |
| Number of books read per student | 19 | 127 | 96 | 102 | 146 | 104 | 261 | 105 |

A correlation analysis using student reading outcomes was conducted to determine if there was a relationship between gains on EGRA subtasks and students' reading levels or average number of books read. The analysis revealed a weak but significant relationship between the number of books read per student and EGRA gains on four subtasks: syllable identification, nonword reading, ORF, and reading comprehension. This indicates that students who read more books tended to have greater gains on these subtasks (see Annex Table E.1).[38] Additionally, a weak but significant relationship was observed between the students' reading levels and EGRA gains on two subtasks—ORF and reading comprehension—indicating that the higher a student's reading level, the greater his or her gains on these subtasks (see Annex Table E.1).[39]

## Student Questionnaire Composites

To better understand factors that may have influenced changes in students' EGRA scores from baseline to endline, questions from the student questionnaire were compiled into six composites, or groups of questions related to each other. Each composite consists of a series of items related to a specific theme that may have affected students' early grade reading skill acquisition. Composites were then assigned a maximum score equal to the total number of items in the group.[40]

38 Syllable identification subtask: r=.128, p<0.05, *N*=261. Nonword reading subtask: r=.144, p<0.05, *N*=261. ORF subtask: r=.264, p<0.001, *N*=261. Reading comprehension subtask: r=.263, p<0.001, *N*=261.

39 ORF subtask: r=.207, p<0.001, *N*=261. Reading comprehension subtask: r=.212, p<0.001, *N*=261.

40 Non-responses were given a '0.'

The composites for the Qysas project include:

1. Language exposure
2. Socioeconomic status
3. Family reading support
4. Teacher reading support
5. Disposition to reading
6. Engagement in program

Descriptive statistics for the student questionnaire composites are presented in Table 9 (see Annex C for full composite questions, response options, and frequencies). Overall, the average composite scores of students in the intervention and comparison groups were comparable.

When students were asked if there were books, magazines, or newspapers in Arabic at their schools, 91.4 percent of intervention group students responded yes, compared with 79.7 percent of comparison group students. A higher proportion of comparison group students than intervention group students said they read with a family member at home every day—33.0 percent versus 15.8 percent. Notably, nearly all students in the intervention group said they wanted to continue reading stories on the tablets (93.5 percent) and continue participating in literacy sessions (97.1 percent).

Table 9: **Descriptive Statistics for Student Questionnaire Composites by Group**

| Composite Category | Intervention | | | Comparison | | | All Students | | |
|---|---|---|---|---|---|---|---|---|---|
| | *n* | Mean | SD | *n* | Mean | SD | *n* | Mean | SD |
| Language exposure | 278 | 5.0 | 0.1 | 246 | 4.9 | 0.3 | 524 | 5.0 | 0.2 |
| Socioeconomic status | 278 | 8.4 | 1.2 | 246 | 8.2 | 1.3 | 524 | 8.3 | 1.3 |
| Family reading support | 206 | 3.5 | 0.7 | 203 | 3.2 | 0.9 | 409 | 3.3 | 0.9 |
| Teacher reading support | 278 | 2.4 | 0.6 | 246 | 2.4 | 0.7 | 524 | 2.4 | 0.7 |
| Disposition to reading | 278 | 2.6 | 0.3 | 246 | 2.6 | 0.5 | 524 | 2.6 | 0.4 |
| Engagement in program | 278 | 8.1 | 1.2 | | | | | | |

Composites and student reading gains were examined to determine if there was a relationship. The correlation analysis revealed several weak but significant relationships between the composites and students' gains on EGRA subtasks (see Annex Table E.2). Specifically, students with lower scores on the socioeconomic status composite tended to have smaller gains on the ORF and reading comprehension subtasks.[41] Also, students with higher scores on the family reading support composite tended to have greater gains on the ORF subtask.[42] Students with higher scores on the teacher reading support composite tended to have greater gains on the listening comprehension subtask.[43] Finally, students with higher scores on the disposition to reading composite tended to have greater gains on the reading comprehension subtask.[44]

41 ORF subtask: r=.107, p<0.05, *N*=524. Reading comprehension subtask: r=.097, p<0.05, *N*=524.

42 ORF subtask: r=.111, p<0.05, *N*=409.

43 Listening comprehension subtask: r=.093, p=.033, *N*=524.

44 Reading comprehension subtask: r=.093, p=.034, *N*=524.

# IX. Scalability

Stakeholders are increasingly interested in assessing the scalability of interventions, in addition to results or impacts. To scale up a project means to expand, replicate, adapt, and sustain a successful project in a new geographic area or to reach more beneficiaries over time.[45] ACR GCD grantees have implemented small-scale pilot projects, and an important consideration after each project is the feasibility of replicating or expanding the technology-based innovation and project models to a different or larger population or area.

To inform this decision, STS conducted a scalability assessment guided by the following research question: *Are the project and technology suitable for scaling?* STS used an indirect approach that relies on qualitative descriptions of project performance around seven parameters of sustainability:

- Credibility
- Observability
- Relevance
- Relative advantage
- Ease of transfer and adoption
- Testability
- Sustainability of funding

The seven parameters were adapted from the USAID-funded Scalability Assessment Tool developed by Management Systems International.[46] The tool includes seven sections and 28 questions. STS used data from EOP interviews, EGRA results, literature reviews, and project M&E to assess scalability parameters. These results are meant to inform local program staff, stakeholders, and donors about key considerations before scaling the Qysas project's model and technologies to a larger or different beneficiary population.

## Credibility

An intervention or innovation must be credible to be supported and taken to scale through either replication or expansion. This aspect of scalability assesses whether various stakeholders—including potential adopters, funders, implementers, and beneficiaries—believe that the model has a strong evidence base. This may include existing empirical research or anecdotal information.

### Key Considerations

1. What evidence was used to develop the intervention?
2. What evaluations have been conducted on the intervention?
3. In what social contexts does the intervention work?
4. What individuals and institutions support the intervention?

45 Cooley, L., & Linn, J. F. (2014). *Taking Innovations to Scale: Methods, Applications and Lessons*. Results for Development Institute. Washington, D.C. Retrieved from: https://www.usaid.gov/sites/default/files/documents/1865/v5web_R4D_MSI-BrookingsSynthPaper0914-3.pdf

46 Ibid.

LTM, through its 12-year history of developing digital Arabic-literacy tools and content, has a strong understanding of the needs of early grade Arabic-language learners. LTM has created an impressive library of videos and web-based content that provides young students with an interactive experience as they develop pre-reading and foundational skills. The Qysas project built upon LTM's knowledge of the benefits of interactive learning in early grades and the idea that differentiated learning opportunities are key to developing fluency and comprehension.[47, 48] The e-books offered to students on the Qysas platform ranged in difficulty and subject matter; all were gender- and culturally sensitive. Each book also included an audio voice-over and was accompanied by a quiz to assess comprehension.

Though the Qysas project is a new intervention that was previously untested, LTM launched the I READ ARABIC, a leveled-reading portal, in 2015. The portal contains more than 600 Arabic-reading books and is sold directly to schools. To date, more than 70,000 students have accessed the I READ ARABIC site, and schools have reported increased reading skills among students as a result of using the platform.

LTM piloted the Qysas project in Amman's JEI Discovery Schools, which serve students from a range of socioeconomic backgrounds. JEI Discovery Schools were created as part of a public-private partnership with Jordan's Ministry of Education (MOE) and USAID that began in 2004 and ended in 2009. Benefits of the partnership included access to ICT equipment, broadband connectivity within schools, and a cadre of teachers skilled in using ICT and implementing the electronic curriculum.[49] Despite the belief that JEI Discovery Schools would have sufficient infrastructure to accommodate the Qysas project, LTM needed to procure tablets and routers for schools and provided training to teachers. This type of support could easily be replicated in different social contexts, lending credibility to the potential for scaling the project outside of the JEI Discovery Schools. Furthermore, because LTM developed an offline option for the Qysas platform, the project could be replicated in areas with unreliable internet, such as rural settings or outside of schools.

The Qysas project received support from MOE, USAID/Jordan, and the Queen Rania Foundation for Education and Development (QRF), all of which recognize the need for better literacy support and more technology in the early grades in Jordan. Furthermore, principals and teachers at JEI Discovery Schools expressed in EOP interviews that they believe that using technology helps individualize independent reading time for students; they also noted that the Qysas platform was an efficient way to engage students in reading books.

### Credibility Conclusion

Credibility is high for the Qysas project. LTM established the Qysas project by leveraging its experience in creating engaging, digital content that develops pre-reading and foundational skills for early grade students. LTM provided students with a large selection of engaging e-books, accompanied by audio voice-overs and comprehension questions. The Qysas project was tested in primary schools in Amman that serve students from a range of socioeconomic backgrounds. Because the project was accessible with or without an internet connection, its model could easily be replicated in different social contexts. Key stakeholders support the project and its implementation model.

47 Abadzi, H. (2012). *How to Speed Up Arabic Literacy for Lower-Income Students: Some Insights from Cognitive Neuroscience.* Global Partnership for Education Working Paper Series on Learning No. 9.

48 Little Thinking Minds. (2014). *Interactive on-line platforms for Arabic early grade literacy.* (Unpublished proposal for funding)

49 United States Agency for International Development. (2017, August 16). *Jordan Education Initiative (JEI).* Retrieved from https://partnerships.usaid.gov/partnership/jordan-education-initiative-jei

## Observability

For an intervention to be scaled, it should have observable results that show efficacy or impact. Observability of results is key to providing nontechnical audiences with proof that an intervention achieved its intended outcomes and therefore will have positive impacts on beneficiaries.

### Key Considerations

1. Are the results visual and observable?
2. What, if any, is the relationship between results and the intervention?
3. Is there any emotional appeal associated with the evidence?

There are empirical results indicating that exposure to the Qysas project leads to stronger foundational literacy skills, including oral language and vocabulary, fluency, and comprehension. Students who participated in the Qysas project over an academic year had greater gains on three EGRA subtasks—syllable identification, ORF, and reading comprehension—than did their peers in the comparison group. Furthermore, the percentage of intervention group students who received zero scores on the ORF and reading comprehension subtasks at endline was significantly lower than the percentage of comparison group students who received zero scores. These findings are notable, as those subtasks measured the reading skills the Qysas project intended to impact.

Additionally, correlation analysis indicates that the quantity and level of books students read also impacted their reading gains. Analysis revealed a weak but statistically significant relationship between the number of books read per student and EGRA gains on the syllable identification, nonword reading, ORF, and reading comprehension subtasks. This indicates that students who read more books tended to have greater gains on these subtasks. Additionally, a weak but statistically significant relationship was observed between student reading levels and two subtasks—ORF and reading comprehension—indicating that the higher a student's reading level, the greater his or her gains on these subtasks.

These gains were anticipated by teachers. Teachers confirmed that prior to the Qysas project most students did not have a regular time to read independently each week, neither at home nor at school. The project created opportunities for students to read regularly. Teachers noted in EOP interviews that they observed increased motivation and overall improvement in their students' reading abilities. In EOP interviews, students said that they enjoyed using the Qysas platform and like to read. All but one student said they would like to continue using it in the future.

### Observability Conclusion

The results of the Qysas project are visible and observable. Empirical results show that the students who participated in the project had greater reading gains on several foundational literacy skills than did their peers who did not have access to the project. The observability evidence supports the scale up of the Qysas project.

## Relevance

An intervention must be relevant to the context in which it is being implemented to be scalable. It should effectively address a problem that is recognizable and considered important by stakeholders.

### Key Considerations

1. What is the level of significance of the problem that the intervention is trying to address?
2. Does the intervention address a priority on the policy agenda for potential adopters?
3. Does the intervention address a need felt by the potential beneficiaries?

Students in Jordan face literacy challenges in the early grades. Reasons for these include limited instructional time, textbooks, supplementary reading materials, and parental help; teaching methods that do not match the local context; and failing educational systems.[50] Results from the 2012 National Early Grade Literacy and Numeracy Survey (2012 National Survey) in Jordan indicated that Grade 2 students read, on average, 15.2 CWPM, which is considered too slow to permit students to read with comprehension.[51] Results also indicated that Grade 2 students had low letter sound identification skills and decoding skills; 24.1 percent of students received zero scores on the letter sound identification subtask, and 47.1 percent received zero scores on the nonword reading subtask.[52]

Improving literacy acquisition and providing students with increased access to education through technology are priorities for the Government of Jordan (GOJ) and funders in the country. As part of its Jordan 2025 development strategy, GOJ is focused on improving early grade reading levels of children and integrating innovative technologies to enhance student learning. Specifically, GOJ identifies the development of basic reading of children aged six to ten and the expansion of quality early grade education through technology platforms as key indicators of success in its ten-year strategy.[53] QRF is also focusing on educational content and integration with technology in upcoming years. In EOP interviews, representatives from USAID/Jordan articulated their support for GOJ and early grade reading improvement; this support is evident through funding of USAID RAMP and the construction of high-technology demonstration schools. USAID/Jordan staff noted that they have not yet found quality educational-reading content in digital form, which they identified as a gap in the current landscape.

The beneficiaries of the Qysas project recognize the significance of the literacy challenges in Jordan, and some named lack of level-appropriate books as a cause. In EOP interviews, two students said they had no books at home, while another student said she had books in English only. A teacher from a comparison group school noted that in the absence of the Qysas project, she relied on a collection of 100 hard-copy books provided by MOE, which included stories and science books. Intervention group teachers noted that the Qysas project increased student motivation to read. They also reported that students' ability to use audio voice-overs to follow along with the texts and to take comprehension quizzes at the end was an innovative way to address the literacy challenges in their classrooms.

50 Abadzi, H. (2012). *How to Speed Up Arabic Literacy for Lower-Income Students: Some Insights from Cognitive Neuroscience.* Global Partnership for Education Working Paper Series on Learning No. 9.

51 RTI International. (2014, August). *National Early Grade Literacy and Numeracy Survey-Jordan: Intervention Impact Analysis Report*. Retrieved from https://ierc-publicfiles.s3.amazonaws.com/public/resources/Report_EGRA%20and%20EGMA%20Intervention%20Impact%20Analysis_Jordan_08_2014.pdf

52 Ibid.

53 Government of Jordan. (2015). *Jordan 2025: A National Vision and Strategy*. Retrieved from http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/247/Jordan-2025

### Relevance Conclusion

The relevance of the Qysas project is moderate. The Qysas project's innovative use of technology is highly relevant to GOJ and funders. Stakeholder feedback clearly articulates the need for better literacy approaches that engage students, specifically through technology. Furthermore, teachers do not appear to have enough leveled books in their classrooms to motivate students to read. However, because the Qysas project targets improved vocabulary, fluency, and reading comprehension, it may not be a stand-alone solution for stakeholders who seek to improve weak pre-reading and foundational skills. The project could improve the relevance of its model by addressing a wider range of pre-reading skills.

## Relative Advantage

Relative advantage relates to whether the intervention offers an improvement over current or alternative solutions to the problem.

### Key Considerations

1. How adequate are the current solutions to the problem?
2. Is this intervention more effective than the current solutions?
3. Is this intervention more effective than other innovative models established?

Currently, Arabic textbooks teach reading through whole words and without the potential for differentiated learning for students with varying reading skills. Based on the 2012 National Survey, this approach to improving early grade reading skills has not been adequate. While there a few other online Arabic-reading programs—such as 3asafeer and Nahla wa Nahil in Jordan—none are used in public schools; instead, these programs are repositories for reading materials that have no leveling system and are not linked with an instructional strategy to teach fluency and comprehension for early grade students.

In response to the EGRA results that revealed the average Grade 2 student in Jordan reads too slowly for comprehension, MOE partnered with USAID and RTI to implement the USAID RAMP project, which provides teacher and administrator training on effective reading instruction; engages communities in school accountability; develops and distributes improved learning materials to every Kindergarten through Grade 3 classroom in Jordan; and supports GOJ's efforts to institutionalize early grade reading and math policies, standards, and assessments.[54] The project began in 2015 and will end in 2019. Its comprehensive approach has the potential to improve teaching instruction and student reading skills. In contrast with the Qysas project, RAMP does not leverage ICT to provide differentiated learning or access to a wide range of leveled books. The self-paced approach of the Qysas platform allows students to practice reading stories at the rate appropriate for them; this is a difficult approach for teachers to manage in classrooms with many students and without the use of ICT. Because of this, the Qysas platform may serve as a valuable non-classroom complement to the classroom-based model of USAID RAMP.

Additionally, as the USAID RAMP project has just completed its first year of implementation, it is unclear if the approach has resulted in reading gains that are comparable to the Qysas project in its pilot phase.

54 United States Agency for International Development. (2017, May 26). *Early Grade Reading and Mathematics Project (RAMP)*. Retrieved from https://www.usaid.gov/jordan/fact-sheets/early-grade-reading-and-mathematics-project-ramp

### Relative Advantage Conclusion

The Qysas project offers a relative advantage over existing platforms offering Arabic e-books due to its differentiated approach, which provides students with the opportunity to read books that are appropriate for their level and accompanying voice-over audio recordings. While larger, donor-funded projects within Jordan are addressing curriculum and classroom instruction, the Qysas project could serve as an effective complement to these classroom-based approaches, especially given its observable results and stakeholder support.

## Ease of Transfer and Adoption

Ease of transfer and adoption relates to whether the characteristics and components of the intervention lend themselves to being adopted by organizations other than the original implementer. This parameter of scalability looks at how complex or resource-heavy an intervention is, as well as if specific elements of the intervention may be deemed inappropriate or unattractive to other implementers.

### Key Considerations[55]

1. What is the level of technical sophistication of the intervention's components and activities?
2. What is the level of complexity of the intervention?
3. What level of supervision and monitoring is needed?

The components and activities of the Qysas project do not require high levels of technical sophistication given that the platform has already been developed in Arabic and has been pilot tested over two years. During the project, LTM spent significant resources and time to develop the platform and improve user experience based on feedback received from teachers and students. The second component of the project—creation of literacy groups to administer sessions with the Qysas platform on tablets—requires very minimal levels of technical sophistication from a potential adopter. Although the JEI Discovery School had some preexisting ICT infrastructure that LTM capitalized upon, the poor quality of the infrastructure necessitated the Qysas project team make accommodations within the platform for schools with low- or no-internet access. This meant that the project could be replicated in areas without internet connectivity. Furthermore, the JEI teachers, who had limited ICT literacy at the start of the project, received a short training from the Qysas project and were then able to effectively oversee students, who easily understood how to utilize the tablets and platform.

The complexity of the intervention is low. Teachers were asked to store and charge the tablets properly and to hold weekly sessions in which students independently used the Qysas platform to read stories. The primary challenges faced during implementation related to the teachers' ability to make time during the school day to hold literacy group sessions. If the project were replicated in Jordan or in other contexts, that challenge could be reconciled easily by coordinating with the school administration and teachers to establish a timetable for the sessions

55 In the original tool, this section includes 11 questions. This analysis includes the questions deemed most relevant for the intervention model and context.

Although the Qysas project required low levels of technical sophistication and was relatively simple in terms of complexity, LTM and INTEGRATED provided significant ongoing supervision and monitoring of the literacy group sessions during the two years of implementation. A major reason for this was the need to improve upon the Qysas platform, particularly during the first year of implementation. LTM wanted to ensure that the platform functioned properly and allowed students to progress through the e-books as intended. Furthermore, the Qysas project team was aware of the implementation challenges faced by teachers, particularly around scheduling of literacy group sessions; much of their monitoring efforts went towards ensuring fidelity of implementation, tracking attendance, and collecting user feedback. If the Qysas project were to be adopted, limited technical assistance for the platform and for supervision of sessions would likely not be necessary, depending on the capacity of teachers and users in the new contexts.

### Ease of Transfer and Adoption Conclusion

The Qysas project is an attractive model for scale based on the ease of transfer and adoption parameter. The Qysas platform has been pilot tested and is stable. It does not require high levels of ICT literacy among users or internet connectivity. Although the Qysas project team invested significantly in supervision and monitoring, this would likely not be necessary for adopters, as long as teachers and users received sufficient training on the technology and instructions for implementation.

## Testability

The testability parameter examines how easy it is for organizations to pilot the intervention on a small scale before full adoption. Testability assesses whether potential adopters would need to commit significant resources or time to test the model if they chose to pilot it in a new context.

### Key Consideration

1. Can the model be tested on a limited scale?

The Qysas project invested significant resources and time to test the platform and implementation model in ten intervention schools. As the platform is stable and would be relatively easy to roll out in other Arabic-speaking contexts, testing in a new context would have a low cost. For replication on a small scale, an organization would potentially need to invest in hardware—tablets or desktop computers—or leverage existing ICT resources and to identify and train adults to oversee the delivery of the Qysas platform sessions. The Qysas model is not dependent on teachers or schools for implementation, as the Arabic-reading materials on the platform do not track a standard curriculum. Future pilots of the Qysas project could take place in a variety of non-school sites, such as libraries, community centers, or homes.

### Testability Conclusion

The Qysas project model is easy to test in new contexts or with new organizations. Future adopters would most likely not need to invest significant resources or time to test the project in other parts of Jordan or in other Arabic-speaking countries.

## Sustainability of Funding

Sustainability of funding refers to how cost effective the intervention is and whether there are funds available to scale the intervention, either through government or other organizations.

### Key Considerations

1. Is the model more cost effective than other solutions?
2. What kind of funding commitment is required to scale the model?
3. Is there any potential for internal revenue from the model (i.e. service fees)?

No comprehensive cost-effectiveness analysis was conducted on the Qysas project; instead, a cost analysis was performed to answer the supplemental question *How much did the development, implementation, and management aspects of the project cost?* A cost analysis is often a component of scalability assessments, as it helps decision makers and stakeholders understand the feasibility of replication with given budgetary constraints. Because ACR GCD grantees implemented new approaches, they often allotted significant financial resources to developing new materials that could be used on a recurring basis. To better understand the funding requirements of the Qysas project, a cost analysis was conducted to present the total cost of the intervention and to understand the investments that would be needed for project replication or scale-up.

USAID guidance on conducting cost analyses on early grade reading projects suggests that the "ingredients method"[56] be used to calculate costs in the following categories:

- Management and associated technical costs
- Development costs
- Implementation costs

Project staff completed a costing template with guidance from World Vision and STS. Costs were outlined based on the activities from the project work plan, and each expenditure was classified based on the three categories listed above.[57] Costs invoiced from the beginning of the project through June 2017 were included in the analysis. The cost analysis also includes $83,990 in matching funds contributed by LTM. Despite attempts to fully match invoiced expenses to those in the costing analysis, $564,692 was included in the cost analysis, compared with $563,989 that was invoiced. This discrepancy of $703 was most likely due to expenses that were double counted in the cost analysis and to rounding errors.

Table 10 provides a detailed breakdown of costs by category based on the Qysas project's objectives.

56 RTI International. (2015). Measurement and research support to education strategy goal 1: Early grade reading costing template and guidance. Washington, D.C.: USAID. http://pdf.usaid.gov/pdf_docs/PBAAF458.pdf

57 The total grant amount for the Qysas project was $486,397; as of June 30, 2017, the project had invoiced $480,023 and had $6,374 remaining in its budget.

Table 10: **Cost Analysis**

| Objective | Management | Development | Implementation |
|---|---|---|---|
| *Objective 1* - Qysas platform development | $ - | $ 146,124 | $ - |
| *Objective 2* - M&E | $ - | $ - | $ 129,775 |
| *Objective 3* - Literacy groups | $ - | $ - | $ 86,647 |
| *Objective 4* - Other expenses | $ - | $ - | $ 8,488 |
| Total | $ 193,659 | $ 146,124 | $ 224,910 |
| Percentage of Total (%) | 34.3 | 25.9 | 39.8 |

The management category includes costs that are not directly related to implementation and are likely to vary widely based on who is overseeing the implementation of the intervention. Management costs for the Qysas project represented 34.3 percent of the costs expended. They include the cost of maintaining the project office in Amman; personnel salaries and expatriate costs associated with nontechnical work; travel, lodging, and per-diem costs for technical consultants; and other indirect rates and fees.[58]

Development includes the costs related to the development of materials, survey instruments, programs, and other content that would not need to be redeveloped in the scale-up of a project. The development costs for the Qysas project represented 25.9 percent of the costs expended. The major expenses within this category were platform development, book digitization, and voice recording.

The implementation cost category is arguably the most relevant for stakeholders who are considering scaling up a project or intervention. This category includes all of the recurrent activities and costs that would need to be expensed should the project be replicated, including printing and distributing materials, training, M&E, events and presentations, workshops, and human resources activities. For the Qysas project, implementation costs represented 39.8 percent of the total project cost. Notably, the largest costs within this category were fees paid to JEI for the use of the schools for implementation. This cost may be avoided in a future iteration of the project if implemented outside of the JEI Discovery School system. The other major cost in this category was M&E.

Projects sometimes benefit from in-kind services, institutional support, or preexisting relationships with stakeholders or governments that may provide the project with tangible benefits, although it may be difficult or impossible to monetize the costs. Examples of this include local volunteers, strong capacity or support from a large nongovernmental organization, or relationships with local governments that could ease logistics and procedures. The Qysas project received in-kind donations of tablets and routers from the Abdul Hameed Shoman Foundation and Itihad Bank; these costs are not included in the analysis.

58 Management costs are inclusive of a 17% flat fee charged for Negotiated Indirect Cost Recovery Agreement (NICRA), which captures indirect costs including, regional management and technical support, the local LTM country representative, overseas operations management (LTM headquarters), program quality and support (LTM headquarters), and shipping and procurement costs. This also captures miscellaneous headquarters-based services that were provided to the project including, finance, internal auditing, human resources, executive management, board, and global knowledge and information management. This analysis assumes that no NICRA expenses were also billed as independent line items, although it should be recognized that some double-counting may have occurred.

### Sustainability of Funding Conclusion

Implementation costs represented a larger proportion of the overall cost of the project than did management or development costs. This is an important consideration given that implementation costs would most likely be re-incurred in the case of a scale-up of the project. A future implementer could potentially reduce implementation costs by replicating the project in a different location where there would be no usage fees.

# X. Conclusions

LTM and INTEGRATED implemented the Qysas project to address the lack of leveled, Arabic-language reading materials for children in Jordan with the goal of increasing early grade literacy skills in Arabic—specifically, oral language and vocabulary, fluency, and comprehension. By providing self-paced, interactive e-books with accompanying audio, the project successfully strengthened key reading skills of students who participated. Students read, on average, more than 100 e-books during the project. The observable results and potential for easy expansion to other Arabic-speaking countries make the Qysas project an attractive model for scale-up.

The following are lessons that should be considered for any future interventions incorporating components of the Qysas project.

## Lessons Learned

The Qysas project had a significant impact on students' fluency and comprehension skills when measured over an academic year.

Students who participated in the Qysas project had statistically significantly greater gains than their peers on the syllable identification, ORF, and reading comprehension subtasks. Furthermore, each student read, on average, about 105 books on the Qysas platform over the academic year—a number that underscores the excitement expressed by students and teachers about access to engaging e-book content. The project should further explore these results to determine the practical significance of the observed reading gains—in other words, are they large enough to contribute to students' reading comprehension.

Pilot projects using new technology should be given ample time and resources to test the technology component prior to full implementation.

The Qysas project was implemented with two different cohorts of Grade 2 students—a 2015–16 academic year cohort and a 2016–17 academic year cohort. The project experienced significant technological and implementation challenges during the first year. Had the project not received an extension to stabilize the technology and project model, it is likely that the EGRA results would not have shown the reading gains that were observable during the second year of implementation. LTM's experience serves as an example of the importance of funding sufficient time to test and refine innovative technology-based approaches prior to measuring their impacts.

### In Jordan, boys continue to outperform girls in early grade reading, but the Qysas project offers a promising way to help girls advance their reading skills.

Girls who had access to the Qysas platform had greater gains than girls in the comparison group on the syllable identification, ORF, and reading comprehension subtasks. By contrast, boys in the intervention and comparison groups had comparable gains from baseline to endline, indicating that the project may not have made a discernable difference in boys' reading skills progression. This suggests that the Qysas platform may offer a solution that can especially help girls become readers—a finding that merits further investigation.

### Technology-based interventions that can be used in or out of school settings have great potential for scale-up.

The Qysas project was implemented in JEI Discovery Schools, which allowed LTM to leverage existing ICT infrastructure in the schools. However, the equipment—computers and stable internet connectivity—that LTM expected to use did not prove as reliable as anticipated. LTM ultimately developed an offline option for the Qysas platform and made the platform available on tablets, which makes the technology component of the project more accessible in a wide variety of contexts. Because the platform does not rely on a stable internet connection, nor does it necessitate expensive hardware to operate, the Qysas project model could be easily rolled-out throughout Arabic-speaking countries in rural or urban settings.

### Partnerships between technology-focused companies and organizations with implementation and monitoring experience can foster synergies and positive impacts on technology-based projects.

LTM has more than 12 years of experience developing digital, Arabic-literacy tools and content but limited experience implementing and monitoring projects in schools. On the Qysas project, LTM partnered with INTEGRATED, an organization with a strong background in M&E. LTM and INTEGRATED established a strong working relationship and divided tasks depending on each team's strengths, guided by continual and constant communication. By leveraging each team's capacities, they worked over two implementation years to stabilize the technology and implementation model, which resulted in notable early grade reading gains for participating students. The pairing of organizations with technological expertise and those with implementation and M&E expertise should be explored as a mechanism to maximize the FOI and impact on technology-based reading projects.

# Annexes

# Annex A: **EGRA Instrument 1**

**معلومات عامة**

المرجع مع الطفل الذي سيجري معه التقييم. ابدأ معه محادثة قصيرة حول مواضيع تهمه بغرض تهدئته وتشجيعه. المهم أن تبدو واثقاً وودوداً. أشعر الطفل أن هذا الاختبار هو فرصة له لإظهار ما يعرفه وما يستطيع عمله، وليست المهمة الصعبة التي يتوقعها. المهم أن تبدو واثقاً وودوداً أمام الطفل. أشعره أنك مهتم بما يقوله وبطريقة صوته العالي ووجهه المتهلل.

**صباح الخير. اسمي_____ أسكن في_____. أريد أن أتكلم معك عن نفسي، عندي ..... من الأطفال، عمرهم .....؛ عندي في البيت.....، الرياضة التي أمارسها .....، إلخ]**

**1. تكلم لي عن نفسك وعن عائلتك؟ [انتظر الجواب؛ إذا كان التلميذ غير متحمس للكلام، وجّه إليه السؤال رقم2. إذا تكلم بارتياح، انتقل لفقرة الموافقة الشفهية].**

**2. ما اللعبة التي تحبها؟**

**الموافقة الشفهية**

**اسمح لي أن أقول لك لماذا أنا معك اليوم. أنا أعمل في وزارة التربية والتعليم ، وأحاول أن أفهم كيف يتعلم الأطفال القراءة. لقد تم اختيارك للقيام بهذا الاختبار بشكل عشوائي.**

**أحب أن تتعاون معي في هذه العملية. ولكن إذا لم ترد المشاركة، فلك ذلك.**

**سنلعب لعبة القراءة حيث سأطلب منك أن تقرأ بعض الحروف ، وبعض الكلمات و قصة قصيرة بصوت عال.**

**سأستعمل هذه الساعة لأحسب الوقت الذي تحتاجه في القراءة.**

**هذا ليس امتحانًا ، وليس له أي تأثير على علاماتك المدرسية.**

**سأسألك بعض الأسئلة الأخرى عن عائلتك.**

**لن أكتب اسمك على ورقة الاختبار. لن يرى أي أحد إجاباتك عليها.**

**مرة أخرى، أنت غير ملزم بالمشاركة إذا لم تكن ترغب في ذلك ، وإذا بدأنا ولم ترد الجواب عن أي سؤال، فلا مشكلة في ذلك.**

**هل لديك سؤال ؟هل أنت مستعد؟**

على الموافقة الشفهية للطفل (x) في هذا المربع إذا لم يحصل على الموافقة، اشكر الطفل وقل للطفل الذي عنده واسع عمل من نفس الاستمارة)

| | |
|---|---|
| 1. تاريخ اليوم<br>مثال: 15 آذار 2011 = 15 -03- 2011 | يوم:__ الشهر:__ السنة:__ |
| 2. المحافظة: | |
| 3. مديرية التربية والتعليم: | |
| 4. اسم المدرسة | |
| 5. الرقم الوطني للمدرسة: | |
| 6. صفة مدرسة دوام الطفل | صفة مدرسة واحدة ☐ صفة مدرسة متعددة ☐ |
| 7. اسم المعلم | |
| 8. رمز المعلم: (اتركه فارغاً) | ☐ ☐ |
| 9. الصف: | الأول (1) الثاني (2) الثالث (3) |
| 10. الشعبة: | |
| 11. رقم الطفل: | |
| 12. تاريخ ميلاد الطفل: | الشهر:__ السنة:__ ☐ |
| 13. جنس الطفل: | ذكر ☐ أنثى ☐ |
| 14. وقت البدء بالقراءة: | _____ : _____ (الرجاء تدوينها بالدقائق) صباحاً ☐ مساءً ☐ |

## ال[illegible]م 1 - ال[illegible]عرف على أصوات الحروف

🗣 **هذه ورقة تضم حروفًا وحركات عربية، اقرأ قدر ماتستطيع منها (اقرأ صوت الحرف وليس اسمه).**
**مثلا، صوت هذا الحرف [***أشر إلى الحرف "لـ"* **]هو "لـ" كما في كلمة "**مَلْعَب**".**

🗣 **و الآن لنقم بهذاالتمرين: قل لي صوت هذا الحرف [***وأشر إلى الحرف "كـ"* **]:**
🗣✓**: جيد، صوت هذا الحرف هو"كـ"**
🗣×**: صوت هذا الحرف هو"كـ"**

🗣 **لنجرب مثالاً آخر: قل لي صوت هذه الحركة [***أشر إلى الفتحة* ـَـ**]:**
🗣✓**: أحسنت، صوت هذه الحركة هو "ـَـ "**
🗣×**: صوت هذه الحركة هو "ـِـ "**

🗣 **هل فهمت المطلوب منك؟**
**عندما أقول لك "لنبدأ"، اقرأ صوت الحروف بدقة وبأكبر سرعة ممكنة. سنبدأ من هنا ونكمل بهذه الطريقة [***أشر إلى الحرف الأول في السطر الأول، وتتبع معه بأصبعك على الحروف الموجودة في السطر الأول بأكمله***]. هل أنت مستعد؟ لنبدأ**

ضع **<u>بوضوح</u>** علامة(/) على أي خطأ يرتكبه الطفل.
في حالة قيام الطفل بتصحيح نفسه، قم بوضع دائرة ○ حول علامة (/) التي وضعتها مسبقا له.
ضع العلامة ( ] ) على آخر حرف قرأه الطفل.

م ش ال:ل ك _

| | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|
| (10) | نـ | ـــه | حـ | ـــة | ج | ـــة | هـ | ف | تـــ | بـــ |
| (20) | ـــِ | و | قـــ | ز | س | خ | ـــهـــ | فـــ | ة | ب |
| (30) | ق | ص | ب | ـــغـــ | ق | و | ز | خ | ـــة | صـــ |
| (40) | ذ | ظ | ي | نـــ | و | ـــهـــ | ط | شـــ | ض | ـــعـــ |
| (50) | ء | خـــ | ش | ق | ن | ي | غ | د | بـــ | غ |
| (60) | م | ن | ط | ســـ | فـــ | ث | ح | ذ | ض | ب |
| (70) | ـــعـــ | ط | ث | ق | ج | ـــه | ضـــ | ـــه | ح | تـــ |
| (80) | و | ص | جـــ | د | ذ | خـــ | ـــهـــ | جـــ | ظ | ل |
| (90) | س | لـــ | ذ | خـــ | ث | ء | مـــ | خ | عـــ | ز |
| (100) | خـــ | هـــ | ـــهـــ | ضـــ | ـــعـــ | ح | و | ذ | ب | ـُـ |

الوقت المتبقي من وقت التمرين (عدد الثواني):

ضع علامة(×) في هذا المربع□في حال أوقفت هذا الجزء من التقييم ؛ لأن الطفل لم يقرأ أيًّا من الكلمات في السطر الأول بشكل صحيح.

## ال[illegible]م 2 –[illegible]راءة الم[illegible]اطع

🗣 **هذه ورقة تضم مقاطعَ وحركات عربية، اقرأ قدر ماتستطيع منها (اقرأ المقطع).**
**مثلا، نقرأ هذا المقطع [***أشر إلى المقطع* "أُغْ" **]" كما في كلمة "** أُغْ **".**

🗣 **و الآن لنقم بهذاالتمرين: اقرأ هذا المقطع [***وأشر إلى المقطع* "را" **]:**
🗣✓**: جيد، نقرأ هذا المقطع هكذا"** را **"**
🗣×**: نقرأ هذا المقطع"** را **"**

🗣 **لنجرب مثالاً آخر: اقرأ لي هذا المقطع [*أشر إلى المقطع*** سى **]:**
🗣✓**: أحسنت، نقرأ هذا المقطع هو "**سى **"**
🗣×**: نقرأ هذا المقطع هكذا "** سى **"**

🗣 **هل فهمت المطلوب منك؟**
**عندما أقول لك "لنبدأ"، اقرأ المقطع بدقة وبأكبر سرعة ممكنة. سنبدأ من هنا ونكمل بهذه الطريقة** *[أشر إلى المقطع الأول في السطر الأول، وتتبع معه بأصبعك على المقاطع الموجودة في السطر الأول بأكمله]*. **هل أنت مستعد؟ لنبدأ**

✍ضع **بوضوح** علامة(/) على أي خطأ يرتكبه الطفل.
✍في حالة قيام الطفل بتصحيح نفسه، قم بوضع دائرة ◯ حول علامة ( / ) التي وضعتها مسبقا له
✍ضع العلامة ( ] ) على آخر كلمة قرأها الطفل.

م[illegible]ل[illegible]ع را_

| | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|
| (10) | دي | فو | بِ | هِ | مي | زِ | وَقْ | حِب | تى | ظَ |
| (20) | ءُ | رُ | كُ | قو | رَسْ | قِ | رِ | الْ | قَب | هً |
| (30) | مَ | إِ | كو | ذي | ظَ | جا | حَو | دي | هَ | يَحْ |
| (40) | طو | لى | ةِ | ذا | حًا | دًا | رو | تِ | رٍ | هِمْ |
| (50) | نِ | دَ | بِ | گث | مِحْ | نٌ | مِنْ | صَوْ | ئِـ | دا |
| (60) | ها | لَتْ | قِ | ضِ | عِنْ | را | ةٍ | جا | دا | فِ |
| (70) | ضِ | صَوْ | أَلْ | أَنْ | عُصْ | ـهَ | سُ | حَتْ | مُ | رُ |
| (80) | قا | يَنْ | رى | خَ | قَة | دَ | عُ | ظَ | ـهِ | خى |
| (90) | بَعْ | غَيْ | رٍ | ڪِنْ | إِ | تُ | مَزْ | مَنْ | عِنْ | عا |
| (100) | عا | رَخْ | حا | أَج | تَنْ | في | هَقْ | كو | با | دَزْ |

✍ الوقت المتبقي من وقت التمرين (عدد الثواني):

✍ ضع علامة(×) في هذا المربع□في حال أوقفت هذا الجزء من التقييم ؛ لأن الطفل لم يقرأ أيًّا من الكلمات في السطر الأول بشكل صحيح.

## ال[illegible]م 3 - [illegible]راءة لكمات مح[illegible]رعة

**هذه بعض الكلمات المخترعة. اقرأ بشكل صحيح أكبر عدد ممكن منها. لا تقرأ حرفا بحرف بل اقرأ الكلمة بالكامل. مثلاً هذه الكلمة المخترعة هي " الفَلاَّطُ ".**

**الآن اقرأ الكلمة التالية: [***أشر إلى كلمة شلاَمِيذُ***]:**
**✓:أحسنت، " شلاَمِيذُ"**
**×: " *شلاَمِيذُ* " *بشكل صحيح، قل*: هذه الكلمة المخترعة هي "شَلاَمِيذُ"**

**لنجرب الآن كلمة أخرى: اقرأ هذه الكلمة [***أشر إلى كلمة "ناسِبَ"***]:**
**✓:جيد جداً ، " ناسِبَ "**
**×:هذه الكلمة المخترعة هي "ناسِبَ"**

**عندما أقول لك "ابدأ"، اقرأ الكلمات بدقة وبأكبر سرعة ممكنة. سنبدأ من هنا ونكمل بهذه الطريقة [***أشر إلى الكلمة الأولى في السطر الأول، وتتبع معه بأصبعك الكلمات في السطر الأول بأكمله***].**
**هل أنت مستعد؟ لنبدأ**

ضع **بوضوح** علامة(/) على أي خطأ يرتكبه الطفل.
في حالة قيام الطفل بتصحيح نفسه، قم بوضع دائرة حول علامة ( / ) التي وضعتها مسبقا له
ضع العلامة ( ] ) على آخر كلمة قرأها الطفل.

م[illegible]ال[illegible] [illegible]ط [illegible]م [illegible]ذ [illegible]ب
ش

| | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| (5) | جيها | فِعْ | أَغي | صالِدُ | رَيْلَمُ |
| (10) | سَحْتَ | قَبير | غَيْسَمُ | قاطٍ | أُفِّي |
| (15) | يَمْضُ | أُشِبُّ | ذَلى | سَعيمَةُ | سى |
| (20) | خابَةُ | صالِب | مِيهِ | ثَوْلَ | شَمْدَ |
| (25) | بُجى | أَظي | نَبُرَ | تِماجي | تَشْبِرونَ |
| (30) | سَمْهُ | قَبِسَهُ | جُدْءُ | خَمْبَ | خَناءً |
| (35) | تَخُمُ | تاري | را | أَمْشَنُ | ضا |
| (40) | مَحْبُ | دافَ | عاصِل | سا | ذَفْ |
| (45) | أَفا | سَلْعَبُ | قِماسي | بِلْخُ | انْفَيصَ |
| (50) | أُحّي | فُدّاساً | ماصي | شاوَ | قَدْحُنْ |

الوقت المتبقي من وقت التمرين (عدد الثواني):

ضع علامة(×) في هذا المربع□في حال أوقفت هذا الجزء من التقييم ؛ لأن الطفل لم يقرأ أيًّا من الكلمات في السطر الأول بشكل صحيح.

## ا ه ى ف ص س ق ر ا ت ا ر ي ا ق ر أ م 4 ا ل

**هذه قصة قصيرة، ركز جيدًا واقرأها بشكل صحيح و بصوت عال وبأقصى سرعة ممكنة. حين تنتهي، سأسألك بعض الأسئلة حول ما قرأته. هل فهمت المطلوب منك؟ حين أقول لك "لنبدأ"، ابدأ بالقراءة. مستعد؟ لنبدأ.**

60**ثانية**

**بعد مرور 60 ثانية،** ستقول **'توقف'**.

حين يتردد الطفل لمدة تزيد على3 ثوانٍ في قراءة الكلمة. أشر إلى الكلمة التالية وقل : **"لنكمل من فضلك"**

قاعدة التوقف المبكّر: إذا وضعت علامة (//) على جميع الكلمات في السطر الأول على أنها خطأ ولم يصحح الطفل أي خطأ من أخطائه، قل **"شكرًا"** وأوقف التمرين. ضع علامة (×) في المربع الموجود في أسفل الصفحة وانتقل إلى التمرين الذي بعده.

ضع **بوضوح** علامة( / ) على أي خطأ يرتكبه الطفل اثناء القراءة. ضع العلامة ( ] ) على آخر كلمة قرأها الطفل.

---

جَلَسَ ياسِرٌ عَـــــلى شُرْفَةِ مَنْزِلِهِ في صَباحِ يَـــــوْمِ الْعُـــــطْلَـــةِ،

يَشْرَبُ كوبًا مِنَ الْحَليبِ السّاخِنِ. وَفَجْأَةً سَمِعَ صُراخًا في الشّارِعِ. نَظَرَ مِنْ أَعْلى،

فَرَأى بَعْضَ الأَطْفالِ يَتَلاعَبونَ بِطائِرٍ صَغيرٍ وَقَعَ مِنْ عُشِّهِ.

نزَلَ مُسْرِعًا، وَنَصَحَهُمْ قائِلاً: أَعيدوا الطّائِرَ إِلى عُشِّهِ؛ فَهُوَ كائن ضعيف ؛

يَحْتاجُ مِثْلَنا إِلى أُمِّهِ لِتَرْعاهُ فَكَّرَ الأَطْفالُ قَليلاً، فقالوا: صَدَقْتَ.

---

الوقت المتبقي من وقت التمرين (عدد الثواني):

ضع علامة(×) في هذا المربع□في حال أوقفت هذا الجزء من التقييم ؛ لأن الطفل لم يقرأ أيًّا من الكلمات في السطر الأول بشكل صحيح.

## ال��م 4 – ب  ◆هم الم◆روء

🕐
**اسحب نص القصة من أمام الطفل** ووجه إليه الأسئلة أدناه.
➲ اترك للطفل 15 ثانية على الأكثر كي يجيب عن كل سؤال.
**وجّه السؤال المقابل لكل سطر قرأه الطفل حتى تصل إلى السطر الذي يحتوي العلامة( ]) والتي تشير إلى مكان توقف الطفل عن القراءة.**

**🗣سأوجه إليك الآن بعض الأسئلة حول القصة التي قرأت. أجب عن الأسئلة بشكل صحيح.**

✍ضع علامة (×) في الخانة التي تتناسب مع إجابة الطفل، و من ثم انتقل إلى السؤال الذي يليه.

| | لا إجابة | غير صحيحة | صحيحة |
|---|---|---|---|
| - أَيْنَ جَلَسَ ياسِرٌ في صَباحِ يَوْمِ الْعُطْلَةِ؟ عَـــــلى شُرْفَةِ مَنْزِلِهِ | | | |
| 2- ماذا سمع ياسر فجأة ؟ صراخ فى الشارع | | | |
| 3- بِماذا كانَ الأَطْفالُ يَتَلاعَبونَ؟ بِطائِرٍ صَغيرٍ | | | |
| 4- لِماذا أَسْرَعَ ياسِرٌ بِالنُّزولِ إِلى الأَطْفالِ؟ لينصحهم بإعادة الطائر | | | |
| 5- لِماذا يَحْتاجُ الطّائِرُ إِلى أُمِّهِ؟ لترعاه | | | |

## ال��م 5 ?هم الم?موع

X🕐
**يقرأ المقيّم بصوت عال النص التالي ولمرة واحدة فقط وبتأنٍّ(كلمة كل ثانية تقريبًا). قل للطفل:**

🗣 **سأقرأ عليك قصة قصيرة بصوت عال، مرة واحدة فقط. و بعد ذلك سأوجّه إليك بعض الأسئلة. اسمع جيدًا من فضلك وأجب عنها بشكل صحيح. هل فهمت المطلوب منك؟**

"اسْتَيْقَظَ أَبو مُحَمَّدٍ في الصَّباحِ الْباكِرِ نَشيطًا؛ لِيَذْهَبَ إِلى عَمَلِهِ. تَناوَلَ فُطورَهُ، ثُمَّ لَبِسَ مِعْطَفَهُ الصّوفِيَّ الدّافِئَ. وَعِنْدَما فَتَحَ الْبابَ تَوَقَّفَ قائِلاً: سُبْحانَ اللّهِ ! ما أَجْمَلَ هَذا الْمَنْظَرَ! الأَرْضُ بِساطٌ أَبْيَضُ. عادَ أَبو مُحَمَّدٍ وَأَيْقَظَ أَبْناءَهُ مُنادِيًا: نَزَلَ الثَّلْجُ، تَعالَوْا وَانْظُروا إِلى الثُّلوجِ الْبَيْضاءِ وَهِيَ تَتَساقَطُ. نَهَضَ الأَبْناءُ فَرِحينَ، وَخَرَجوا وَلَعِبوا بِالثَّلْجِ. ثُمَّ صَنَعوا رَجُلاً ثَلْجِيًّا جَميلاً"

| | لا إجابة | غير صحيحة | صحيحة |
|---|---|---|---|
| مَنِ الَّذي اسْتَيْقَظَ في الصَّباحِ الْباكِرِ؟ أبو محمد | | | |
| أَيْنَ أَرادَ أَبو مُحَمَّدٍ الذَّهابَ؟ إلى عمله | | | |
| في أَيِّ فَصْلٍ حَدَثَتِ الْقِصَّةُ؟ في فصل الشتاء | | | |
| كَيْفَ نَهَضَ الأَبْناءُ؟ فرحين | | | |
| اذا صَنَعَ الأَبْناءُ مِنَ الثَّلْجِ؟ رَجُلاً ثَلْجِيًّا جَميلاً | | | |

## القسم 6 - االمالء

قم بإعطاء الطفل قلماً وورقة

🗣 سوف أقرأ عليك جملة قصيرة. أرجوك أصغي إلي جيداً. سوف أقرأ الجملة كاملة مرة واحدة. ثم سوف أقرؤها على أجزاء بحيث تتمكن من كتابة ما تسمعه. سوق أقرؤها مرة ثالثة حتى تتمكن من مراجعة كتابتك. هل فهمت المطلوب؟ حسناً، أصغ:

**اقرأ الجملة الآتية مرة واحدة، كلمة واحدة في كل ثانية.**

🗣 نظرَ وائلٌ إلى النّحلةِ.

اقرأ الجملة مرة ثانية، توقف لمدة 5 ثوان بعد قراءة مجموعة من الكلمات

🗣 [توقف بعد 5 ثوان] نظرَ
🗣 [توقف بعد 5 ثوان] وائلٌ
🗣 [توقف بعد 5 ثوان] إلى
🗣 توقف بعد 5 ثوان] النّحلةِ

انتظر لمدة 15 ثانية (في حال لم ينته الطفل) واقرأ الجملة كاملة.

🗣 نظرَ وائلٌ إلى النّحلةِ .

| الكلمة | صحيح | *اكمل فقط إذا تضمنت الكلمة على خطأ* | | | |
|---|---|---|---|---|---|
| | | حذف | إضافة | *ابدال* | *شكل الحرف* |
| نظرَ | لا.....0<br>نعم.....1<br>لا أعرف أو رفض الإجابة..... 888 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 |
| وائلٌ | لا.....0<br>نعم.....1<br>لا أعرف أو رفض الإجابة..... 888 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 |
| إلى | لا.....0<br>نعم.....1<br>لا أعرف أو رفض الإجابة..... 888 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 |
| النّحلةِ | لا.....0<br>نعم.....1<br>لا أعرف أو رفض الإجابة..... 888 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 | لا.....0<br>نعم.....1 |

# Annex B: **Student Questionnaire**

| المعلومات الدمو فغرا فق ةيق | |
|---|---|
| ا ألسم | |
| قم ال EGRA | |
| رقم المدرسة | |
| إسم المدرسة | |
| الق ة | |
| ل يج ق س | ) ذكر ( )<br>) ـــ الأ ن ش ق |
| العمر | ) _____ ( |
| كم م ق ا إل ق وة وا ل ق وات ك؟ | ) _____ ( |

| ف ل ت الس ة الما ق ة؟ ف أي | الصف االول |
|---|---|
| | الصف ا ا ن |
| | ال ا ة |
| ا الح ز ط ية ق ل الذهاب ا المدرسة؟ هل ف | ق عم |
| | ال |
| | ال ا ة |
| ق ذهب ا المدرسة ف | أم ش س ق ا المدرسة |
| | ام ش س ق مع ا ق ق ا المدرسة |
| | ام ش س ق مع د ق ا ق ا المدرسة |
| | ام ش س ق مع ش س ي ص ا ق ر ا المدرسة |
| | م الت عامة |
| | ق رى _ |
| المعلمة معكم ال ل ية العر ة ق ة ق ق المدرسة؟ هل ق ف | ق عم |
| | ال |
| | ال أعلم |
| | ال ا ة |
| ك ال ية العر ة ق ة ق ق المدرسة؟ هل ق | ق عم |
| | ال |
| | ال أعلم |

| | |
|---|---|
| ي د ك ال ة ال عة العر ة ة المدرسة؟ هل ق | زعم |
| | ال |
| | ال أعلم |
| ي ال عة العر ة ة ة ال رل؟ هل ق حدث مع | زعم |
| | ال |
| | ال أعلم |
| ي ال عة العر ة ة ة ال رل؟ هل ق حدث مع | زعم |
| | ال |
| | ال أعلم |
| ار ال عة العر ة ة ة ال رل؟ هل ق حدثمع | زعم |
| | ال |
| | ال أعلم |
| ت ا حف ال عة العر ة ة ة المدرسة؟ هل و ب د ل ب م | زعم |
| | ال |
| | ال أعلم |
| اع ة ة الم رل؟ هل | زعم |
| | ال |
| | ال أعلم |
| از ة ة الم رل،؟ هل ل | زعم |
| | ال |
| | ال أعلم |
| ال )مو ا ل) ة ة الم رل؟ هل ل ك ق ف | زعم |
| | ال |
| | ال أعلم |
| ف ذ ة ة ال رل؟ هل | زعم |
| | ال |
| | ال أعلم |
| اء ة ة الم رل؟ ل و ب د ك | زعم |
| | ال |
| | ال أعلم |
| اض ة ة ال رل؟ هل لد | زعم |
| | ال |
| | ال أعلم |
| ة او درا ة ار ة الم رل؟ هل ل ك د | زعم |
| | ال |
| | ال أعلم |

| | |
|---|---|
| س ◌ارة ذات د◌ع ر◌اع ◌؟ ه◌ | ◌زعم |
| | ال |
| | ال أعلم |
| ◌ ◌ه◌وتساعد ◌ ◌ ال◌ زرل ال◌ة؟ كم ◌ الو ◌ت ◌ص | لم أ◌ ◌ص ◌ اي و◌ت |
| | ◌عض الو◌ت |
| | ال◌ ◌ر◌ الو◌ت |
| والد◌ك ◌راءة العر◌ ◌ة؟ هل ◌ ◌ | ◌زعم |
| | ال |
| | ال أعلم |
| ◌ع والدك ◌راءة العر◌ ◌ة؟ هل ◌ ◌ | ◌زعم |
| | ال |
| | ال أعلم |
| االب، ال بجد، ال بجدة)◌د ◌صص ◌ ◌ الم◌ زرل؟ هل ◌ ◌أ لك )الم، | ◌زعم |
| | ال |
| | ال أعلم |
| هل ◌ساعدك◌د )االم، االب، ال بجد، ال بجدة) ◌ ◌ اداء الوا◌ب ◌ ◌ ◌ ◌ ◌ ◌ ◌ ال◌ زرل؟ | ◌زعم |
| | ال |
| | ال أعلم |
| ◌ ا◌راد ال◌ألة ◌ ◌ ال◌ زرل؟ ه◌ق ◌رأي | لك ◌وم |
| | ◌ ◌◌ا |
| | ◌دا |
| الوا◌ب ◌ ◌ ◌ ◌ ◌ ◌ ◌ ال◌ زرل؟ ◌ ◌ساعدك ◌ ◌ | |
| | 1خ◌او◌دئ الك الوال◌ن |
| | |
| | ال3◌◌ردد ا◌ر◌ ال◌ألة |
| ال◌راءة ◌الم◌ زرل؟ ه◌ي | ◌زعم |
| | ال |
| | ال أعلم |
| ◌ب ال◌راءة ◌ ◌ المدرسة؟ | ◌زعم |
| | ال |
| | ال أعلم |
| ◌ ◌ ◌سك ◌المدرسة؟ كم مرة ◌◌أ | لك ◌وم |
| | ◌ ◌◌ا |
| | ◌دا |
| ،ه◌وتس◌لك المعلمة ◌ ماذا◌ق ◌رأ )اس◌لة ◌ ال◌ص الم◌وعات، االمور الص◌ ◌ة ) ◌ ◌ المدرسة؟ | ◌زعم |
| | ال |
| | ال أعلم |

| | |
|---|---|
| المعلمة اذا اكن ل[illegible]عو بة [illegible] ال [illegible]راءة؟ ه[illegible] | [illegible]زعم |
| | ال |
| | ال أعلم |
| [illegible]وطلب المعلمة [illegible]كم اللها بة[illegible]كم | لك [illegible]وم |
| | [illegible] [illegible]ا |
| | [illegible]دا |
| [illegible]وادي ال [illegible]راءة اس بة[illegible]وع [illegible]ا؟ كم مرة [illegible] | م[illegible]وان اس[illegible]ها |
| | مرة اس[illegible]ها |
| | ال أذهب ل [illegible]وادي ال [illegible]راءة |
| ال [illegible]راءة ها[illegible]وس [illegible] يحدم ال [illegible]ا بلت ل [illegible]راءة ال [illegible]صص؟ ع [illegible]دما [illegible]وتذهب [illegible] | ه[illegible]أما |
| | [illegible] [illegible]ا |
| | [illegible]دا |
| اس يحدام ال[illegible]ا بلت ل[illegible]علم او ل[illegible]درب ع[illegible] ال[illegible]راءة؟ ه[illegible] | [illegible]زعم |
| | ال |
| | ال أعلم |
| [illegible] بة [illegible]راءة [illegible]صص ع[illegible] ال[illegible]ف او ال [illegible]ا بلت [illegible] بة[illegible] اس يحدام [illegible] [illegible]صص؟ | [illegible]زعم |
| | ال |
| | ال أعلم |
| السهل اس يحدام ال[illegible]ا بلت [illegible]راءة ال[illegible]صص؟ ه[illegible] | [illegible]زعم |
| | ال |
| | ال أعلم |
| ع[illegible] ال[illegible]ا بلت ب[illegible] [illegible]سك؟ هل [illegible]رأت [illegible]صص | زعال[illegible]زعم |
| | يعل ب[illegible]ا ال |
| | ال أعلم |
| [illegible] [illegible]ك ال[illegible]صص ع[illegible] ال[illegible]صة؟ هل اع [illegible] | [illegible]زعم |
| | ال |
| | ال أعلم |
| بلسة ال[illegible]راءة [illegible] ال[illegible]ا بلت، ه[illegible]وس[illegible]ل المعلمة للمساع[illegible] [illegible]دما ال[illegible]ق [illegible]هم لكمة او م[illegible] ال[illegible]صة؟ | [illegible]زعم |
| | ال |
| | ال أعلم |
| [illegible]وتر [illegible]د [illegible]ا بة[illegible]عة [illegible]رأة ال[illegible]صص ع[illegible] ال[illegible]ا بلت او ال[illegible]ف الذا[illegible] ب[illegible]ع[illegible]يها [illegible]ة السنة الدراس[illegible]ة؟ | [illegible]زعم |
| | ال |
| | ال أعلم |
| ه[illegible]وتر [illegible]د االس[illegible]مرا [illegible] [illegible] الذهاب ال[illegible]صة ب[illegible]زا[illegible] [illegible]صص ب[illegible]ع[illegible]يها [illegible]ة العام الدراس[illegible]؟ | [illegible]زعم |
| | ال |
| | ال أعلم |

# Annex C: **Student Questionnaire Results and Composites**

Table C.1: **Language Exposure Composite**

| Questions and Response Options | | Intervention | | Comparison | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| At school, does your teacher speak to you in Arabic? | No | 2 | 0.7 | 1 | 0.4 |
| | Yes | 276 | 99.3 | 245 | 99.6 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At school, do your friends speak to you in Arabic? | No | 1 | 0.4 | 6 | 2.4 |
| | Yes | 277 | 99.6 | 240 | 97.6 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At school, do you speak to your friends in Arabic? | No | 0 | 0.0 | 3 | 1.2 |
| | Yes | 278 | 100.0 | 243 | 98.8 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At home, do you speak to your siblings in Arabic? | None | 1 | 0.4 | 3 | 1.2 |
| | Yes | 277 | 99.6 | 243 | 98.8 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At home, do you speak to the adults in Arabic? | No | 2 | 0.7 | 2 | 0.8 |
| | Yes | 276 | 99.3 | 244 | 99.2 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At school, are there books, magazines, or newspapers in Arabic? | No | 20 | 7.2 | 40 | 16.3 |
| | Yes | 254 | 91.4 | 196 | 79.7 |
| | Don't know | 4 | 1.4 | 10 | 4.1 |

Table C.2: **Socioeconomic Status Composite**

| Questions and Response Options | | Intervention | | Comparison | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| At your house, do you have a radio? | No | 186 | 66.9 | 144 | 58.5 |
| | Yes | 85 | 30.6 | 72 | 29.3 |
| | Don't know | 7 | 2.5 | 30 | 12.2 |
| At your house, do you have a TV? | No | 2 | 0.7 | 5 | 2.0 |
| | Yes | 276 | 99.3 | 241 | 98.0 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At your house, do you have a telephone or mobile phone? | No | 24 | 8.6 | 8 | 3.3 |
| | Yes | 253 | 91.0 | 238 | 96.7 |
| | Don't know | 1 | 0.4 | 0 | 0.0 |
| At your house, do you have a smartphone? | None | 26 | 9.4 | 55 | 22.4 |
| | Yes | 251 | 90.3 | 189 | 76.8 |
| | Don't know | 1 | 0.4 | 2 | 0.8 |
| At your house, do you have electricity? | No | 3 | 1.1 | 1 | 0.4 |
| | Yes | 275 | 98.9 | 245 | 99.6 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| Do you have a toilet inside your house? | No | 1 | 0.4 | 0 | 0.0 |
| | Yes | 277 | 99.6 | 246 | 100.0 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| At your house, do you have a bicycle or motorcycle? | No | 175 | 62.9 | 140 | 56.9 |
| | Yes | 101 | 36.3 | 106 | 43.1 |
| | Don't know | 2 | 0.7 | 0 | 0.0 |
| At your house, do you have a four-wheeler (car, truck, 4x4, or tractor)? | No | 131 | 47.1 | 142 | 57.7 |
| | Yes | 145 | 52.2 | 104 | 42.3 |
| | Don't know | 2 | 0.7 | 0 | 0.0 |
| Last night, how much time did you spend on household chores? | Some | 23 | 8.3 | 9 | 3.9 |
| | None | 124 | 44.6 | 99 | 43.0 |
| | A lot | 131 | 47.1 | 122 | 53.0 |
| Can your mother read in Arabic? | No | 6 | 2.2 | 11 | 4.5 |
| | Yes | 272 | 97.8 | 235 | 95.5 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| Can your father read in Arabic? | No | 9 | 3.2 | 12 | 4.9 |
| | Yes | 268 | 96.4 | 234 | 95.1 |
| | Don't know | 1 | 0.4 | 0 | 0.0 |

Table C.3: **Family Reading Support Composite**

| Questions and Response Options | | Intervention | | Comparison | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Does someone from home (parent, sibling, or grandparent) read stories to you? | No | 100 | 36.0 | 85 | 34.6 |
| | Yes | 178 | 64.0 | 161 | 65.4 |
| | Don't know | 0 | 0.0 | 0 | 0.0 |
| Does someone from home (parent, sibling, or grandparent) help you with your school work? | No | 72 | 25.9 | 53 | 21.5 |
| | Yes | 205 | 73.7 | 193 | 78.5 |
| | Don't know | 1 | 0.4 | 0 | 0.0 |
| How often do you read with a family member at home? | Never | 0 | 0.0 | 5 | 2.5 |
| | Sometimes | 170 | 84.2 | 129 | 64.5 |
| | Every day | 32 | 15.8 | 66 | 33.0 |
| At home, who most often helps you with your reading or your homework? | I usually do not get help with reading or homework at home | 46 | 16.5 | 33 | 13.4 |
| | One or both parents | 166 | 59.7 | 147 | 59.8 |
| | Brother or sister | 66 | 23.7 | 65 | 26.4 |
| | Other family member (grandparents, aunts, or uncles) | 0 | 0.0 | 1 | 0.4 |

Table C.4: **Teacher Reading Support Composite**

| Questions and Response Options | | Intervention | | Comparison | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| At school, does your teacher ask you questions about what you are reading? | No | 42 | 15.1 | 54 | 22.0 |
| | Yes | 234 | 84.2 | 190 | 77.2 |
| | Don't Know | 2 | 0.7 | 2 | 0.8 |
| Does your teacher help you when you are unable to read something? | No | 40 | 14.4 | 35 | 14.2 |
| | Yes | 238 | 85.6 | 210 | 85.4 |
| | Don't Know | 0 | 0.0 | 1 | 0.4 |
| How often does your teacher asks you to write in school? | Never | 5 | 1.8 | 0 | 0.0 |
| | Sometimes | 155 | 55.8 | 111 | 45.1 |
| | Every day | 118 | 42.4 | 135 | 54.9 |

Table C.5: **Disposition to Reading Composite**

| Questions and Response Options | | Intervention | | Comparison | |
|---|---|---|---|---|---|
| | | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Do you like reading at home? | No | 2 | 0.7 | 5 | 2.0 |
| | Yes | 276 | 99.3 | 240 | 97.6 |
| | Don't know | 0 | 0.0 | 1 | 0.4 |
| Do you like reading at school? | No | 0 | 0.0 | 4 | 1.6 |
| | Yes | 278 | 100.0 | 241 | 98.0 |
| | Don't know | 0 | 0.0 | 1 | 0.4 |
| At school, how often do you read books quietly by yourself? | Never | 20 | 7.2 | 31 | 12.6 |
| | Sometimes | 163 | 58.6 | 129 | 52.4 |
| | Every day | 95 | 34.2 | 86 | 35.0 |

Table C.6: **Engagement with Project Composite**

| Questions and Response Options | | Intervention | |
|---|---|---|---|
| | | Frequency | Percentage (%) |
| How often do you go to literacy group sessions in an average week? | I don't go to literacy club | 5 | 1.8 |
| | Once a week | 24 | 8.6 |
| | Twice a week | 249 | 89.6 |
| When you go to literacy group sessions, do you use the tablet to read stories? | Never | 3 | 1.1 |
| | Sometimes | 19 | 6.8 |
| | Always | 256 | 92.1 |
| Do you like using the tablet to learn or practice reading? | No | 1 | 0.4 |
| | Yes | 275 | 98.9 |
| | Don't know | 2 | 0.7 |
| Have you read stories on a phone or tablet before using the Qysas platform? | No | 160 | 57.6 |
| | Yes | 112 | 40.3 |
| | Don't know | 6 | 2.2 |
| Is it easy to use the tablet to read the stories? | No | 7 | 2.5 |
| | Yes | 269 | 96.8 |
| | Don't know | 2 | 0.7 |
| Did you read the stories on the tablet on your own? | Mostly No | 7 | 2.5 |
| | Mostly Yes | 269 | 96.8 |
| | Don't know | 2 | 0.7 |
| Did you like the stories you read on the tablet? | No | 2 | 0.7 |
| | Yes | 272 | 97.8 |
| | Don't know | 4 | 1.4 |
| During literacy group sessions, do you ask for help when you do not know a word or meaning of a story? | No | 40 | 14.4 |
| | Yes | 235 | 84.5 |
| | Don't know | 3 | 1.1 |
| Do you use the Qysas platform outside of class? | No | 233 | 83.8 |
| | Yes | 42 | 15.1 |
| | Don't know | 3 | 1.1 |
| Do you want to continue reading stories on the tablet or mobile phone at home even though the school year is over? | No | 14 | 5.0 |
| | Yes | 260 | 93.5 |
| | Don't know | 4 | 1.4 |
| Do you want to continue going to the literacy group sessions even though the school year is over? | No | 6 | 2.2 |
| | Yes | 270 | 97.1 |
| | Don't know | 2 | 0.7 |

# Annex D: **EGRA Descriptive Statistics and Additional Tables**

Table D.1: **Letter Sound Identification (CLSPM)**

| Group | *N/n* | Baseline | | | Endline | | | Gain from Baseline to Endline |
|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Zero Score (%) | Mean | SD | Zero Score (%) | |
| Comparison | 251 | 22.5 | 19.8 | 19.5% | 31.7 | 26.0 | 21.1% | 9.2 |
| Intervention | 285 | 24.8 | 17.6 | 10.9% | 33.9 | 26.6 | 21.8% | 9.1 |
| Total: All Students | 536 | 23.8 | 18.7 | 14.9% | 32.9 | 26.3 | 21.5% | 9.2 |

Table D.2: **Syllable Identification (CSSPM)**

| Group | *N/n* | Baseline | | | Endline | | | Gain from Baseline to Endline |
|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Zero Score (%) | Mean | SD | Zero Score (%) | |
| Comparison | 251 | 12.4 | 12.8 | 21.1% | 23.1 | 18.1 | 15.1% | 10.8 |
| Intervention | 285 | 15.5 | 13.1 | 14.0% | 29.0 | 19.0 | 12.3% | 13.5 |
| Total: All Students | 536 | 14.0 | 13.1 | 17.4% | 26.3 | 18.8 | 13.6% | 12.2 |

Table D.3: **Nonword Reading (CNWPM)**

| Group | *N/n* | Baseline | | | Endline | | | Gain from Baseline to Endline |
|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Zero Score (%) | Mean | SD | Zero Score (%) | |
| Comparison | 251 | 3.7 | 5.1 | 46.6% | 6.9 | 8.0 | 41.8% | 3.2 |
| Intervention | 285 | 5.1 | 6.2 | 35.1% | 9.0 | 9.8 | 40.7% | 3.8 |
| Total: All Students | 536 | 4.5 | 5.8 | 40.5% | 8.0 | 9.1 | 41.2% | 3.5 |

Table D.4: **ORF (CWPM)**

| Group | *N/n* | Baseline | | | Endline | | | Gain from Baseline to Endline |
|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Zero Score (%) | Mean | SD | Zero Score (%) | |
| Comparison | 251 | 5.3 | 7.1 | 39.0% | 18.6 | 16.8 | 19.1% | 13.3 |
| Intervention | 285 | 8.0 | 9.9 | 26.7% | 24.6 | 18.6 | 12.6% | 16.6 |
| Total: All Students | 536 | 6.8 | 8.8 | 32.5% | 21.8 | 18.0 | 15.7% | 15.0 |

Table D.5: **Reading Comprehension (Correct out of Five)**

| Group | *N/n* | Baseline | | | Endline | | | Gain from Baseline to Endline |
|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Zero Score (%) | Mean | SD | Zero Score (%) | |
| Comparison | 251 | 0.2 | 0.6 | 81.3% | 1.0 | 1.3 | 49.4% | 0.8 |
| Intervention | 285 | 0.4 | 0.9 | 76.8% | 1.4 | 1.4 | 32.3% | 1.0 |
| Total: All Students | 536 | 0.3 | 0.7 | 78.9% | 1.2 | 1.4 | 40.3% | 0.9 |

Table D.6: **Listening Comprehension (Correct out of Five)**

| Group | *N/n* | Baseline | | | Endline | | | Gain from Baseline to Endline |
|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Zero Score (%) | Mean | SD | Zero Score (%) | |
| Comparison | 251 | 1.6 | 1.1 | 21.1% | 1.9 | 1.3 | 19.5% | 0.4 |
| Intervention | 285 | 2.0 | 1.2 | 15.4% | 2.1 | 1.3 | 14.0% | 0.1 |
| Total: All Students | 536 | 1.8 | 1.2 | 18.1% | 2.0 | 1.3 | 16.6% | 0.2 |

Table D.7: **Average Gain Scores by Gender and Group**

| Subtask | Girls | | | | | | Boys | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Comparison | | | Intervention | | | Comparison | | | Intervention | | |
| | *n* | Mean | SD | *n* | Mean | SD | *n* | Mean | SD | *n* | Mean | SD |
| Letter sound identification (CLSPM) | 125 | 7.5 | 21.0 | 82 | 10.2 | 25.2 | 126 | 10.9 | 29.8 | 203 | 8.7 | 25.7 |
| Syllable identification (CSSPM) | 125 | 6.4 | 12.2 | 82 | 10.0 | 11.9 | 126 | 15.2 | 19.0 | 203 | 14.9 | 13.4 |
| Nonword reading (CNWPM) | 125 | 1.5 | 6.8 | 82 | 2.1 | 7.4 | 126 | 4.9 | 8.7 | 203 | 4.5 | 8.4 |
| Oral reading fluency (CWPM) | 125 | 9.4 | 13.6 | 82 | 14.3 | 15.4 | 126 | 17.1 | 16.1 | 203 | 17.5 | 13.1 |
| Reading comprehension (correct out of five) | 125 | 0.6 | 1.2 | 82 | 1.0 | 1.3 | 126 | 0.9 | 1.3 | 203 | 1.0 | 1.2 |
| Listening comprehension (correct out of five) | 125 | 0.2 | 1.3 | 82 | 0.0 | 1.4 | 126 | 0.6 | 1.7 | 203 | 0.2 | 1.4 |

Table D.8: **Percentage of Students Receiving Zero Scores by Gender and Group**

| Subtask | Girls | | | | Boys | | | |
|---|---|---|---|---|---|---|---|---|
| | Comparison | | Intervention | | Comparison | | Intervention | |
| | *n* | Zero Scores (%) | *n* | Zero Scores (%) | *n* | Zero Scores (%) | *n* | Zero Scores (%) |
| Letter sound identification (CLSPM) | 125 | 25.6% | 82 | 25.6% | 126 | 16.7% | 203 | 20.2% |
| Syllable identification (CSSPM) | 125 | 21.6% | 82 | 17.1% | 126 | 8.7% | 203 | 10.3% |
| Nonword reading (CNWPM) | 125 | 51.2% | 82 | 54.9% | 126 | 32.5% | 203 | 35.0% |
| Oral reading fluency (CWPM) | 125 | 29.6% | 82 | 19.5% | 126 | 8.7% | 203 | 9.9% |
| Reading comprehension (correct out of five) | 125 | 62.4% | 82 | 35.4% | 126 | 36.5% | 203 | 31.0% |
| Listening comprehension (correct out of five) | 125 | 24.8% | 82 | 12.2% | 126 | 14.3% | 203 | 14.8% |

# Annex E: **Correlation Analysis Results**

Table E.1: **Project Exposure and EGRA Subtask Gains Correlation Analysis Results**

| Subtask | Mean | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Letter sound identification (CLSPM) | 9.2 | — | | | | | | | |
| 2. Syllable identification (CSSPM) | 12.2 | — | — | | | | | | |
| 3. Nonword reading (CNWPM) | 3.5 | — | — | — | | | | | |
| 4. Oral reading fluency (CWPM) | 15.0 | — | — | — | — | | | | |
| 5. Reading comprehension (correct out of five) | 0.9 | — | — | — | — | — | | | |
| 6. Listening comprehension (correct out of five) | 0.2 | — | — | — | — | — | — | | |
| 7. Number of books read per student | 104.8 | -0.028 | .128* | .144* | .264** | .263** | -0.056 | — | — |
| 8. Student Qysas reading level | 5.0 | -0.033 | 0.088 | 0.082 | .207** | .212** | -0.050 | — | — |

*N*=261; * sig. at p<0.05; ** sig. at p<0.001

Table E.2: **Composite and EGRA Subtask Gains Correlation Analysis Results**

| Subtask | Mean | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Letter sound identification (CLSPM) | 9.2 | — | | | | | | | | | |
| 2. Syllable identification (CSSPM) | 12.2 | — | — | | | | | | | | |
| 3. Nonword reading (CNWPM) | 3.5 | — | — | — | | | | | | | |
| 4. Oral reading fluency (CWPM) | 15.0 | — | — | — | — | | | | | | |
| 5. Reading comprehension (correct out of five) | 0.9 | — | — | — | — | — | | | | | |
| 6. Listening comprehension (correct out of five) | 0.2 | — | — | — | — | — | — | | | | |
| 7. Socioeconomic status composite (*N*=524) | 8.3 | -0.067 | 0.011 | -0.003 | .107* | .097* | 0.01 | — | — | — | — |
| 8. Family reading support composite (*N*=409) | 3.3 | 0.018 | 0.067 | 0.082 | .111* | 0.075 | 0.042 | — | — | — | — |
| 9. Teacher reading support composite (*N*=524) | 2.4 | -0.013 | 0.017 | -0.017 | 0.006 | -0.04 | .093* | | | | |
| 10.Disposition to reading composite (*N*=524) | 2.6 | -0.036 | 0.056 | 0.035 | 0.066 | .093* | 0.032 | — | — | — | — |

* sig. at p<0.05

# Annex F: **EGRA Reliability Results**

Table F.1: **Reliability Results for Baseline EGRA**

| Subtask | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|
| Letter sound identification (CLSPM) | 0.638 | 0.845 |
| Syllable identification (CSSPM) | 0.840 | 0.819 |
| Nonword reading (CNWPM) | 0.844 | 0.825 |
| Oral reading fluency (CWPM) | 0.834 | 0.807 |
| Reading comprehension (correct out of five) | 0.642 | 0.844 |
| Listening comprehension (correct out of five) | 0.459 | 0.904 |
| | EGRA Coefficient Alpha | 0.863 |

Table F.2: **Reliability Results for Endline EGRA**

| Subtask | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|
| Letter sound identification (CLSPM) | 0.390 | 0.868 |
| Syllable identification (CSSPM) | 0.824 | 0.798 |
| Nonword reading (CNWPM) | 0.758 | 0.809 |
| Oral reading fluency (CWPM) | 0.816 | 0.780 |
| Reading comprehension (correct out of five) | 0.721 | 0.803 |
| Listening comprehension (correct out of five) | 0.439 | 0.859 |
| | EGRA Coefficient Alpha | 0.847 |

# Annex G: **Sample Details**

Table G.1: **2016-17 Academic Year Cohort Intervention School Sample Details**

| School | Total Students in Grade 2 | Intervention Students by Section | | Total Intervention Students | Selection Process |
|---|---|---|---|---|---|
| | | Section A | Section B | | |
| A | 346 | 35 | 35 | 70 | Only two teachers who were trained last year were willing to implement the sessions with up to 35 students. JEI randomly selected students. |
| B | 122 | 28 | | 28 | Teacher was only willing to take 30 students; two students dropped out. JEI randomly selected 30 from section A. |
| C | 29 | 27 | | 27 | All grade two students were selected. Two students left the school. |
| D | 57 | | 29 | 29 | One section was selected based on the teachers' willingness. |
| E | 64 | 32 | | 32 | One section was selected based on the teachers' willingness. |
| F | 56 | 16 | 18 | 34 | Two sections were selected based on the teachers' willingness. One from each section left the school. |
| G | 78 | 35 | | 35 | One section was selected based on the teachers' willingness. |
| H | 41 | | 20 | 20 | One section was selected based on the teachers' willingness. |
| I | 100 | 15 | 14 | 29 | Principal only allowed 30 students to participate. JEI randomly selected students from both sections. Both classroom teachers were new to the school so technicians implemented the project instead. |
| J | 115 | 35 | | 35 | One section was selected based on the teacher's willingness. |