

POLICY BRIEF

National Early Grade Literacy and Numeracy Survey— Jordan: 2013/2014 Intervention Pilot Program

EdData II

I Introduction and Approach

During the spring of 2012, the Ministry of Education (MoE), in partnership with the United States Agency for International Development (USAID), conducted a National Early Grade Literacy and Numeracy Survey in Jordan. This 2012 National Survey very clearly revealed that not enough Jordanian children in the early grades were not reading with comprehension or doing mathematics with understanding. In addition, students were not receiving sufficient instruction in foundational reading and mathematics skills.

The intervention was implemented during the 2013/2014 school year by more than 400 teachers in 347 classrooms across 43 schools, reaching approximately 12,000 students in Jordan.

Against this background, it was decided, after discussions with the MoE Curriculum Team and the Senior Reading and Mathematics Supervisors, to develop an intervention pilot research program that would support teachers in providing deliberate, structured, and developmentally appropriate daily practice in foundational skills for reading and mathematics.

Teachers would be asked to spend the first 15 minutes of every reading and mathematics lesson to revisit and reinforce foundational skills. Students would experience this activity as part of the classroom program—as a routine “warm-up” activity to the curriculum’s lesson for the day. Through the routine, teachers would also be introduced to more research-based pedagogical practices.

The intervention was implemented during the 2013/2014 school year by more than 400 teachers in 347 classrooms across 43 schools, reaching approximately 12,000 students in Jordan and involved a treatment group and a control group.

To measure the impact of the intervention pilot, an endline survey using two assessments (the Early Grade Reading Assessment [EGRA] and the Early Grade Mathematics Assessment [EGMA]) was

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conducted in May 2014. Data was gathered from a wide range of sources, to gain a fuller understanding of the impact of the intervention and the variables that influence the chances of the intervention's success. The endline survey could then be compared to a baseline survey, conducted before the intervention, to determine findings.

II Findings

Composite reading and mathematics scores were created to determine the aggregate effect of the intervention. These scores were used to classify the students as (1) non-readers or beginning readers and non-mathematicians or early mathematicians (category 1), (2) emergent readers and emergent mathematicians (category 2), and (3) readers and mathematicians (category 3). The figure below displays the changes in these categories from 2012 to 2014, both for treatment and for control schools.

Overall treatment effect for EGRA and EGMA categories

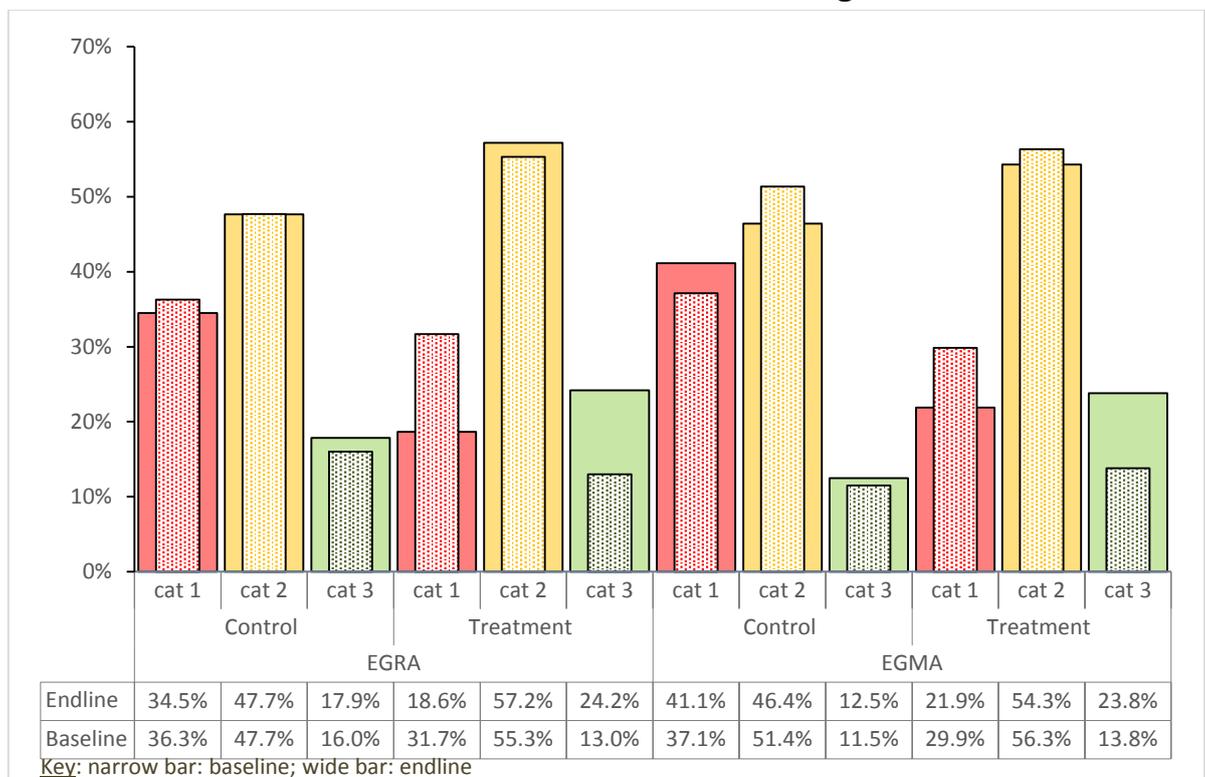


Figure I shows that, while the percentage of non-readers or beginning readers and non-mathematicians or early mathematicians remains relatively consistent across years for the control group, there are large reductions in these categories in treatment schools (from 32% to 19% in reading and 30% to 22% in mathematics). Additionally, while the proportion of readers and mathematicians remains constant for control schools, both proportions increase significantly in

treatment schools (13% to 24% in reading and 14% to 24% in mathematics). These results are extremely promising, particularly because the intervention was implemented for only one school year.

Analysis of the EGRA results shows that the intervention had a significant impact on treatment school students for every EGRA measure. The largest effect was found for letter sounds, for which the intervention was determined to provide a nearly 14 point increase in the percentage of correct responses. Analysis of the EGMA results shows that scores were significantly increased by the intervention, some by as much as 15.5%.

An examination of the impacts of this intervention on male and female students reveals that, while there were no significant gains in achievement for male students, significant gains were seen by female students. Furthermore, students in all-girls schools performed better than students in mixed-gender schools, who in turn performed better than students in all-boys schools. These differences were statistically significant on almost all parts of the EGRA and EGMA.

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Key factors and their influence on results

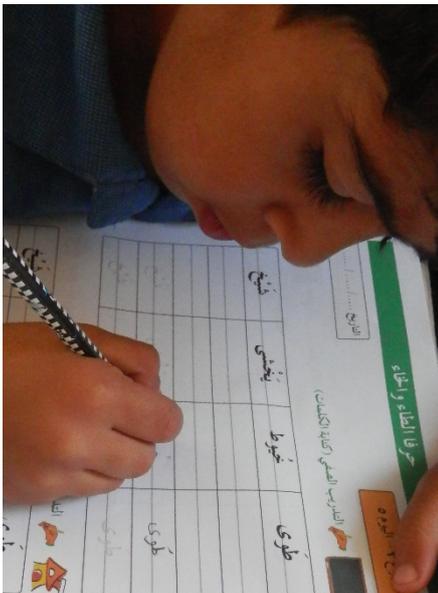
To establish the factors that are associated with the top performing classrooms and districts, top performing classrooms are defined as those with at least a 10% increase in readers (or mathematicians) in grade 2 or at least a 20% increase in grade 3 readers (or mathematicians). Top performing districts are defined as the four out of the 12 intervention districts with the largest increases in readers or mathematicians from 2012 to 2014.

Analysis of the variables revealed that:

- 93% of teachers with frequent supervisor visits were in top performing classrooms for reading (i.e., largest increase in readers), as compared to only 41% of those teachers in classrooms who were visited by supervisors fewer than 16 times.
- 63% of teachers who attended both of the provided training sessions were in top performing classrooms for mathematics, as compared to only 11% of those teachers in classrooms who did not attend both trainings.
- 65% of the reading and 89% of the mathematics classes in all-girls schools were in top performing classrooms.
- 84% of the classes in which teachers marked all of the work in the student workbook sessions were in top performing classrooms for mathematics.

- 80% of the classes in which teachers monitored student understanding by asking for further explanations were in top performing classrooms for mathematics.
- 69% of the mathematics classrooms in which teachers followed the intervention notes and routines with fidelity were top performing.

Teachers were interviewed about their experience with the intervention. On balance, teacher respondents had more to say that was positive than negative. On the positive side, teachers asserted that students enjoyed the intervention project and training, that it developed thinking skills and student skills generally, and had a positive impact on learning. It also led to an improvement in teachers' skills made them feel supported by their supervisors. On the negative side, teachers pointed out that the project increased teachers' workloads and required too much time or effort to keep up with instructional demands. Despite their overwhelmingly positive response to the intervention, teachers tended not to be in favor of continuing the program, by a margin of almost five to one. The teachers' experience of the project as an add-on, and hence an additional burden as reported in discussions and during training, may provide some explanation for this finding.



III Lessons Learned

The intervention has demonstrated unequivocally that it is possible to increase the number of readers and mathematicians in early grade classrooms by providing deliberate, structured, and developmentally appropriate practice in foundational skills for reading and mathematics. The implication may well be that there is much to be gained by an intervention that systematically addresses only those key elements, instead of replacing the entire school program.

The following lessons learned can inform future interventions and improve chances of success.

Gender. Future intervention projects will need to better understand the gender dynamics of Jordanian schools and to make conscious design decisions to ensure that boys benefit as much from interventions as girls do.

Classroom support. During this intervention, not all supervisors (teacher coaches) were able to visit classes as often as the intervention hoped that they would (once every two weeks). Future intervention projects will need to establish mechanisms for maximizing the ability of teachers' coaches to attend to this work.

Teacher training. Teachers who attended more of the training had a greater proportion of readers and mathematicians in their classes than teachers who attended less training. Future intervention projects will need to examine the factors that prevent teachers from attending the training as expected and to find ways of resolving these.

Translating the vision of the intervention into practice.

Teachers experienced difficulties in assimilating new pedagogies into their practice. Such difficulties reflected not so much fundamental problems with the intervention, but rather mismatches between the intervention vision(s) and teachers' predominant teaching styles and approaches. Future intervention projects will need to explore different ways of introducing teachers to different pedagogies, including the role of web-based communities of practice.

The intervention achieved exactly what it set out to do. While there were virtually no gains in control schools from 2012 to 2014, there were significant gains across treatment schools in reducing the proportion of the lowest performers and increasing the proportion of the highest performers. These results are extremely promising, particularly because the intervention was implemented for only one school year.

IV Conclusions/Recommendations

The results show that the intervention achieved exactly what it set out to do. While there were virtually no gains in control schools from 2012 to 2014, there were significant gains across treatment schools in reducing the proportion of the lowest performers and increasing the proportion of the highest performers. These results are extremely promising, particularly because the intervention was implemented for only one school year.

Key recommendations include:

- A qualitative study should be conducted to assist the MoE and other stakeholders to better understand why boys do not benefit from schooling in the early years to the same extent as girls.
- The MoE could explore the feasibility of using only female teachers and of having only mixed-gender and all-girls schools in the early grades.
- The number of teachers for which each supervisor is responsible should be reduced, to allow more effective mentoring and support.
- Teachers need to be rewarded for participating in in-service training activities either directly as a financial reward, or indirectly as credits earned as part of a continuing professional development program.
- Intervention implementers need to take care to ensure that teachers experience the intervention activities as directly linked to the curriculum and not as add-ons to their work.

- Teachers should be encouraged to commit to exploring new methodologies by sharing, through various media, their success stories about program impact. Video vignettes that demonstrate the desired methodologies being successfully implemented by teachers in typical classrooms could also be developed.

