

MORPHOLOGICAL AWARENESS **EXECUTIVE SUMMARY**



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INTRODUCTION

This report discusses the findings of the Morphological Awareness pilot, implemented by the Queen Rania Foundation in partnership with the Queen Rania Teacher Academy and the Ministry of Education.

STUDY AIMS AND BACKGROUND

The main goal of this pilot was to improve Arabic language outcomes of 2nd to 5th grade students; mainly their comprehension skills, by introducing explicit instruction on Arabic morphemes. The intervention trained teachers on how to explicitly teach their students morphemes in Arabic, as morphemes are typically taught using an implicit approach through pattern recognition in Jordan's national curriculum for the early grades. Supplementary textbooks to support the existing curriculum were also developed and provided to teachers and students as part of the pilot, the content of which is outlined in the pilot component section.

As such, the Morphological Awareness pilot was designed to feed into the 'Modernization of the Basic and Secondary Curriculum' project, which is part of the National Human Resources and Development strategy (HRD) 2016 - 2025.

EVALUATION METHOD

To evaluate the pilot, a randomized control trial was conducted in 20 schools for one academic year (September 2017- May 2018), with only 10 of those schools receiving the intervention. A mixed methods approach; consisting of assessments, perception surveys, and focus groups, was used to evaluate the pilot and to test if the theory of change held when it came to implementation.

This executive summary will triangulate the findings from the qualitative and quantitative studies to provide a comprehensive evaluation of the pilot. First, the summary will describe the pilot components, and will then discuss the findings from both studies.



PILOT **COMPONENTS**

EVALUATION TOOLS

The tools used to evaluate the pilot included student assessments, with both treatment and control schools. Satisfaction surveys with regard to students' perception of the Arabic class were administered to treatment school students only. Focus groups were conducted with the treatment school teachers to gain qualitative insights on their perceptions of the pilot. Finally, classroom observations of the treatment schools were held to observe teachers' implementation of the pilot content.

TEACHER TRAINING

Treatment school teachers attended a training which trained them on a pedagogical approach in teaching Arabic morphemes. This included training teachers on how to explicitly instruct morphemes in the classroom, in an engaging and age-appropriate manner.

PILOT CONTENT

Supplementary curricula, including teacher guides, student booklets, and flashcards, were developed as part of the pilot to support teachers' explicit instruction of morphemes in Arabic, and to provide students with an opportunity to practice applying morphemes. Together, the training and pilot content constituted the treatment in this pilot.



FINDINGS

USE OF PILOT MATERIALS

More than 60% of students indicated that they always used the pilot content (i.e. booklets in class). Sixty-five percent of students reported they were always given enough time to finish the booklets, and more than 60% of students of both grades reported they always found the workbooks clear. Additionally, 61% and 69% of 4th and 5th graders indicated they always enjoyed using the flashcards. However, only 50% of students were satisfied with the booklets' level of difficulty.

Focus groups with teachers showed that students did not face any challenges while working on the booklets during class. They highlighted how students would prepare for the class, redo the exercises with groups of friends or family, and explain the exercise requirements to other students. Teachers noted that the challenges faced by students during the pilot were a result of students' overall previous low performance and were independent of the supplementary material.

TEACHER-RELATED FINDINGS

Focus groups showed that teachers engaged with and understood the training content. This level of engagement with the training resulted in their understanding of the training content. Teachers' comprehension of the training material and their ability to teach morphemes explicitly in the class was evident during in-class observations.

Perception surveys with students allowed the exploration of the training's impact on teaching practices; treatment school students reported a change in their Arabic teacher's practices. First, treatment students reported higher rates of satisfaction with their teachers than their control counterparts.

Seventy-six percent of treatment students reported that their teachers were always capable of using examples that they could easily follow. Additionally, 66% of treatment students from the 4th and 5th grade reported that their teacher always asked them questions to make sure they were following along. The number of treatment school students who indicated that their teacher always used such examples increased by 9 percentage points between baseline and endline surveys for 2nd and 3rd students, and by 30 percentage points for 4th and 5th grade students.

STUDENT-RELATED FINDINGS

Focus groups highlighted that one of the strongest benefits of the pilot was the change in student behavior and attitude during the class. Teachers highlighted that students became more excited to attend Arabic classes over the year; specifically the morphemes lessons due to the utilization



of exercises and activities in teaching. This excitement resulted in student preparation for classes and greater attentiveness during lessons. Additionally, teacher insights showed that the nature of the supplementary material and exercises allowed for more teamwork amongst students, which was a shift from their usual tasks working alone.

For the low performing students, teachers highlighted an increase in confidence with regard to participating in class and asking higher performing students for help. Teachers also highlighted the higher performing students became comfortable with sharing their knowledge and guiding students during group exercises.

The perception survey corroborated the aforementioned findings regarding changes in student attitudes towards, and behaviors in Arabic class. At endline, around 90% and 95% of 2nd and 3rd grade students and 71% and 65% of 4th and 5th students indicated that their teachers make Arabic class fun.

Eighty-six percent of treatment students of all four grades indicated that they always like to participate in Arabic class. Between baseline and endline there was an 18 percentage point increase in the number of students who indicated that they always like participating in Arabic.

With regard to student outcomes, there was an improvement in student performance at endline as indicated by the administered assessments, including the EGRA^[1] and MoE test. However, the improvement of treatment students was not significantly greater than that of the control students. Considering the student assessments alone, we cannot assess whether the introduced method of teaching morphemes explicitly was more effective than previous methods used.

However, perception surveys with students and focus groups with teachers indicated that the pilot has been helpful in improving students' Arabic learning outcomes. 70% of the treatment students reported that the morphemes pilot helped them learn Arabic. Insights from the teacher focus groups indicated that teachers did notice an improvement in their students' reading skills, ability to form words and sentences, and comprehension of the given lessons due to the pilot. Teachers also highlighted how students' confidence levels had an effect on their performance in class. Teachers believed that when students started overcoming their fear of participation, their participation increased, therefore reflecting on their improving performance.

Teacher responses in focus groups suggested a difference between students based on their performance level. Teachers highlighted that not all students were performing at the same level or learning and improving at the same pace as other students.

The aforementioned findings were not corroborated by the quantitative analysis. To investigate whether either top and/or bottom performing students were more able to benefit more from the pilot, the literacy outcomes from both groups were explored. The regression results showed no significant difference between the groups, suggesting that the pilot has not been particularly beneficial to either the top or low performing students. Therefore, teachers' comments during focus groups with regard to difference in student performance could be due to students' abilities irrespective of the pilot.

[1] The Early Grade Reading Assessment (EGRA) was developed by RTI International to assess students' foundational literacy skills. The Ministry of Education (MoE) test was developed by a task force at the ministry to assess students' Arabic outcomes.



CONCLUDING REMARKS

SUMMARY

There is no clear-cut conclusion with regard to the impact of the pilot on improving student comprehension to a greater degree than other methods of teaching. The quantitative research showed that although there were increases in treatment students' literacy outcomes, this was not significantly greater than control students. With that, it cannot be inferred whether teaching morphemes explicitly is more beneficial for student learning. However, findings from the perception survey showed that students were more engaged with the lessons, but this could simply be due to a more engaging pedagogical approach used by the trained teachers. Findings from the qualitative research indicated the teachers were satisfied with the pilot and believed that their students had benefited from it. Future research could explore running a more comprehensive RCT, with several treatment groups; including a phonological awareness intervention group, a pedagogical teacher training group without a language intervention, to better explore the sole influence of teaching morphemes explicitly in class.

LIMITATIONS

There are several reasons why the quantitative research may not have found any significant difference in student outcomes in comparison to the control group, including the small sample size, selection bias of teachers and classrooms, and the assessment tools used to assess student learning outcomes.

Although the schools were randomly chosen, the principals could ultimately refuse participation, they could choose which teachers they would like to nominate for the training, and which class sections were to be included in the pilot. The principals may have chosen the teachers and students that were performing better and with better motivation. This reduces the generalizability of the results to the whole of Jordan.

The power calculations yielded large minimum detectable effects for this pilot, which were much larger than similar interventions exploring the influence of teaching morphemes explicitly. Our large minimum detectable effects are due to the small sample size and cluster size. Therefore, it was highly unlikely that this study will find significant evidence regarding the pilot's impact on literacy in comparison to other teaching methods.



The assessments used may not have been the most accurate measures of the pilot's goals. If the pilot is to be rerun in the future, we would recommend hiring an assessment expert to map out what was being taught and what was measured in the assessments to see if the assessments were capable of capturing the change in literacy.

During the focus groups, there was very limited probing on student outcomes. In future studies, additional questions on the teachers' perception of the improvement of student learning outcomes should be included.

In conclusion, further exploration and a more comprehensive process evaluation on the influence of morphemes and how to integrate it in the Arabic curriculum need to take place before such a pilot is considered for scale.

