Scaling Up an Early Literacy Intervention

Authors: Pamela Jakiela (Center for Global Development, BREAD, IZA), Heather Knauer (University of Michigan School of Social Work), Jamie McCasland (University of British Columbia), Owen Ozier (World Bank Development Research Group, BREAD, IZA)

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Abstract: The lack of adequate literacy preparation is a key risk factor for poor performance in primary schools worldwide (Behrman et al, 2006). Even in Kenya, one of the best-educated populations in Sub-Saharan Africa, only 34% of preschool children meet language and numeracy development milestones (Kenya National Bureau of Statistics, 2013). The proposed research builds on a cluster-randomized evaluation of an early literacy intervention that combined dialogic reading training for parents of young children with the distribution of illustrated storybooks. Participation in the early literacy program was over 88% of targeted households under intensive researcher-managed recruitment, with 91% of participants being mothers and other female caregivers. Short-term results show that the intervention improved language development and school-readiness, particularly for children of illiterate primary caregivers. The present trial is aimed at identifying pathways for effective scale-up by testing 1) whether a bundled father encouragement recruitment strategy can increase participation of fathers and other male caregivers, and 2) whether public pre-primary school teachers can improve participation by illiterate parents whose children would most benefit from the program. The results of the trial will inform potential integration of the intervention into ongoing reforms of the pre-primary curriculum and come at the request of county-level government officials who are enthusiastic about the program.

Project Timeline:
Randomization: October 2019
Trial Registration: November 2019
Father Recruitment Intervention Start Date: November 2019
Teacher Mobilization Strategy Intervention Start Date: January 2020
Dialogic Reading Trainings and Endline Data Collection: January-February 2020
Data Analysis: February-March 2020

1 Research Design

1.1 Sample

The present study builds on a cluster randomized evaluation of an early literacy program that combined dialogic reading training for caregivers of young children with the distribution of illustrated storybooks (AEARCTR-0004425), which was implemented in 73 school catchment areas in Kisumu County, Kenya from 2014-2019. The Encouraging Multilingual Early Reading as the Groundwork for Education (EMERGE) study defined these catchment areas as 750 meters from the public primary schools in the area. The 73 catchment areas were randomized into 36 treatment and 37 control schools. For the present study of mobilization and recruitment strategies to inform scale-up, 2 of the 73 school communities were used to pilot the interventions. Our sample is composed of the remaining 71 school communities.

As part of the intervention design of the parent study, caregivers in the 2,013 participating households were informed that after the completion of the study a second round of storybook distribution and dialogic reading trainings would be made available to parents of small children in both treatment and control communities. The present study targets these EMERGE households as well as other households in school communities with children between the ages of 2 and 6.

1.2 Randomization

In the parent study, the community-level randomization was stratified by whether the baseline survey took place before or after Kenya's 2017 presidential election[1], by school quality (as measured by mean score on the primary school leaving exam in the year prior to the intervention), by large/small community size, and by geography (the pre-election group was split in two by region), leading to 12 strata.

The present study further stratifies by treatment and control status in the parent study, ensuring that mobilization treatment analysis is not confounded by EMERGE treatment status. School communities were cross-randomized to fall into one of four categories: father recruitment and teacher mobilization strategy, father recruitment only, teacher mobilization strategy only, or neither. No re-randomization was done.

1.3 Intervention Protocol in All Communities

In each of the 71 school communities, the intervention process begins when field staff meet with village elders, assistant chiefs, and school head teachers to inform them of upcoming project activities and to enlist village elders in mobilizing parents and other caregivers of young children to attend a community meeting (baraza) to discuss the program. Preliminary discussions are followed by community meetings, which are then followed by the dialogic reading trainings, where storybook distribution also takes place. Village elders are also enlisted to assist in mobilizing caregivers of young children to attend the dialogic reading training itself, and paid a small stipend at both the community meeting and the reading training to compensate them for their time, as is customary in this context.

Our sample frame as communicated during these meetings is as follows: 1-2 parents or other caregivers of children aged 2 to 6 are invited to attend the training if they have a child who attends the school or if the school is the closest government primary school to their home. In communities that were part of the EMERGE treatment group, the field team ensures that storybooks are not

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[1]Baseline surveys occurred in 45 communities before August 2017 and in 28 communities after October 2017.

duplicates of those distributed in 2018 and communicates that households that already participated in the 2018 training remain eligible.

1.3.1 Father Recruitment Intervention

In father recruitment school communities, a bundle of father recruitment strategies are deployed in the community meeting and promotional materials to promote father inclusiveness and encourage fathers and other male caregivers to attend the training. The bundle includes: (1) an emphasis on the role of fathers in the development of young children in the community meeting script, (2) a role model presentation in which a member of the field staff who is a father himself talks about his experience reading with his young children at the community meeting, (3) an illustration of a father reading with his child on the training flyer, and (4) announcing at the community meeting that one father will be randomly chosen at the training to receive a free EMERGE project t-shirt. Assistant chiefs, village elders, teachers, and community members who attend the community meeting are potentially additional conduits for encouraging fathers and other male caregivers in the community to attend the training.

1.3.2 Teacher Mobilization Strategy Intervention

In addition to caregiver mobilization through village elders, schools assigned to the teacher mobilization strategy receive an additional intervention designed to enlist early childhood development (ECD) and class 1 teachers in mobilizing caregivers to attend the training. Like village elders, teachers are paid a small stipend for this mobilization assistance, again as is customary in this context.

Field staff brief these teachers on the EMERGE project, including a discussion of the role of parents in facilitating a child's school readiness and a presentation of the midline results of the EMERGE project. These results suggest that illiterate parents may exhibit the largest change in the frequency with which they read to their preschool aged children and that children of illiterate parents may see the largest gains in vocabulary development. Field staff leave teachers with a copy of the brief and with a set of flyers to distribute to parents of eligible children. This intervention is designed in particular to target parents of children who are struggling with literacy skills or who come from vulnerable households.

2 Data

2.1 Attendance Counts

Attendance data includes counts of all parents and caregivers of children aged 2 to 6 who attend the training and the gender of these attendees.

2.2 Exit Survey Data

In addition, after the training, attendees are asked to participate in a short survey consisting of the following: (1) linking (where relevant) back to their EMERGE project household identification number, (2) age and gender of children between the ages of 2 and 6, (3) information on the key motivation for attending the training, (4) information on whether the participant spoke to a teacher at the school about the training, and (5) a short series of questions on beliefs about father caregiving. In addition, attendees for whom the EMERGE project does not already have literacy information are asked to participate in a short literacy test.

2.3 Teacher Data

Information has been collected about ECD and Class 1 teachers at all 71 schools, including teacher gender, tenure at the school, and educational attainment.

2.4 EMERGE Data

Supplementary analysis will make use of extensive data on households, caregivers, and children that were part of the EMERGE project. See AEARCTR-0004425 for a more complete discussion of that data.

3 Outcomes

3.1 Primary Outcomes of Interest

Our primary outcomes of interest are attendance counts, disaggregated by gender and (where exit survey data or EMERGE baseline data is available) by whether the caregiver is literate. In particular, our study is designed to test the following four distinct research questions: (1) Does the father recruitment intervention affect total turnout? (2) Does the teacher mobilization strategy affect total turnout? (3) Does the father recruitment intervention affect turnout of fathers and other male caregivers? and (4) Does the teacher mobilization strategy affect turnout of illiterate parents and other caregivers?

3.2 Secondary Outcomes of Interest

Full attendance counts are natural objects of interest. However, within the EMERGE project sample for whom we have extensive baseline and endline data, it is possible to know much more about one subset of potential attendees. Those households from the EMERGE sample who continue to reside near the school and continue to parent children between the ages of 2 and 6 are prime targets of the program. Using this subset of potential attendees as a denominator, we could estimate how the mobilization treatments affect the fraction of EMERGE sample target households that sent a caregiver to the training, providing a measure of coverage not possible for the full sample. In addition, household and caregiver level analysis could evaluate whether individual households sent a caregiver to the training and whether individual caregivers attended the training. As with attendance counts, we would be interested in caregiver level attendance disaggregated by gender and by whether the caregiver is literate.

To the extent that the teacher mobilization strategy may shift attendance towards parents of students in the school, we could imagine defining an additional attendance count variable for caregivers of children who attend ECD classes at the relevant school.

4 Empirical Analysis

4.1 Primary Analysis

Our primary objects of interest in this study are the effects of each of the father recruitment and teacher mobilization interventions. Therefore, we will estimate the following by OLS:

$$Y_i = \alpha_0 + \alpha_2 F_i + \alpha_1 T_i + \gamma_s + \nu_i \tag{1}$$

where Y_i is the attendance outcome variable, F_i is a treatment dummy equal to one if the school community is assigned to the father recruitment intervention, T_i is a treatment dummy equal to one if the school community is assigned to the teacher mobilization strategy, and γ_s is a vector of fixed effects for randomization strata.

4.2 Secondary Analysis

In addition to the above model, we will consider secondary analysis that tests for interaction effects between the father recruitment intervention and the teacher mobilization strategy.

Analysis using the EMERGE data can test for heterogeneity in treatment effects by community, household, or caregiver-level characteristics, where household and caregiver-level regressions would require clustering at the community level. In addition, we may choose to conduct heterogeneity analysis on full attendance counts using community-level characteristics. In particular, we may be interested in heterogeneity in treatment effects by community-level EMERGE treatment status. Many caregivers in those communities had access to the dialogic reading training and storybook distribution in 2018, which may affect not only their propensity to attend another training but also potentially their response to the mobilization interventions described above.

As noted above, measures of program coverage other than attendance counts are available only for a subset of the sample (the EMERGE project sample). One way to create another denominator might be to estimate the number of ECD children at the school. Alternatively, we could consider using other measures of community size to predict turnout in the absence of mobilization interventions. For example, in the control group, regressing turnout on number of households surveyed in the EMERGE baseline and/or number of total students in the school would allow us to predict total community-level turnout in all communities. This predicted turnout could then be added as a control variable and/or interacted with treatment to test for heterogeneity in treatment effects by community size.