How Effective Are Early Grade Reading Interventions? A Review of the Evidence

Herein, evidence from 15 Early Grade Reading (EGR) interventions are summarised. It was found that EGR interventions are not a guaranteed means of improving reading and rarely lead to fluency in the short term. However, they are a predominantly reliable method of making substantial improvements in reading skills over a short period of time across a variety of contexts. The average effects equate to approximately three years of schooling.

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Early Grade Reading interventions are programmes that aim to strengthen core reading skills in Grades 1—4. This is achieved by training teachers to teach reading using simplified instruction and evidence-based curricula and by employing a combination of complementary approaches. Herein, evidence from 15 EGR interventions are summarised. It was found that EGR interventions are not a guaranteed means to improve reading and they rarely lead to fluency in the short term. However,

they are a mainly reliable means of making substantial improvements in reading skills over a short period of time across a variety of contexts, with average effects equating to approximately three years of schooling.

- Despite increasing enrolment rates, early grade illiteracy is widespread in the developing world.
- UNESCO estimates that 250 million primary school-aged children (out of a total of 650 million) are failing to acquire basic reading skills.
- Illiteracy has wide-ranging costs.
- Illiteracy prevents millions of children from taking advantage of the extensive benefits of education.
- Societal shortcomings in literacy may constrain economic growth and lead to higher societal costs in terms of employment, education, crime, and health.
- Early Grade Reading interventions are a specific type of programme intended to strengthen core reading skills in Grades 1–4 and are emerging as a potential solution to address the crisis of illiteracy.

What are Early Grade Reading interventions?

- They are geared towards improving core reading skills.
- They target students in early primary school.
- They train teachers to teach reading with simplified instruction and evidence-based curricula.
- They employ a mix of complementary components. These include providing instructional guidelines, following up on in-service trainings with coaching and monitoring, supplying supplementary instructional materials, and furnishing tools and training for student assessment.

Teacher training

- Training must move beyond large, conference-style, one-off, professional development workshops to personal extensive training focused on practical skills.

- Training should focus specifically on reading.
- Training should have a basis in reading curricula that follows evidence from education and cognitive research, be appropriate to student ability levels, and cater to the local language and level of resources available.

In-service training

- In-service training should emphasise and explain to participants the five main reading skills central to EGR interventions: phonemic awareness, letter-sound knowledge, vocabulary, reading fluency, and comprehension.
- Initial in-service training at the start of the EGR intervention lasts from five to ten days. This is followed by refresher training of three to five days taken during school breaks in the middle of project implementation.
- In-service training should use cascade models that train master trainers or coaches who then deliver the training to teachers.
- Teachers should learn how to use instructional guidelines and how to integrate new reading materials into their lessons. They should also learn and practice instructional techniques and activities that develop reading skills (such as the 'I Do, We Do, You Do' approach).
- Guidelines enable teachers to develop simple reading instruction routines. Ideally, they should provide step-by-step instructions without too many words or complex procedures.
- The length of lessons in instructional guidelines should range between 30 and 90 min.
- Evidence suggests that scripting lessons tends to enhance the effectiveness of reading instruction in low- and middle-income countries.
- Coaching and continual feedback have been found to be

- beneficial.
- During visits, coaches observe teachers as they deliver reading lessons to their students. After the lesson, the coach provides individualised feedback with the aim of reinforcing concepts from in-service teacher training, improving lesson content, or helping the teacher apply instructional techniques more effectively.
- Reading materials appropriate for the local context are fundamental for instruction (once teachers have been trained how to use them).
- The supplementary instructional materials of EGR interventions permit students to practice letter sounds, hear teachers or other students read aloud, learn new vocabulary, and read stories.
- Assessments are a critical part of effective reading instruction. Accordingly, effective EGR interventions often include the furnishing tools and training for student assessment as another component.
- Assessments evaluate student reading skills such as letter sounds, familiar words, listening comprehension, or passages of connected text with reading comprehension questions.
- Student assessments can indicate to teachers those students who need additional instruction in specific reading skills.

The study

This paper adds to the literature by presenting a clear definition of EGR interventions and a rationale for why they should enhance reading skills. Further, evidence from 15 impact evaluations occurring across a large variety of

contexts are summarised.

The data

Data consisted of 15 evaluations of EGR interventions. When examining these evaluations, the focus was on their effect on reading fluency, letter-sound knowledge, and comprehension.
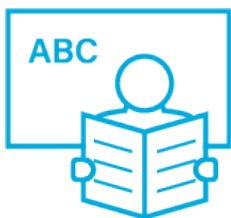
Findings

- For oral reading fluency (ORF), the majority of programme-language groups had effect sizes equating to at least 2 equivalent years of schooling (EYOS), with the average being over 3 EYOS.
- With regard to difference-in-differences (DiD) between treatment and control for the average score for fluency, and considering the range of fluency tends to fall within 45–60 correct words per minute, many of the results tend to appear somewhat substantial (though modest compared to the effect sizes). Only 30% (approximately) of the programme-language groups had average DiDs above 5 correct words per minute.
- Of the 15 interventions, 12 were at least moderately effective in terms of either effect sizes or DiDs.
- Notably, only two averages fell within the range of 45–60 correct words per minute. In other words, the average student in most programs was not reading fluently by the end of the intervention and less likely to read with full comprehension of the text.
- The trends for impacts in terms of letter sound recognition/letter name recognition (LSR/LNR) are similar to those of ORF, with slightly larger impacts on

average. The average programme mean effect size was nearly 4 EYOS. Moreover, only 3 out of 11 with data had effect sizes equating to less than 2 EYOS.
- The majority of programmes had at least one programme-language mean above 10 correct letter sounds per minute, which is a substantial improvement given the subtask has 100 items.
- For LSR/LNR, the mother-tongue programmes had substantially larger effect sizes on average.
- The results for reading comprehension (RC) are consistent with the other findings.
- The average effect size in terms of EYOS (2.86) is slightly smaller than ORF and LSR/LNR.
- The average endline RC scores were low-to-moderate: only one programme had average scores above 50% and most had scores below 20%, implying a high number of zero scores.

Implications

- EGR interventions have emerged as a possible solution to the widespread problem of illiteracy among early primary school students in developing countries.
- The findings reveal that EGR interventions are mostly consistent in improving outcomes for letter-sound knowledge, fluency, and comprehension (as measured by LNR/LSR, ORF, and RC).
- While practical gains represented substantial improvements over the status quo, they were rarely large enough to bring students close to fluency.
- Generally, the interventions were slightly more

effective at improving outcomes in practical terms for LSR/LNR compared to ORF/RC, although several interventions had very large gains in practical terms for all three subtasks.

- Overall, grade level, intervention length, programme size, and language of assessment did not appear to influence the outcomes substantially.
- EGR interventions are a mostly reliable method (regardless of context) of making substantial improvements in reading skills and accelerating learning in many contexts.
- Rigorously training teachers to teach reading using evidence-based simplified curricula is probably a powerful element for making progress in reading skills.