

## ***POLICY SUMMARY***

### ***Results of Year 2 Impact Evaluation***

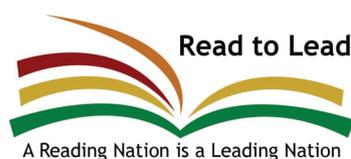
# **THE EARLY GRADE READING STUDY (EGRS)**

*August 2017*



**basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**



## PROJECT OVERVIEW

One of the biggest developmental challenges facing South Africa is the high number of children who do not learn to read for meaning in the early years of school. This is the foundational skill upon which all others build and as such this has become a leading priority for the Department of Basic Education (DBE). In order to address this challenge, the DBE initiated the Early Grade Reading Study (EGRS) in collaboration with academics at the University of the Witwatersrand, the Human Sciences Research Council (HSRC) and Georgetown University (USA). This is a large-scale educational impact evaluation – the biggest in South Africa – and aims to build evidence about what works to improve the teaching and learning of early grade reading in African languages in the country.

The core of the project is a comparison of the cost-effectiveness of three promising intervention models to improve reading outcomes in learners' home language (Setswana). The project commenced in 2015 by working in 230 schools in quintiles 1-3 in the North West Province. Each intervention has been implemented in a separate group of 50 schools with an additional 80 control schools where ordinary schooling is continuing. The project uses a formal impact evaluation methodology known as a Randomised Control Trial (RCT) complemented with a 60-classroom observation study and eight detailed case-studies. The study design enables the researchers to estimate the impact of each intervention model on measures of reading, as well as understand where, how and why different elements of the intervention models are working.

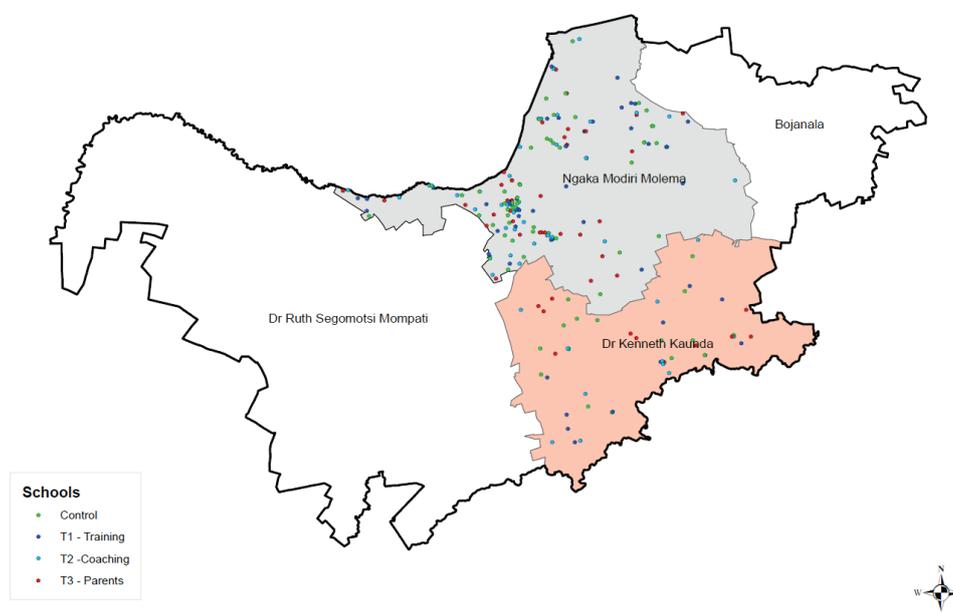
The evaluation assessed three intervention models:

1. **A structured learning programme and centralised training:** The first intervention provides teachers with lesson plans aligned to the National Curriculum Statement Grades R-12 (NCS) including the Curriculum and Assessment Policy Statements (CAPS), as well as additional quality reading materials and training at centralised workshops twice a year.
2. **A structured learning programme and specialist on-site coaching:** The second intervention (implemented in a different group of 50 schools) provides teachers with the same set of lesson plans and reading materials but provides ongoing support to teachers through on-site coaching and small cluster training sessions.
3. **Parental intervention:** The third intervention (implemented in a further 50 schools) holds weekly meetings with parents to discuss the importance of learning to read in the early grades and to empower them with the knowledge and tools to become more involved in their child's literacy development.

The three interventions were implemented in the Grade 1 class of 2015 and at the Grade 2 level in 2016, thus following the same cohort of learners. This year (2017) the two structured pedagogic interventions have continued at the Grade 3 level, therefore ensuring that this cohort of learners are exposed to the interventions for the entire Foundation Phase. An organisation called "Class Act" has served as the service provider for the implementation of the interventions.

## Project Overview

**Figure 1: Map of North West Province showing the random allocation of schools to each of the different interventions**



## MOTIVATION BEHIND THE EGRS

Learning to read is foundational to all subsequent learning; yet the majority of South African children are being left behind in this regard. South Africa's participation in international assessments of reading and literacy such as PIRLS (2006, 2011) and SACMEQ (2007, 2013) has revealed that large proportions of children in Grades 4, 5 and 6 have not yet learned to read with comprehension. These children, who have not learned to read, can therefore not read to learn in subsequent Grades and in all their subjects.

***Perhaps the most effective way to bring about socio-economic transformation in South Africa is to improve reading outcomes amongst poor children.***

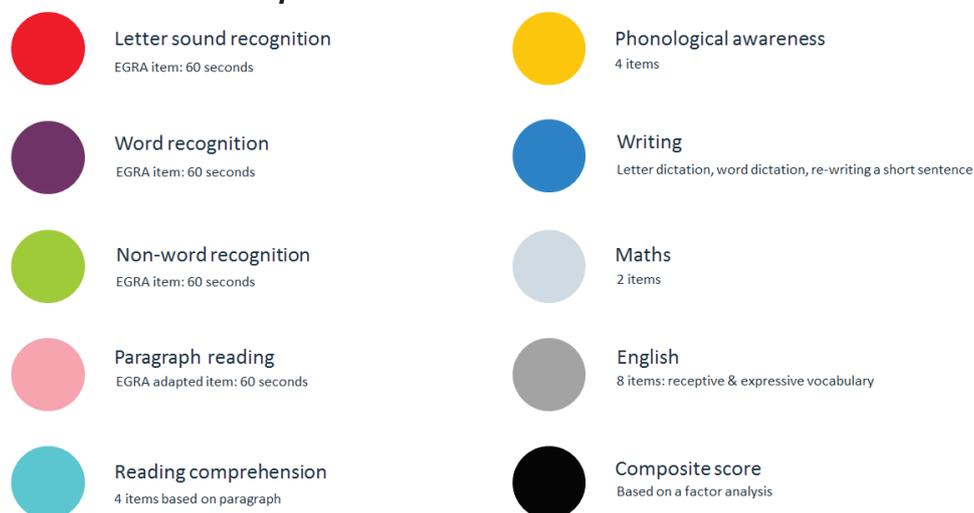
Based on all the available evidence it is clear that weak reading foundations are the major root cause of weak academic achievement later in school and subsequently the dropping out of school that occurs amongst 16 to 18 year-olds in South Africa. It is widely accepted that performance in the National Senior Certificate Examination, a secondary school leaving examination, known as "matric", is strongly predictive of post-schooling success and wages earned in the labour market.

Although there are various initiatives underway to support early grade reading – and there have been many others in the past, there is little or no evidence of what is working or why. A Randomised Control Trial (RCT) design provides an accurate estimation of the causal impact of interventions, and thus has the potential to inform responsible policy decisions. By using a random lottery to allocate schools to intervention and control groups (no intervention) it is possible to construct a credible "counterfactual" scenario i.e. what would have happened to those who did receive the intervention if they had not received the intervention

Of the three intervention models we have been evaluating, the Coaching intervention is showing a substantial positive impact after two years of intervention (end of Grade 2). This intervention included lesson plans, reading materials and on-site coaching by reading experts. Learners who received two years of this Coaching intervention were approximately 40% of a year of learning ahead of the students in the schools that received no intervention ('business-as-usual' schools). This is a truly significant improvement by international standards. The other two interventions (centralised Training; and the parent involvement intervention) appeared to have a small positive impact, less than half the size of the coaching intervention.

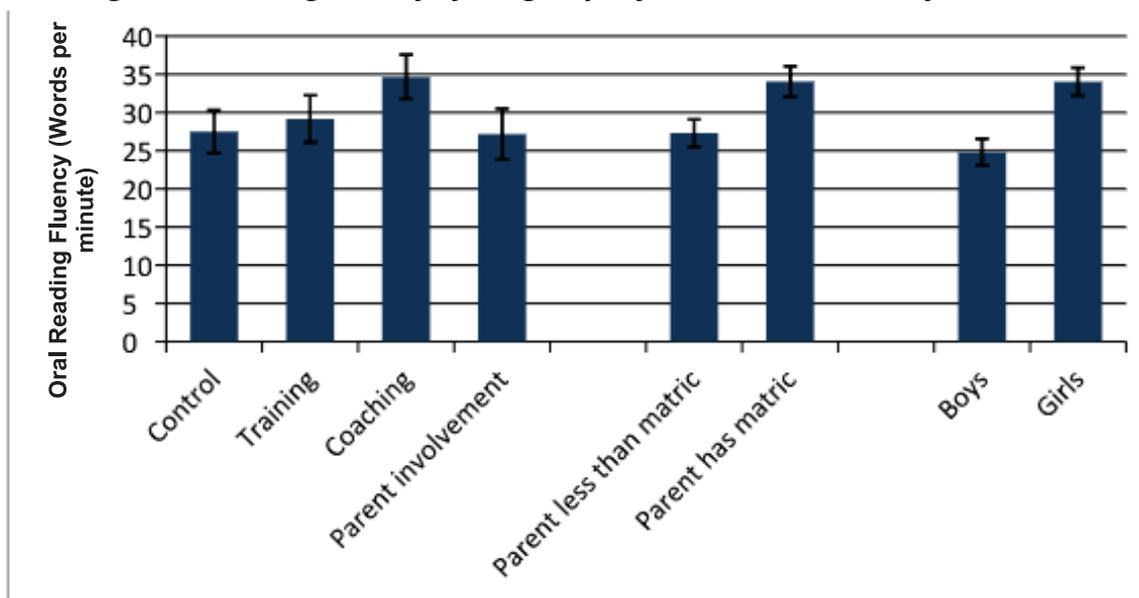
Figure 3 reports how the different groups of children performed in Oral Reading Fluency (reading aloud) by the end of Grade 2. It is evident that learners in the Coaching group were furthest ahead of the control group by the end of grade 2. Those in the Coaching group could read approximately 7 more words per minute than those in the control group – amounting to 26% more words per minute. Children whose parents had at least a matric performed substantially better than those whose parents were less educated, indicating the importance of the educational environment at home. Girls performed substantially better than boys, reading nearly 10 words per minute more than boys on average. This is a worldwide finding - that girls have better early grade reading results than boys, but the gaps are particularly large in South Africa and persist throughout schooling – ultimately girls are more likely to complete secondary school than boys.

**Figure 2: Learner Assessment components**



## Motivation behind EGRS

**Figure 3: Average Oral Reading Fluency by subgroups of interest at the end of Grade**



**Note:** Learners repeating Grade 1 are not included in this figure; 95% confidence intervals are indicated.

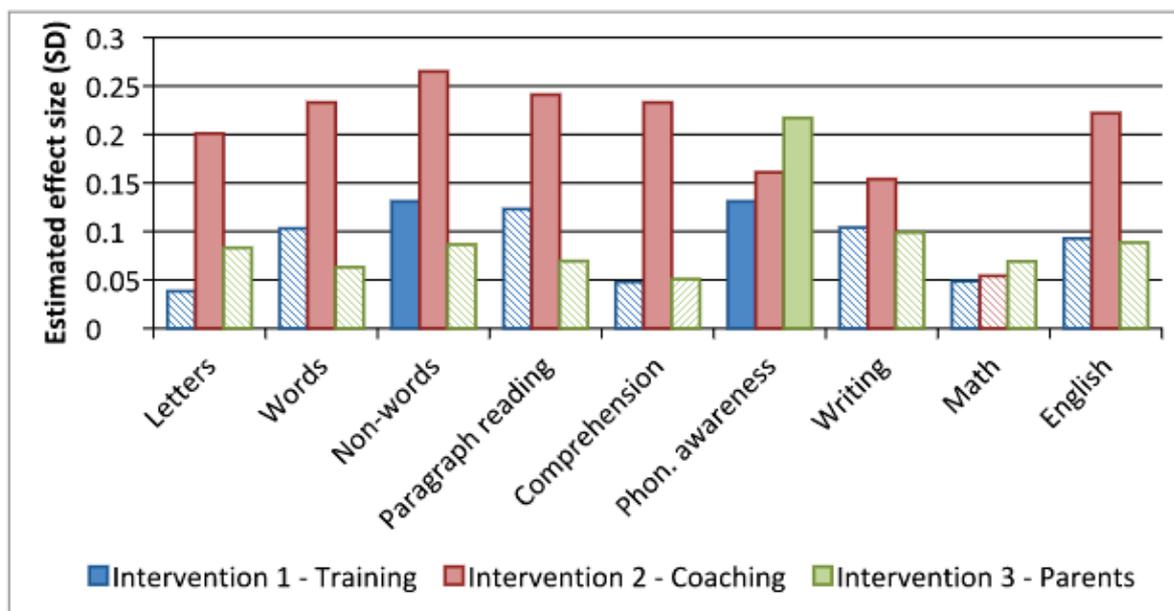
## IMPACTS ON VARIOUS COMPONENTS OF LEARNING

We measure the impact of the Home Language Literacy interventions on letter recognition, word recognition, non-word recognition, paragraph reading (oral reading fluency), phonological awareness, comprehension, writing and two additional school subjects, English and Mathematics – in case there were spillover effects. Figure 4 presents the results of the analysis of the impact on reading skills, with effect sizes expressed in terms of standard deviations. Fortunately, there were no negative effects of any intervention on any sub-test.

Although the Training intervention had moderate positive effects on some of the sub-tests, the Coaching intervention registered statistically significant positive effects on all Home Language Literacy measures, with similar effect sizes across the sub-tests. There was no significant effect of the Coaching intervention on the short Mathematics test that was administered. This means that we have no evidence of a negative effect through crowding out of teaching time for Mathematics. Interestingly, we observe a significant positive effect on English. This might be attributable to an improved underlying language ability (obtained through the home language intervention) or simply due to improved classroom management and transferable instructional methods acquired by the teacher through the Coaching intervention. Either way, this is an encouraging finding for the Coaching intervention.

Although the overall impact of the parent intervention was small, it does appear to have had a significant positive impact on phonological awareness. This was probably the specific reading skill that was most directly targeted through the parent meetings. Sound games were a key method taught to parents to use at home in the development of their child's phonological awareness.

Figure 4: Effects on sub-tests



Note: Solid bars represent statistical significance at the 90% confidence level.

## WHO BENEFITS MOST FROM THE INTERVENTIONS?

**Boys catch up to some extent:** The effective Coaching intervention is helping boys catch up some of the way to girls. Although girls still perform better than boys in the Coaching group, the gap is smaller than it is in the Control group.

**Impact concentrated in urban schools:** For all three interventions, the observed impacts are larger in urban township settings, but there is no measurable impact in deep rural settings. This means that we may need to approach interventions in rural schools differently.

**Middle-to-top performing learners benefited most:** The impact of the Coaching intervention is largest for children in the middle and upper part of the achievement distribution with small or negligible impacts for the weakest performing children, there is no evidence of a negative effect for any part of the performance distribution. One implication of this finding is that structured pedagogic programmes that make use of lesson plans may benefit certain groups of children more, depending on the level at which the lessons are set.

**Large-classes benefited most:** Both the teacher support interventions (“Training” and “Coaching”) had the largest impacts in relatively large classes (38 to 45 learners). In smaller classes, it may be that teachers in the control schools are already able to effectively manage classrooms, provide structured learning and differentiated attention to a variety of learners. However, in larger classes the EGRS interventions helped teachers to provide better instruction in a challenging environment. Both of the pedagogic interventions emphasised good classroom management practices such as how to reorganise classrooms, work in small groups while keeping the larger classroom occupied and bring routines and predictability to the classroom. However, in the very largest classes (more than 50 learners), the impact of the EGRS interventions were smaller, possibly indicating that beyond a certain threshold it remains difficult to conduct effective teaching. This emphasises the need to eliminate excessive class sizes (50+) in the Foundation Phase.

*Who Benefits Most?*

## HOW MUCH DID TEACHING PRACTICE AND PARENT BEHAVIOUR SHIFT IN RESPONSE TO EGRS INTERVENTIONS?

Through the use of mixed methods research (teacher questionnaires in all 230 schools, lesson observations in 60 schools and a set of detailed case studies), we investigate underlying change mechanisms by observing how the learning environment, teaching practice, and classroom activities changed as a result of the programmes.

An important preliminary point: Teachers in the Coaching schools were considerably more likely to report feeling a high level of professional support than those in the control schools, with teachers in the Training group also more likely to experience high professional support to some extent.

**Table 1: Teachers' experiences of professional support**

	Control	Training	Coaching	Parents
"I feel supported and recognised for my work"	53%	62%	82%	49%
"I regularly meet with people who provide mentoring and curriculum support"	52%	57%	84%	45%

Two other results are worth emphasising. First, even though there are no large differences in access to graded readers, the lesson observations reveal that **far more learners are actually reading graded readers in the Coaching and Training schools. This increase is substantially larger for teachers who received Coaching relative to teachers who received Training.** Second, even though we find no change in the probability *that* learners practice reading in the classroom, there is a noticeable difference in *how* they practice reading: **Teachers in both Training and Coaching groups are more likely to do group-guided reading, resulting in more opportunities for learners to receive individual attention. The impact is, again, larger for teachers who received Coaching relative to Training.** These results suggest that there are some teaching practices such as group-guided reading that are difficult to enact and require additional development to be effective. They also reveal an important interaction between resources and teaching practice: **graded readers are only useful if teachers have developed the skills to use them effectively in the classroom.**

Low attendance was a major limitation in the Parent intervention, as illustrated in Figure 12. In both 2015 and 2016, large proportions of parents did not attend any meetings. In 2015, just over a third of parents attended at least three sessions while in 2016 just under a third attended at least three sessions. Nevertheless, compared to the control group, parents in this intervention group reported attending a significantly higher number of parent meetings at their school on average. However, no other indicators of parental involvement in home reading or educational activities shifted substantially, confirming that there was no large change in parental behaviour in response to the intervention.

## RECOMMENDATIONS AND DBE PLANS FOR MOVING FORWARD

1. **Structured programmes with coaches help:** A structured learning programme aligned to the NCS, together with additional high quality reading support materials (graded reading books, flash cards, posters), can make a significant difference to learning outcomes, if accompanied by effective and carefully monitored support to teachers (coaches).
2. **Coaching is the best alternative:** Whereas previously very little evidence existed about effective large-scale teacher support modalities in South Africa, we now have evidence that on-site coaching to Foundation Phase teachers can shift learning outcomes, and that this is a cost-effective strategy. Modelling of lessons, in a safe space, as they navigate the lesson plans for teaching learners to read is critical.
3. **Direct in-service training is better than ‘train-the-trainer’ models:** Direct in-service training of teachers (4 two-day workshops over the course of 2 years), while less effective than on-site coaching, is in turn likely to have more impact than “cascade” models where specialists “train the trainers” who then interact with teachers.
4. **Existing subject advisors cannot fulfil the role of a coach:** The low ratio of subject advisors to schools (especially in the Foundation Phase) makes it impossible for subject advisors to fulfil the role of reading coaches, as implemented in EGRS; nor do we recommend increasing the number of subject advisors to allow this since the recruitment process, oversight structures and modus operandi of the coaches is different to that of subject advisors.
5. **Prioritizing schools is a viable option:** On-site coaching interventions could be implemented in priority schools (e.g. 100 or 500 schools in a Province) on a temporary basis (e.g. 2 years at a time) and through independent contracting and oversight structures. The cost for 100 schools would be approximately R6 million at current prices.
6. **Develop reading norms in the African languages:** Reading norms cannot simply be adapted from one language into another due to differences in language structures. It is a complex exercise requiring longitudinal data. Therefore, the EGRS data could be used towards the development of reading norms in the African languages.
7. **Learning from EGRS:** Other large scale intervention initiatives such as those administered by the NECT (National Education Collaboration Trust) could draw on the lessons of the EGRS and extend successful programmes to selected schools and districts.
8. **Parental involvement needs further research AND may be promising:** Whilst parental involvement is a hugely deterministic factor in a child’s learning outcomes, the biggest challenge from a policy perspective is how to shift parent involvement at scale. Given the potential cost-effectiveness of such interventions, researchers and policy-makers should continue to investigate mechanisms to do so.
9. **Learning what works in deep rural settings:** Formative research and subsequent impact evaluation is required to figure out what types of school support programmes make a meaningful difference in deep rural settings.
10. **Measuring long-term EGRS impacts:** The DBE is planning to administer subsequent data collections on the same sample of learners to measure the long-term impacts of these reading interventions.

## *The Partners*

11. **EGRS for EFAL in Mpumalanga:** A second phase of the Early Grade Reading Study (EGRS 2) is underway in the Mpumalanga province, since the start of 2017. This project aims to investigate the effectiveness of two alternative interventions on English as First Additional Language in the Foundation Phase.
12. **Early Grade Mathematics Study:** The DBE also hope to conduct an Early Grade Mathematics Study over the next 2 to 5 years, with the first activity being a detailed scoping study to identify and design promising interventions with strong theories of change as well as cost-structures that would be sustainable on a large scale.

## ***THE PARTNERS***

An organisation called “Class Act” has been appointed to run the three interventions on behalf of the DBE for the purposes of this impact evaluation. Programme interventions are being funded by a coalition of donors, including the ZENEX Foundation, UNICEF, Anglo American and the Department of Planning, Monitoring and Evaluation in the Presidency. The evaluation side of the project is being supervised by the Research Team while the data collection and capturing is being managed by South Africa’s Human Sciences Research Council (HSRC) who also works closely with the Research Team on instrument development. The evaluation is being funded by the International Initiative for Impact Evaluation (3ie).



# basic education

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Basic Education  
**REPUBLIC OF SOUTH AFRICA**

RESPONSIBLE DEPARTMENT: PROJECT DESIGN, MANAGEMENT AND GOVERNANCE



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