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Factors shown by research to support and enhance reading comprehension

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Preamble

Reading is a complex phenomenon. Improving the reading performance of thousands of individual learners across grades take time, improvement is incremental and learners vary in terms of where, how well and how fast they change, depending on where they were when improvement attempts started.

Likewise, education systems are complex organisations. Improving performance requires thousands of schools and teachers to change the way they do things. Teachers vary in terms of their willingness to change and where, how well and how fast they change, depending on where they were when improvement attempts started (their knowledge, dispositions, attitudes to teaching/learning, etc.).

Expecting too many changes on too many fronts too soon sets everyone up for failure. The goals and targets for change must be realistic and appropriate to the specific education context.

The South African (henceforth SA) education sector has eight years (2022-2030) to bring about improvements in reading performance such that by 2030 every 10-year-old child is expected to be able to read with meaning. This is a broad aspirational goal. How might it be broken down into manageable chunks and achievable targets?

This advisory note provides a broad framework and rationale about what routes to follow and why, in order to have a reasonable chance of achieving this goal. This advisory note does not provide a detailed roadmap for such a journey.

Factors shown by research to support and enhance reading comprehension

Reading comprehension (henceforth RC) is complex, multi-layered and multifaceted. Readers vary in terms of the learning milieu in which they find themselves, the instructional methods to which they are exposed, the skills they bring to the reading process, and the effort, persistence, accuracy and thoroughness they put into it. Reading research over four decades has found the following to be important factors in helping children learn to read for meaning:

- *Oral language proficiency in the language in which children learn to read impacts reading development. Children vary in their oral language proficiency (in Home Language or FAL); the stronger it is, the easier they learn to read and the more likely they will understand what they read.*

- *Explicit and systematic phonics instruction helps children crack the written or alphabetic code and develop decoding skills that are necessary (but on their own not sufficient) to enable comprehension.*

- *Developing reading and writing skills in tandem, in ways that reinforce mutual development.*

- *Exposing children to shared storybook reading from an early age helps build familiarity with the*

"story world" of books, develops narrative processing skills, builds up their linguistic as well as general knowledge and engages their interest in reading.

- *Having easy access to books/texts at different levels and opportunities to practice early reading skills on a daily basis and develop normative reading habits are both critical factors in building RC.*

- *Once children have developed decoding skills to enable them to read texts independently, their ability to understand texts on their own varies greatly. Explicit instruction in comprehension strategies improves RC and helps learners engage more deeply with texts.*

- *Having teachers ask an array of questions that include literal, inferential, integrative and evaluative questions helps learners engage more deeply with texts.*

- *Explicit instruction in text structure, genre conventions (e.g. narratives versus information texts) and how to read visuals in texts improves RC and helps learners engage more deeply with texts.*

- *The development of strong reading skills in the HL support reading in other languages.*

Attempts to improve reading performance need to take all these factors into account in some way or another.

Skilled decoders are likely to have better comprehension than less skilled decoders, just as children with more storybook, vocabulary or world knowledge are likely to perform better on comprehension measures than those with less knowledge in these domains. Similarly, better working memory, more inference generation, greater use of monitoring and other comprehension strategies all enhance RC.

Teacher training is critical, especially in the Foundation Phase, as this is when foundational reading and meaning making skills are developed and formative reading attitudes and habits formed. Teachers who lack content and pedagogical content knowledge about reading and its development, and who are themselves not skilled readers, can seriously impede learners' early reading trajectories.

1. What are we doing right as a country?

There are many factors currently in place which, in principle, can help to inform, guide, support and strengthen the education sector in achieving better reading outcomes.

- African languages serve as the LoLT in Foundation Phase in 75% of primary schools in SA, providing a 3-year window of opportunity for developing reading skills in the HL which not only serves as a good basis for future learning but can also support reading in English.

- The President in his 2019 SONA address made the achievement of reading for meaning by age 10 a national priority, thus providing much needed top down leadership. In addition, the DBE has consistently made early reading literacy a priority in its policy documents.

- The existing curriculum (CAPS 2011) provides quite detailed, specific guidelines for reading instruction. Although there are aspects of CAPS that could be revised and finetuned, it is an improvement on the inappropriate imported post–1994 curriculum that preceded it.

- Specific attention has been given to the teaching of early reading in African languages in the National framework for the teaching of reading in African Languages in the Foundation Phase (2020), a corollary to CAPS.

- The Research Coordination, Monitoring and Evaluation directorate within the DBE provides leadership and highly competent research skills, and has initiated large scale early literacy interventions from which large, longitudinal datasets have been built up in different African languages on an array of early foundational literacy skills and from which benchmarks and threshold can be determined for different language groups.

- Funda Wande is a leading NGO in pioneering evidence–based in–service teacher training in early

literacy development in the African languages and EFAL. SIRP (from UJ) has also developed course material in isiZulu and Sesotho for BEd courses related to reading instruction in Foundation Phase.

- *There are many more print resources in African languages in SA than in other African countries. There are several experienced NGOs (Wordworks, Nal'ibali) that are active in the field of early literacy that provide training and print resources in the African languages, as well as sets of graded readers, guidelines for using them and word frequency lists (The Molteno Institute).*

- *An invaluable body of research literature on economics and education has also been generated by Resep (University of Stellenbosch).*

- *A lot more research on early literacy is being undertaken, especially in the African languages, and by speakers of African languages, that broadens and deepens our understanding of reading in them.*

- *SA has by now accumulated very large literacy databanks on different aspects of reading (decoding, fluency and RC) across nearly all SA languages: PIRLS (RC in all languages in Grade 4; RC in English, Afrikaans and Zulu in Grade 5); the Nguni and Sotho languages (foundational reading Grade 1–5); ESL (Grades 1–5), and currently data sets on Afrikaans, Venda and Tsonga are also being collected. These are invaluable data sources that help inform, monitor and guide policy and practice, and help deepen our understanding of how reading develops in various languages over time in the SA context, in less than ideal educational contexts that differ from the more affluent Eurocentric contexts of the global North.*

- *The Right to Read and Write document (2021), prepared by a formally constituted sub-committee of the South African Human Rights Commission, provides a legal framework as well an assessment framework for supporting children's right to be taught to read with meaning by age 10.*

2. What are we getting wrong as a country?

Schooling systems are complex and multi-layered, they have a history, and there are many contributory factors that lead to high or low performance, and that can affect attempts to improve performance.

The SA schooling system has an extremely weak Foundation Phase. PIRLS distinguishes four RC benchmarks which reflect different levels of reading comprehension ability, viz. Advanced (+625 points); High (550–624); Intermediate (475–549) and Low (400–474). Readers at the Low International Benchmark (LIB) display 'basic' reading comprehension skills, i.e. when reading on their own these readers can generally answer some of the questions, usually relating to explicitly stated information in the text, and some questions requiring straightforward inferences. These are the so-called 'easy' questions. In 2016 PIRLS, 78% of SA learners could not read for meaning at this basic level(as opposed to 4% internationally). **This indicates that learners enter Intermediate Phase hardly able to read.** Even high performing schools produce readers who cannot properly engage with texts at a deeper level. Only 0.2% of SA learners could read at the Advanced benchmark (compared to 10% internationally), and only 2% reached the High benchmark (compared to 37% internationally). Our 'good' readers (those at the 75th percentile) are reading at the same level as weak readers (those at the 25th percentile) in high performing countries. Learners who get off to a bad reading start tend to remain poor readers.

- The best reform models depend on implementation; in the Foundation Phase, there is a gap between policy and implementation. Superficial compliance hardly qualifies as implementation.

- There is a lack of a common understanding and shared vision of what reading success in different languages looks like in the Foundation Phase. This results in low teacher expectations, lack of clarity regarding what constitutes effective classroom practices and the normalisation of mediocrity in learner performance.

- There is a lack of consequence management in the education sector at national and provincial level (ineffective school governance, corruption, poor implementation of the curriculum, inadequate management and utilisation of print resources, etc) which affects literacy performance in schools.

- Highly complex yet reliable organisations such as the aviation industry are geared to avoid catastrophic failures. Given the critical role of reading in educational and life success, education systems should be alert to potential catastrophic lapses in critical learning/teaching phases of schooling, but such awareness is lacking (e.g. having Grade 1 learners who have minimal knowledge of letter–sounds after a full year of schooling amounts to an early catastrophic failure in the Foundation Phase, yet most principals, Foundation Phase HODs and teachers are currently unlikely to even be aware of this early faultline (and how to recognise it) in reading development).

- Attempts to improve reading performance are hampered by poor teacher training, past and present, resulting in poor content and pedagogical content knowledge about early literacy and its development. There is great variation and inconsistency in the way tertiary institutions currently train Foundation Phase teachers. Although establishing foundational reading skills would seem to be a fundamental premise in training Foundation Phase teachers, there is paradoxically a disdain for code–based reading skills in some education approaches that privilege meaning above all in the written medium.

3. What needs to change (and how might that happen) if we are to reach the goal of all children reading for meaning by age 10 by 2030?

The Foundation Phase needs to be strengthened. **Context** and the notion of **thresholds** in reading development are important factors to consider when making decisions about how best to do so.

Context is important. Reading performance and decisions about how best to improve it are relative. As PIRLS results show, RC performance and its patterns of distribution in high income countries is vastly different from those in middle and low income countries. SA education stakeholders need to be aware of prevailing realities and make informed decisions about the way forward for now, based on available SA evidence.

A **threshold**[45] is a skill level below which potential meaning making processes cannot really operate. RC manifests in different ways and to different degree if thresholds are met, but comprehension hardly occurs, if at all, below the threshold. Thresholds are important for moving decoding skills along the developmental trajectory and include mastery of letter–sound knowledge to enable word reading, and oral reading fluency (ORF) that reaches an accuracy and speed threshold to enable the allocation of memory and attentional resources to meaning making during reading.

Current SA realities
- When PIRLS results below the basic LIB level are disaggregated, the following pattern of reading performance emerges, characterised by degrees of weak RC ability:

Figure 1: Disaggregating reading performance in SA (PIRLS 2016)[46]

LIB	400 – 475	22%
Below LIB	< 399	78%
Just below LIB: Weak	390 – 399	5%
Very weak	300 –< 390	32%
Extremely Weak	< 299	42%

45 Technically, benchmarks refer to normative goals that most children should meet, while thresholds refer to minimal performance levels, below which further progress in reading is difficult to achieve.

46 Pretorius & Roux (pending). Digging deeper into the surface: What can readers' responses to 'easier' questions tell us about emerging reading comprehension performance?

Given the strong research evidence worldwide that skilled decoders perform better in reading comprehension than less skilled decoders, the SA profile of very poor reading performance below the LIB suggests that the decoding skills necessary (albeit not sufficient) for RC are not yet in place.

• The large Nguni and Sotho datasets provide direct evidence of poor decoding skills among SA learners. Ardington et al. (2021) found that a minimum fluency threshold of 20wcpm enabled Nguni learners to read words slightly more accurately and less effortfully. Learners in Grade 2 or older reading below that threshold were in a non-comprehension zone. A minimum ORF threshold for Grade 2 learners was thus proposed. By the end of Grade 3, many learners (ranging from 24-47%, depending on the sample) had not managed to reach this minimum Grade 2 fluency threshold, while less than half had reached the Grade 3 fluency benchmark of 35 wcpm (cf. Ardington et al. 2021, Fig. 8). These results (derived from a dataset of 12,000 learners) provide strong evidence that the majority of learners go into Grade 4 with poorly developed decoding skills which puts them at high risk of RC failure.

How best to change reading comprehension (RC) performance in the current context?

Reading developmental is incremental. Extremely weak readers in an education system don't suddenly jump from being non-readers to intermediate or advanced readers.

Converging evidence indicates that poor decoding skills in Foundation Phase seem to be a major determinant of poor reading performance for the majority of SA learners at this point in time. This requires urgent and targeted attention – without subtracting instructional time and attention from RC.

Decoding skills are finite, they can be taught quickly and to high mastery levels, so improving decoding skills will be low hanging fruit that show gains in performance, boost motivation and build greater confidence in the education sector.

SA needs a two pronged approach that will cater to learners (and schools) performing at different levels:

i.   Shifting the large numbers of **extremely** weak and **very** weak readers to the next level, viz.   to weak readers who are able to read at a basic level (similar to the LIB). This is done by strengthening their decoding skills to reach or exceed threshold levels;

ii.   Shifting readers who can read fluently and are already performing at or above a basic level to higher levels of RC ability through explicit RC instructional methods.

Approach (i) does NOT mean that instructional time should only be spent on decoding. On the contrary, a balanced approach to reading in the Foundation Phase needs to be maintained, with attention given to all aspects of language and literacy development as specified by CAPS. The reform shift occurs more at an awareness, assessment and monitoring level of foundational decoding skills (Are any red lights flashing? If so, target the skill and teach it to mastery level). Regular assessment and monitoring of specific decoding skills at different grades should take place throughout FP to ensure that large numbers of learners do not fall below decoding thresholds, e.g. achieving recommended benchmarks for letter-sound knowledge in Grade 1; ensuring learners achieve or exceed the recommended minimum fluency threshold in Grade 2 and can at least answer literal and some inferential questions in RC; ensuring that Grade 3 learners achieve or exceed the recommended Grade 3 fluency benchmarks and can answer not only literal and some inferential questions, but also integrative and evaluative questions in formal RC assessments.

Approach (ii) requires that in schools where decoding thresholds are met, attention should be given to the assessment and monitoring of RC abilities to ensure that learners are challenged to higher and deeper levels of RC. Instructional focus should be on explicit teaching, modelling and application of RC strategies and other methods that have a proven research track record of enhancing meaning making while reading and talking about texts. This is fleshed out in a bit more detail in Table 2 in the Appendix.

Approach (ii) requires that in schools where decoding thresholds are met, attention should be given to the assessment and monitoring of RC abilities to ensure that learners are challenged to higher and deeper levels of RC. Instructional focus should be on explicit teaching, modelling and application of RC strategies and other methods that have a proven research track record of enhancing meaning making while reading and talking about texts. This is fleshed out in a bit more detail in Table 2 in the Appendix.

Such an approach would require teachers to be provided with quick and easy assessment tools to monitor decoding skills, guidelines for how to interpret the results, identify learners who are struggling to develop decoding skills, and how to help them get back on track.

Similarly, teachers would need to be provided with exemplars of grade appropriate RC assessments (of appropriate length, with a variety of RC questions that tap different levels of RC, using different question formats), a marking rubric, guidelines on how to interpret the results, identify learners who are struggling to read at a basic level, and how to help them improve their RC using explicit RC instructional approaches.

A two-pronged approach like this would make the 2030 goal more achievable. For monitoring purposes, the general goal of reading for meaning would need to be reframed along more specific lines, for example (just examples...):

* *By 2030, 10-year-old children at the 50th percentile are expected to achieve or exceed Grade 3 fluency benchmarks in the respective language in which they did Foundation Phase;*

* *By 2030, 10-year-old children at the 50th percentile are expected to read for meaning at a basic level in formal RC assessments, i.e. they will be able to correctly answer questions that require the location of explicitly stated information in texts and possibly also questions that require the making of straightforward inferences.*

* *By 2030, 10-year-old children at the 75th percentile or above are expected to exceed Grade 3 fluency benchmarks and read for meaning at deeper levels of comprehension (e.g. display intermediate, high or advanced levels of RC) ....*

Appendix: Table 2: Targets across the grades and reading levels

	Learners	Teachers
Grade 1	By the end of Grade 1, the majority of learners should be able to know at least 40 letters correct per minute (LCPM) and be able to blend letter-sounds in the Home Language. This threshold holds for all SA languages.	Grade 1 teachers made aware of this benchmark threshold, why it is important for subsequent reading development, how best to teach phonics, be given easy-to-use tools to assess letter-sound knowledge, guidelines on how to interpret the results and how to adapt instruction accordingly. Teachers should be held accountable if their learners do not meet this threshold. Teachers should continue to develop language, writing, vocabulary and reading comprehension as required by CAPS. Shared storybook reading should remain a compulsory instructional method for modelling meaning making processes and strategies in texts and to nurture reading for pleasure. Every Grade 1 teacher should have a functional reading corner in his/her classroom.
Grade 2	By the end of Grade 2, all learners should be able to: • read at a minimal oral fluency rate as specified for the different language groups. • display basic reading comprehension abilities by answering, minimally, literal and straight-forward inferencing questions correctly in a formal reading comprehension assessment	Grade 2 teachers should be made aware of the Oral Reading Fluency (ORF) threshold, why it is important for subsequent reading development, how best to strengthen it, be given easy-to-use tools to assess it, guidelines on how to interpret the results (according to language group) and how to adapt instruction accordingly. Teachers should be held accountable if their learners do not meet this threshold. Grade 2 teachers should be made aware of the four different levels of comprehension, be able to recognise the differences between them, and ask a range of questions in class. They should be shown how to teach reading comprehension in more explicit ways, and explicitly show readers how to find answers in the text to different questions. They should be given exemplars of well-designed reading comprehension texts, appropriate to Grade 2 in terms of text length and difficulty. Teachers should continue to develop language, writing, vocabulary and reading comprehension as required by CAPS. Shared storybook reading should remain a compulsory instructional method for modelling meaning making processes and strategies in texts and to nurture reading for pleasure. Every Grade 2 teacher should have a functional reading corner in his/her classroom.
Grade 3	By the end of Grade 3, most learners should be able to: • achieve or exceed the Grade 3 oral reading fluency benchmark as specified for the different language groups; • display basic reading comprehension abilities by answering, minimally, literal and straight-forward inferencing questions correctly in a formal reading comprehension assessment. • A number of Grade 3 learners should also be able to achieve more advanced reading comprehension levels by correctly answering integrative and evaluative questions.	As in Grade 2 except appropriate for Grade 3 in terms of text length and difficulty. Every Grade 3 teacher should have a functional reading corner in his/her classroom.