

EARLY CHILDHOOD SYSTEMS: PERSPECTIVES AND
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Do the ELOM Tools have Predictive Power?

From Reception Year to Grade 2: Evidence from the
Roots & Shoots Longitudinal Study

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School Readiness

Ready children have specific skills....

Van Zyl (2011, p. 84). “Specific qualifying criteria for successful entry into the formal school (Grade 1) include:

1. Cognitive skills that relate to language and literacy abilities;
2. Physical skills such as gross, fine and perceptual motor skills;
3. Social skills: motivation to learn and emotional stability.

Normative school readiness, includes self-regulation skills that influences learning behaviour such as persistence, paying attention, the intentionality to want to learn, following instructions and inhibiting inappropriate actions....”

All are important for enabling children to transition to Grade R and benefit from the curriculum.

Pre-School Predictors of Foundation Phase Language and Maths Performance

- SES and home learning environment.
- Social & Emotional functioning: interpersonal skills, and confidence.
- Perceptual-motor skills and visual-spatial abilities (e.g. copy shapes and patterns).
- Executive Functioning: self-regulation, active manipulation of information using rules, working memory, and cognitive flexibility
- IQ

Early literacy skills:

- Large vocabulary, phonological awareness, letter-sound recognition, oral language (explanatory talk), demonstrating some letter identification, narrative comprehension, print knowledge

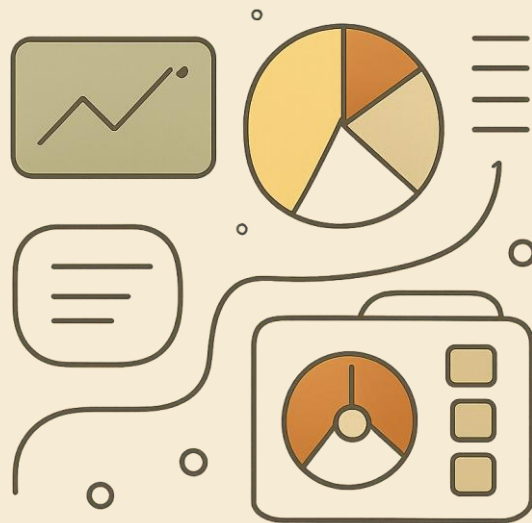
Mathematics:

- Oral counting fluency.
- Number identification
- Discriminate between two quantities as represented by sets or numerals.
- Perform addition and subtraction.
- Classification in sets (by colour and shape).
- Spatial abilities,
- Mathematics vocabulary (biggest, smallest, longest shortest).
- Patterning knowledge.

South African Studies: Preschool Predictors of Academic Performance

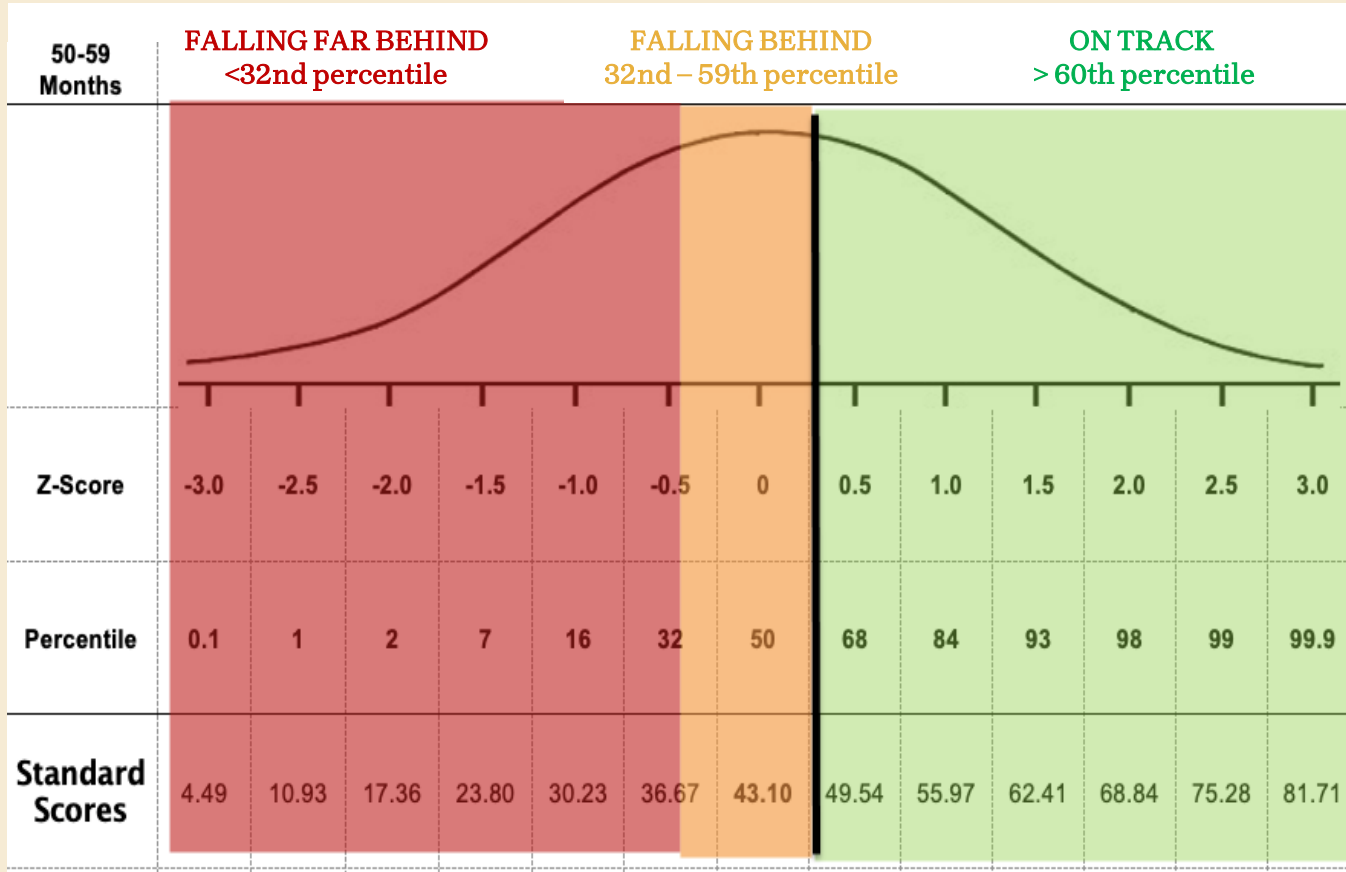
No SA research on the relationship between pre-Grade R cognitive and non-cognitive skills and primary school performance.

Only research on the relationship between school readiness (Aptitude Test for School Beginners; ASB) measured at Grade 1 and performance in Grade 1 and Grade 4 (van Zyl, 2011); ASB scores were correlated with language and mathematics performance in Grades 1 and 4.



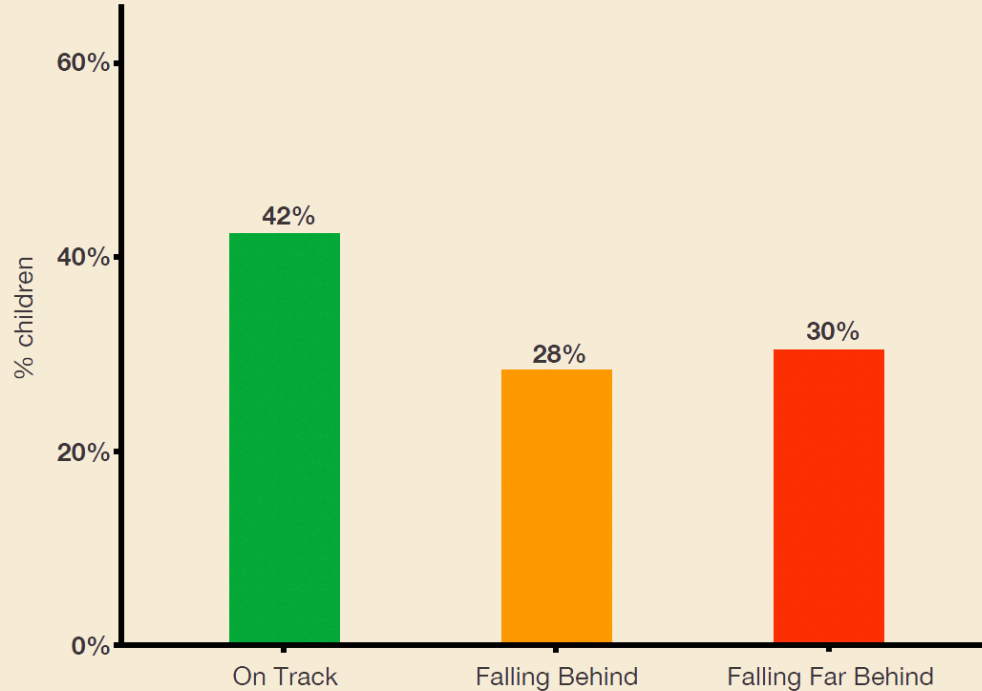
How ready are our children for Grade R?

THE ELOM 4&5 (Total) Standards Profiles



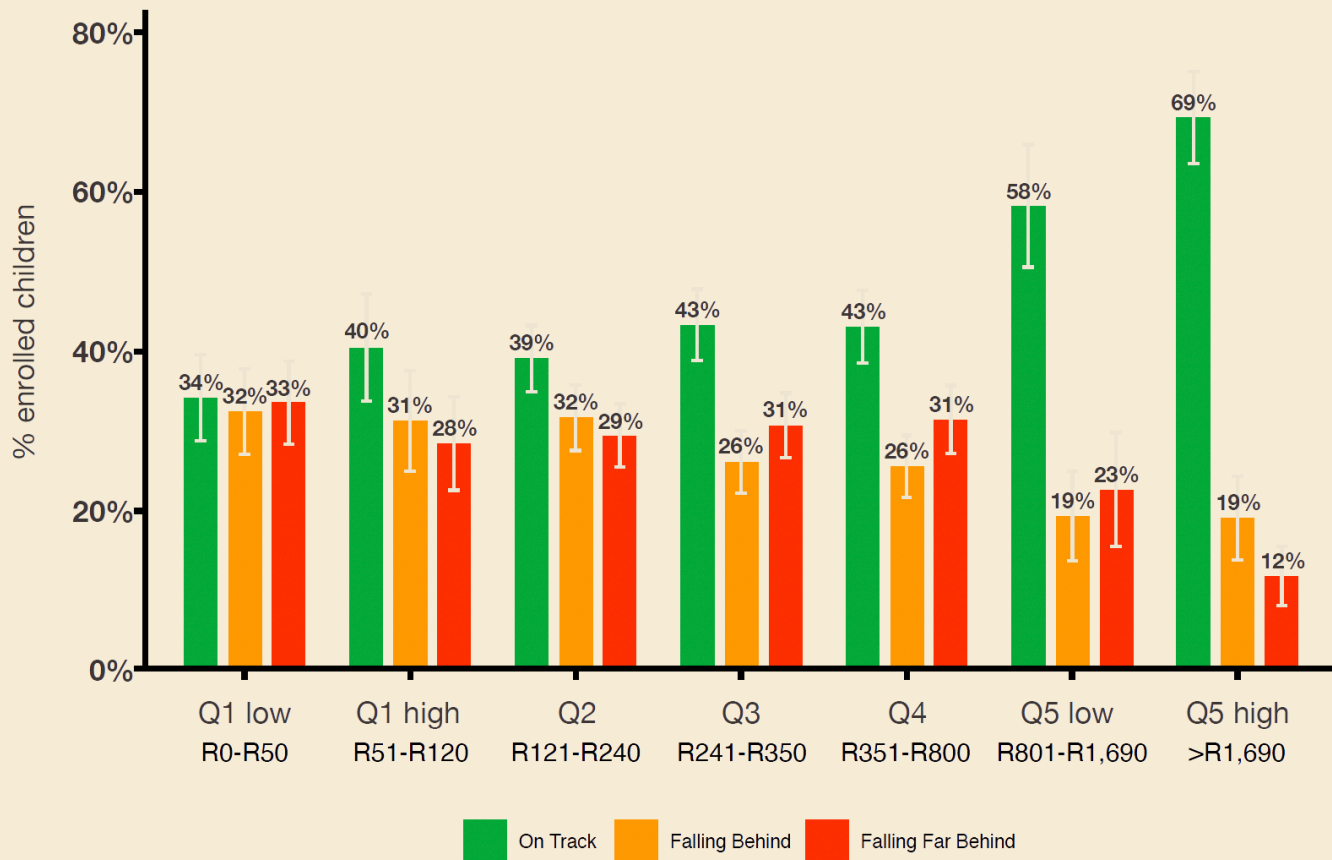
How ready are our children for Grade R?

The Thrive By Five 2024 Index of children enrolled in ELPs (n = 5,001)



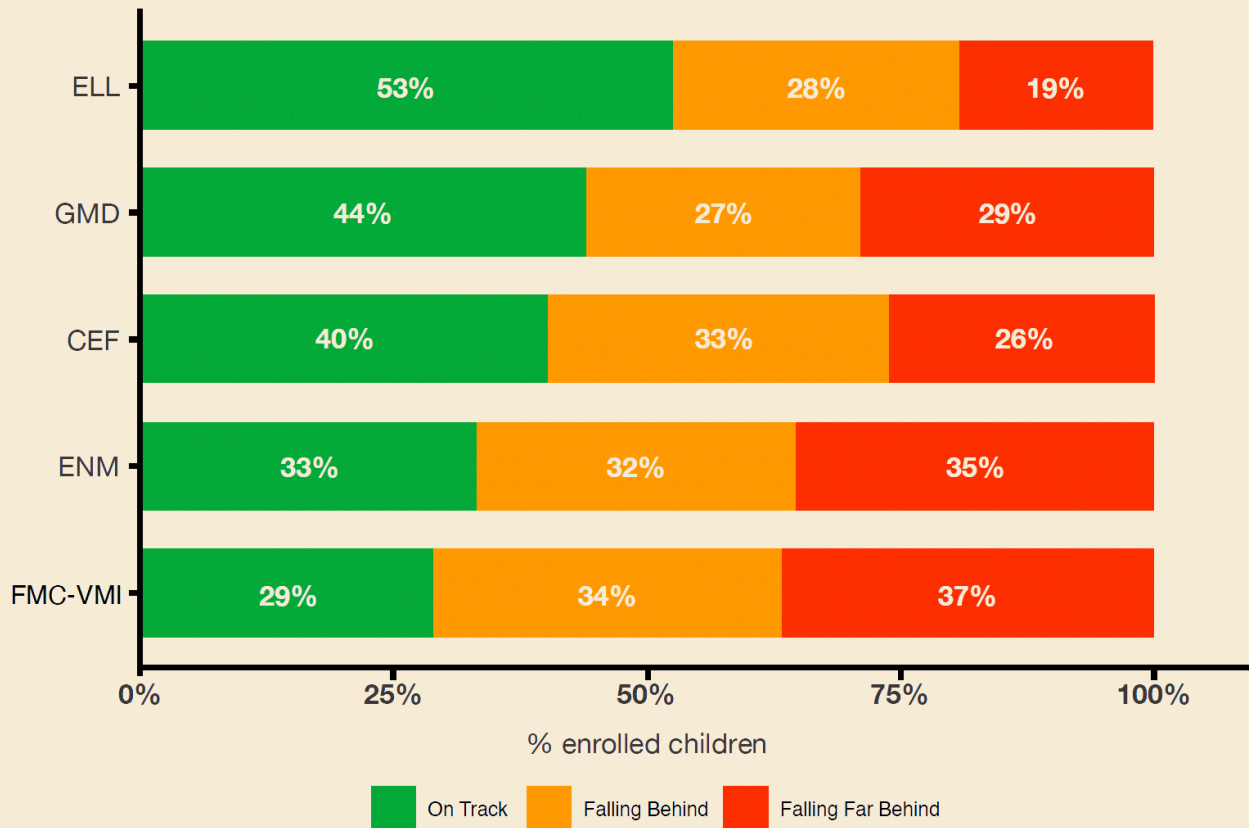
ELOM 4&5 Total - % On Track, Falling Behind and Falling Far Behind

How ready are our children for Grade R?



ELOM 4&5 Total: % On Track, Falling Behind and Falling Far Behind, by ELP fees

How ready are our children for Grade R?



ELOM 4&5 Domains: % On Track, Falling Behind, & Falling Far Behind

Starting Behind and Staying Behind

The skills children develop in one preschool or school year form the foundation for future learning (Hofmeyr et al., 2022; Spaul et al., 2016).

Early disadvantages compound as children progress through school.

The 2024 TB5 survey reports that less than half of children attending preschool programmes in SA have acquired the foundational skills needed to succeed at school (Giese et al., 2025).

Why This Research Matters

Limited evidence on the predictive validity of South African early learning tools.

Most existing tools developed and standardised in high-income countries
(Donald et al., 2018; Mwaura & Marfo, 2011)

No evidence for associations between early cognitive outcomes (prior to Grade R) and later school performance in reading and maths.

This study fills that gap while examining the predictive validity of the ELOM 4&5 and ELOM-R (v1) assessments

The Roots & Shoots Longitudinal Study (H Hofmeyr)

Study Design

Cohort of learners tracked from school entry through the Foundation Phase (Grades R–3) to examine how skills at school entry relate to later academic outcomes.

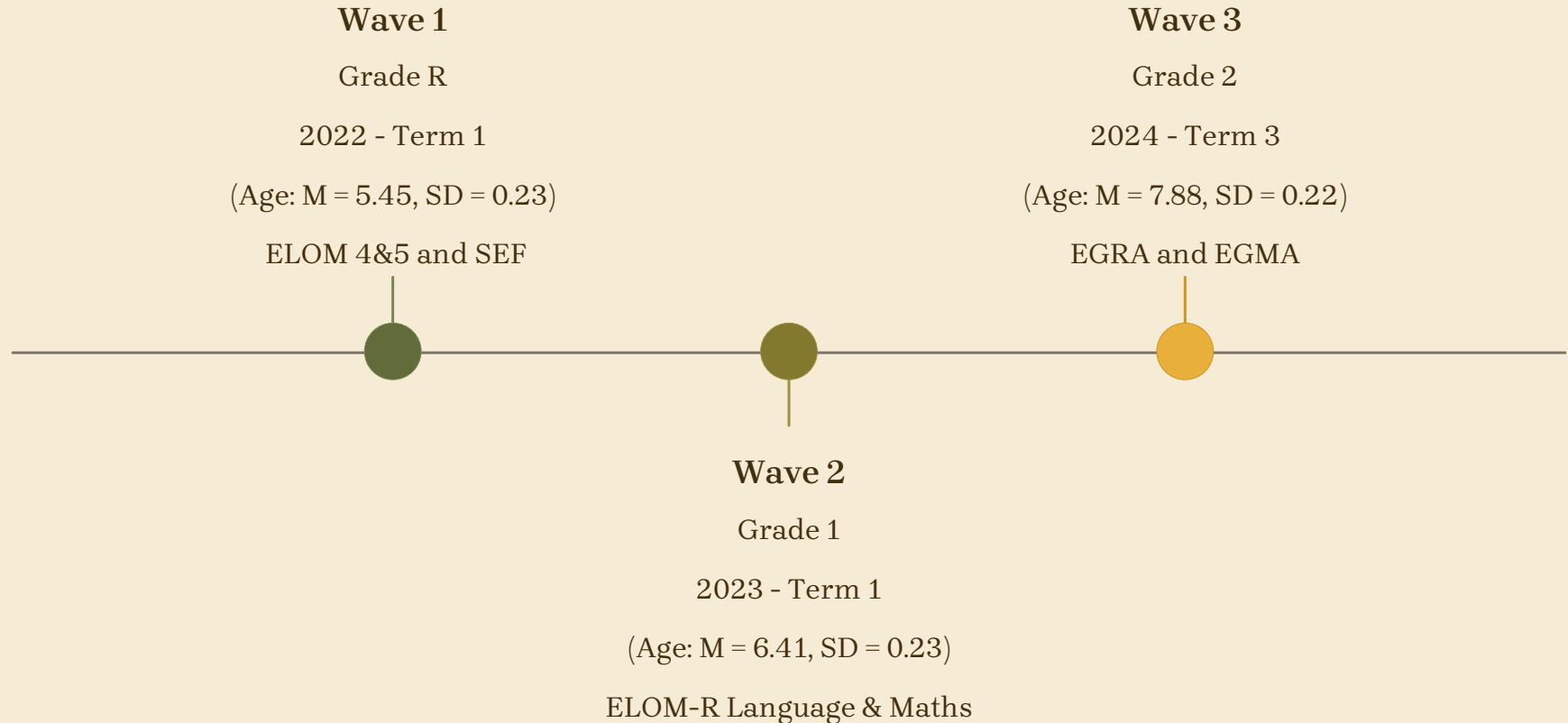
Core Research Question

To what extent do the **ELOM 4&5** and **ELOM-R (v1)** predict later reading and mathematics skills?



- ✓ Three waves of data collection across three school years

Three Waves of Data Collection



Study Sample

585

Grade R children

from 75 schools in the Western Cape

75

Schools

50 Afrikaans-medium · 25 isiXhosa-medium

90%

Low-income households

73% no-fee · 16% low-fee schools

378

Children in analysis

Final sample with complete data

The ELOM Social and Emotional Functioning (SEF) Rating Scale

- SEF is increasingly recognised as being associated with the interpersonal and work-related skills required for early school performance (Alzahrani & Alodwani, 2019; Collie et al., 2019; McClelland et al., 2000; Ricardi et al., 2021).
- Socio-emotional skills were measured at the start of Grade R.
- The SEF Rating Scale, used together with the ELOM 4&5, was administered to the child's teacher to assess two key areas:

Social Relations with Peers and Adults

Emotional Readiness for School



ELOM 4&5

Administered to each child at the start of Grade R.

Direct assessment of performance in five developmental domains:



Gross Motor Development
(GMD)



**Fine Motor Coordination and
Visual Motor Integration**
(FMC-VMI)



**Emergent Numeracy and
Mathematics (ENM)**



**Cognition and Executive
Functioning (CEF)**

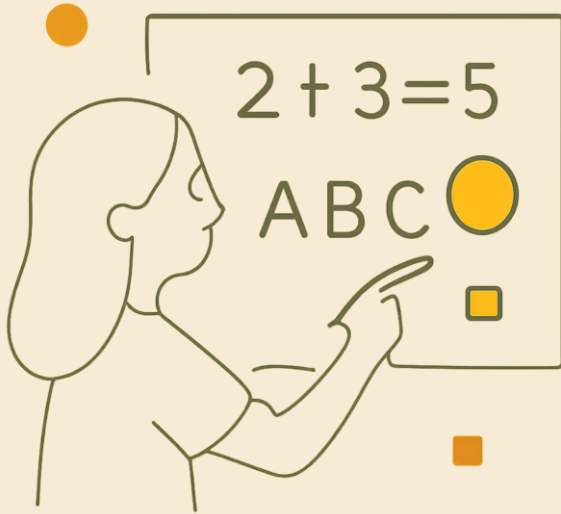


**Emergent Literacy and
Language (ELL)**

ELOM-R (v1)

ELOM-R Language

ELOM-R Mathematics



- Administered to each child at the start of Grade 1.
- Assesses language (ELOM-R Language) and mathematics (ELOM-R Mathematics) skills central to children's readiness to learn when they exit Grade R/enter Grade 1.

The Early Grade Reading Assessment (EGRA) & the Early Grade Mathematics Assessment (EGMA)



ASSESSMENT

END OF GRADE 2

EGRA

Assesses literacy skills e.g., letter-sound recognition, oral reading fluency, listening comprehension
(Dubeck & Gove, 2015)

Adapted for use in over 65 countries ✓

Reliable & valid measure in diverse contexts ✓

Versioned in 11 SA languages ✓

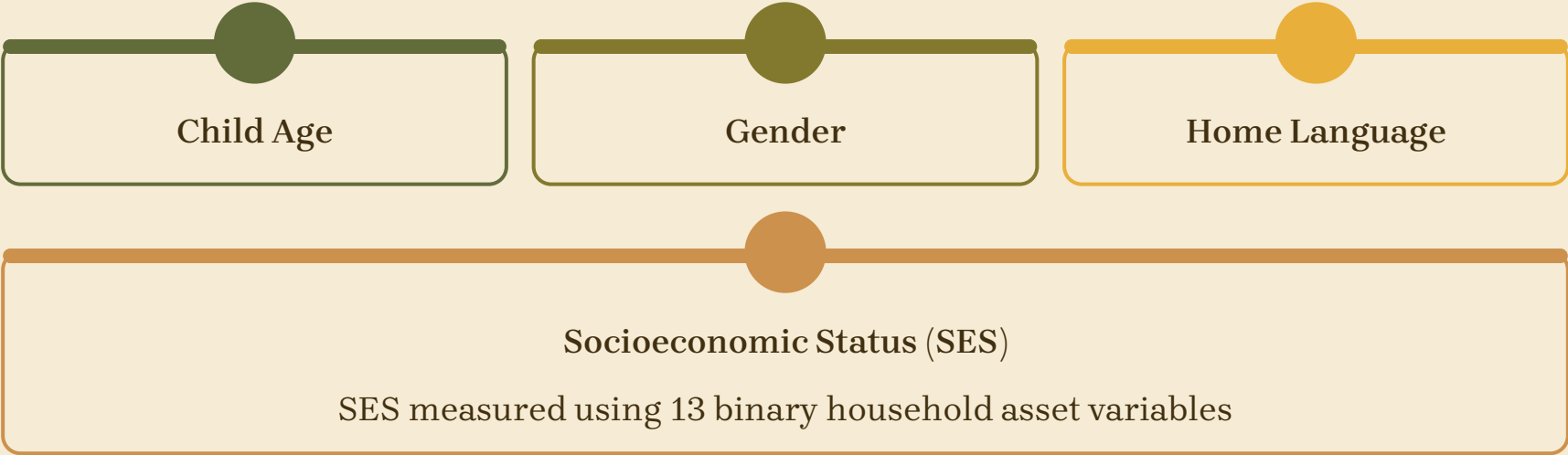
EGMA

Assesses mathematics skills e.g., number recognition, single-digit addition & subtractions, number patterns
(Platas et al., 2014).

Strong construct validity ✓

Reliable measure ✓

Demographic Data



Child Age

Gender

Home Language

Socioeconomic Status (SES)

SES measured using 13 binary household asset variables

An Asset-Based Index of SES

SES was measured by asking learners whether they had the following household assets in their homes:

- Radio
- Mobile
- Television
- Computer
- Fridge
- Bicycle
- Vehicle
- Washing machine
- Microwave
- Toilet
- Electricity
- Running water
- Hot water



An asset-based index of SES was constructed by extracting the first principal component from Principal Component Analysis.

Statistical Model

Can the ELOM 4&5 and ELOM-R (v1) assessments predict later reading and mathematics skills?

Partially mediated path model to test direct and indirect effects across three time points.

01

Three exogenous variables entered as predictors of ELOM 4&5 performance at Grade R entry.

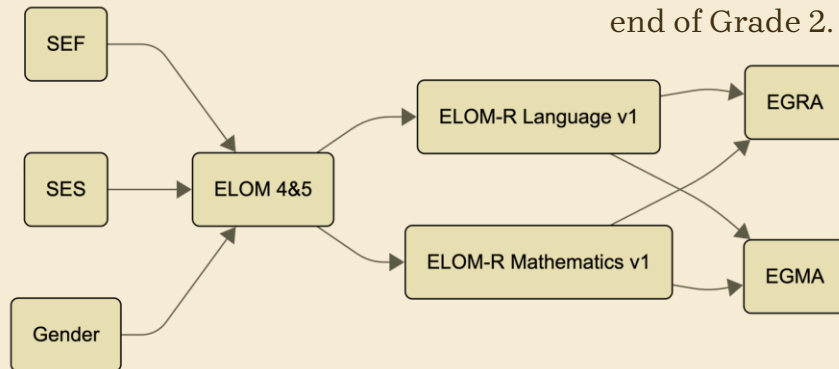
- SES (asset-based index)
- Gender
- Socio-emotional functioning

02

ELOM 4&5 as a predictor of ELOM-R Language and Mathematics performance at the start of Grade 1.

03

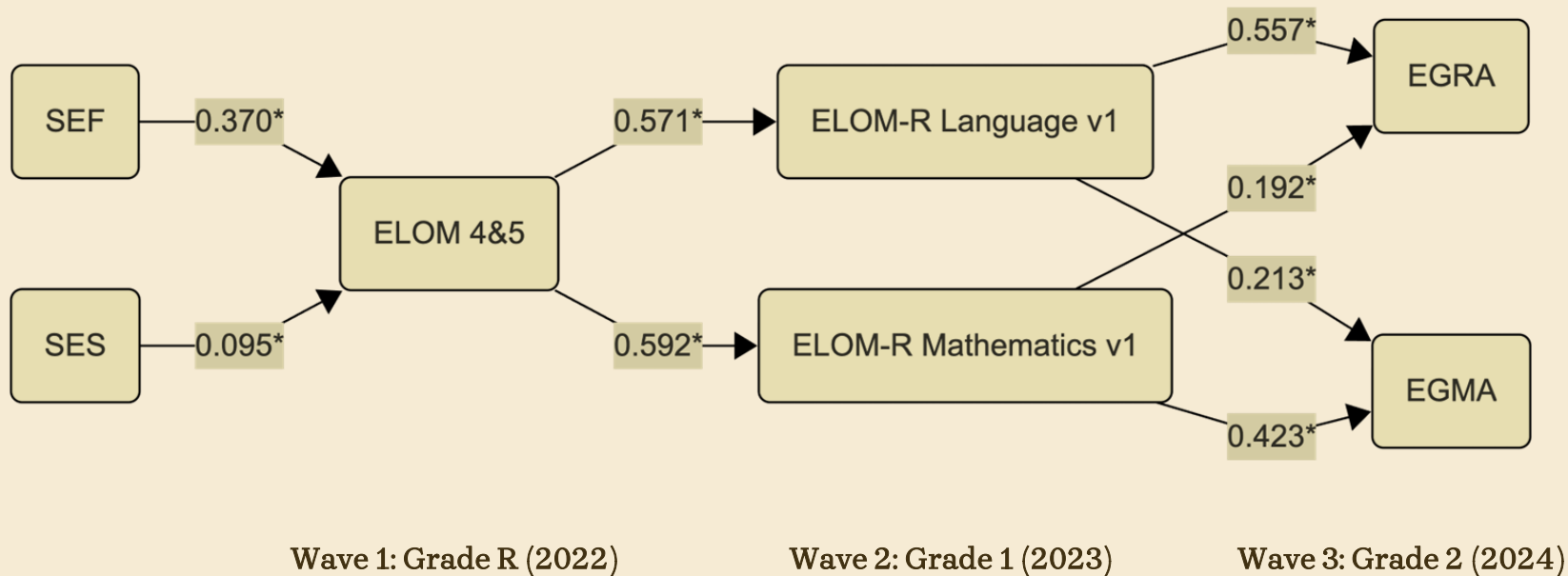
ELOM-R Language and Mathematics performance at the start of Grade 1 as predictors of reading (EGRA) and maths (EGMA) performance at the end of Grade 2.



Standardised Beta Coefficients

The figure below presents the standardised path coefficients.

Gender and covariances are excluded for clarity.



At the Start of Grade R

SES was a positive predictor of ELOM 4&5 performance »→ Children who had more household assets performed better in Grade R.

Gender was **not** a significant predictor of ELOM 4&5 performance.

Socio-emotional functioning predicted ELOM 4&5 performance »→ SEF linked to higher ELOM 4&5 scores ($\beta = 0.370, p = .000$)

FINDINGS

Grade R to Grade 1

ELOM 4&5 performance in Grade R strongly predicted ELOM-R Language ($\beta = 0.571$, $p < .001$) and Mathematics ($\beta = 0.592$, $p < .001$) performance at the start of Grade 1.

ELOM 4&5 scores explained ~32-35% of the variance in Grade 1 Language and Mathematics skills.

FINDINGS

Grade 1 to Grade 2

ELOM-R (v1) strongly predicted reading (EGRA) and maths (EGMA) performance at the end of Grade 2.

Higher scores on the ELOM-R (v1) assessments »→ stronger reading and maths skills a school year later.

ELOM 4&5 also retained significant residual direct associations with Grade 2 outcomes (explains unique variance in reading & maths achievement).

What the Evidence Tells Us

Predictive Validity

First empirical evidence of the predictive validity of both ELOM 4&5 and ELOM-R (v1) tools

Relevance

The ELOM tools capture competencies that matter for later learning and educational success

Utility

Programme evaluation, population-level monitoring, and early identification of groups of children who may require additional support



Implications

Increased Confidence

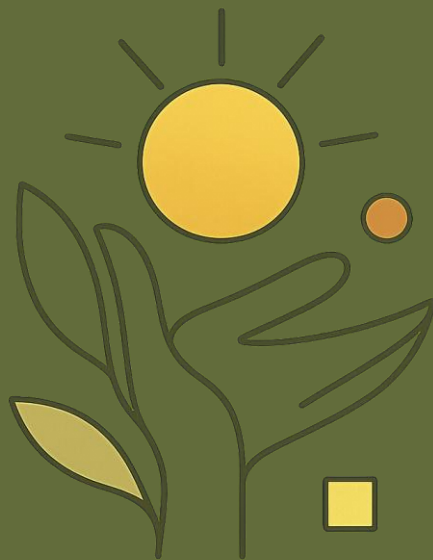
Supports continued use of ELOM tools in research, monitoring & evaluation efforts in SA

Measuring what Matters

Population-level monitoring to track children's developmental progress

Spotting & Supporting Vulnerabilities

Identify groups of children who may be at greater risk of falling behind → opportunities for timely and targeted support.



Reducing the Achievement Gap

- **Key challenge in SA:** Address socio-economic inequality & improve performance in the early grades by strengthening school readiness skills prior to Grade R.
- Access to **high quality pre-Grade R and Grade R programmes** *particularly* for Q1 – Q3 is essential.



Reducing the Achievement Gap

How?

1. Foster parent involvement:

Home, school, and community collaboration.

2. Teacher professional development:

e.g., pedagogical intervention; continuous training to build the skills and confidence of teachers to teach more effectively.

3. Government and policy:

e.g., regular, supportive monitoring; allocation of resources to strengthen programme quality & learning outcomes; provision of ongoing in-service training for ELP leaders & practitioners.



Limitations



Asset-based SES index may not fully capture other dimensions of SES e.g., income and caregiver education.



Quality of teaching & learning environments contributes to educational outcomes; limited data to control for this



SES had a relatively small effect on ELOM 4&5 scores, probably due to limited SES variation (sample homogeneity)

Questions & Discussion

Acknowledgements:

- Roots & Shoots Longitudinal Study
- DataDrive2030
- Mr Price Foundation