Language transfer between an African Home language and English: Policy lessons
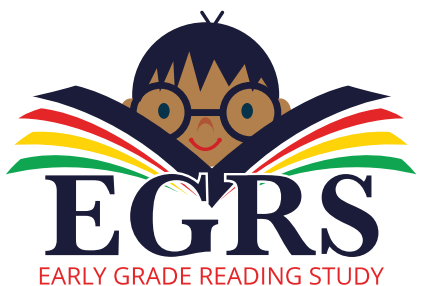
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RESEP QER CONFERENCE 2023

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EGRS
EARLY GRADE READING STUDY

BACKGROUND

The Language of Instruction question

- Developing countries typically start with mother tongue and transition to an "international language"

- Examples:

  - Botswana – one LOI nationally; Uganda and Kenya – one LOI in urban areas and mother tongue in rural areas; Rwanda – multiple changes;

  - South Africa - mother tongue until Grade 6 then English as LOI

- Decision based on language acquisition theory on learning best in mother tongue

- Evidence base from the Global North – minority acquiring a majority language, linguistically similar language pairs.

- Case of the Global South: English is a minority language, large language distance

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BACKGROUND

The Language of Instruction question

Use two Randomised Control Trials from two provinces:

1. **Is there a transfer relationship between 3 diverse pairs**
   - Mother tongues (Setswana, isiZulu, Siswati) and English First Additional Language

2. **Is there evidence for the South African early exit bilingual approach**

3. **Which language gives you the best returns to investment?**
   - Constrained funding and capacity

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Early Grade Reading Study 1

3 Interventions targeting HL literacy (Setswana) in no-fee schools

Control group	"Training" Lesson plans, reading materials + central teacher training	"Coaching" Lesson plans, reading materials + on-site coaching	"Parent Involvement"
(80 schools)	(50 schools)	(50 schools)	(50 schools)

	Training	Coaching	Parents
Total annual c.ost for 50 schools	R1.48M	R2.08M	R1.1M
Per learner annual cost	R397	R557	R295
Per learner annual cost	$22	$30.86	$16

2015: Grade 1
2016: Grade 2
2017: Grade 3 (Interventions 1 and 2 only)

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Early Grade Reading Study 1

In-person coaching impact :Grade 2
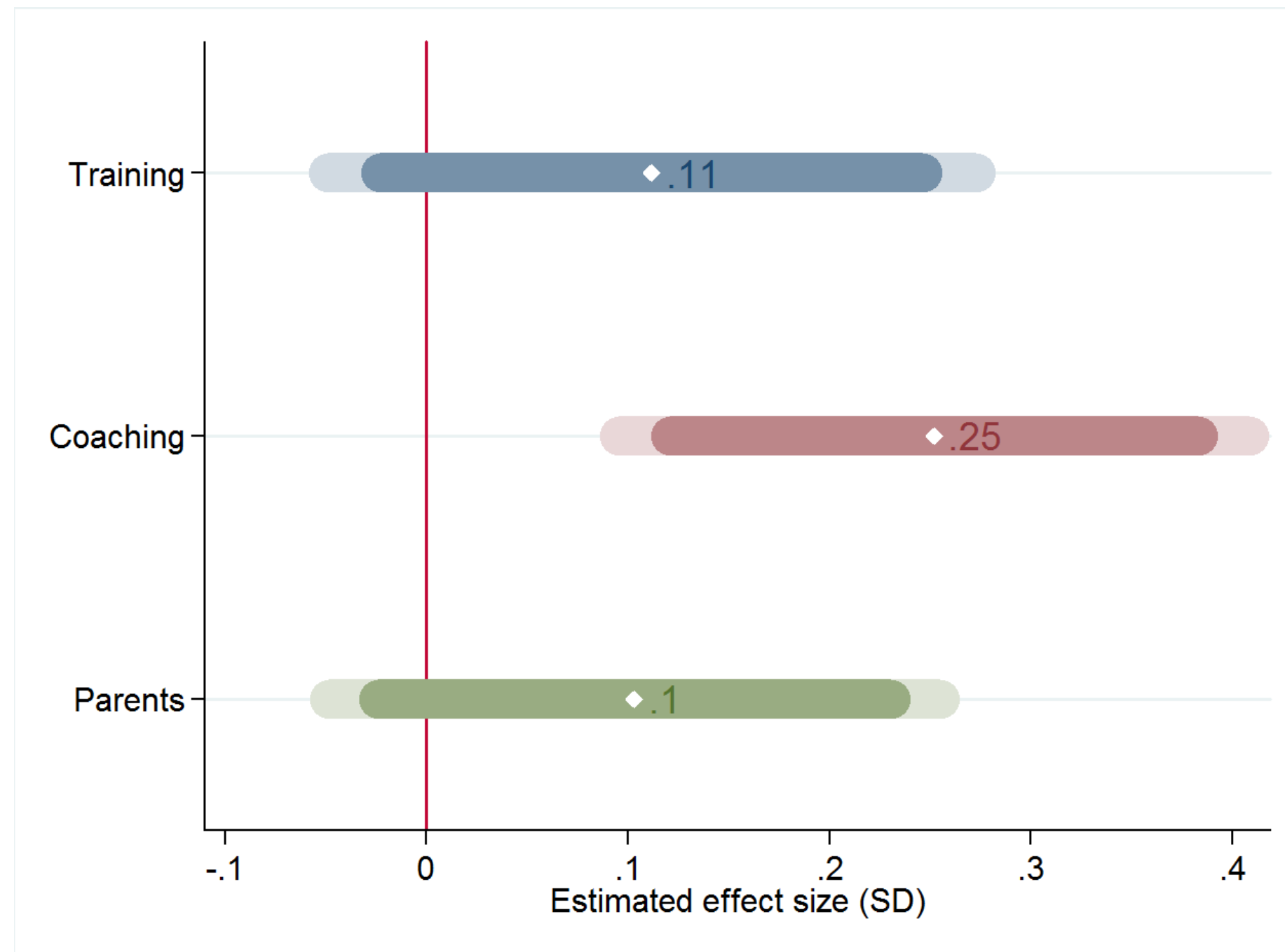
Early Grade Reading Study 2

2 Interventions targeting English First Additional Language in no-fee schools

Control group	"Virtual"	"In-person Coaching"
(80 schools)	Tablet-based Lesson plans, reading materials + Virtual coaching (50 schools)	Lesson plans, reading materials + on-site coaching (50 schools)

	On-site coaching	Virtual Coaching
Total annual cost for 50 schools	$182,920	$164,60
Per learner annual cost	$47.64	$42.88

2017: Grade 1

2018: Grade 2

2019: Grade 3
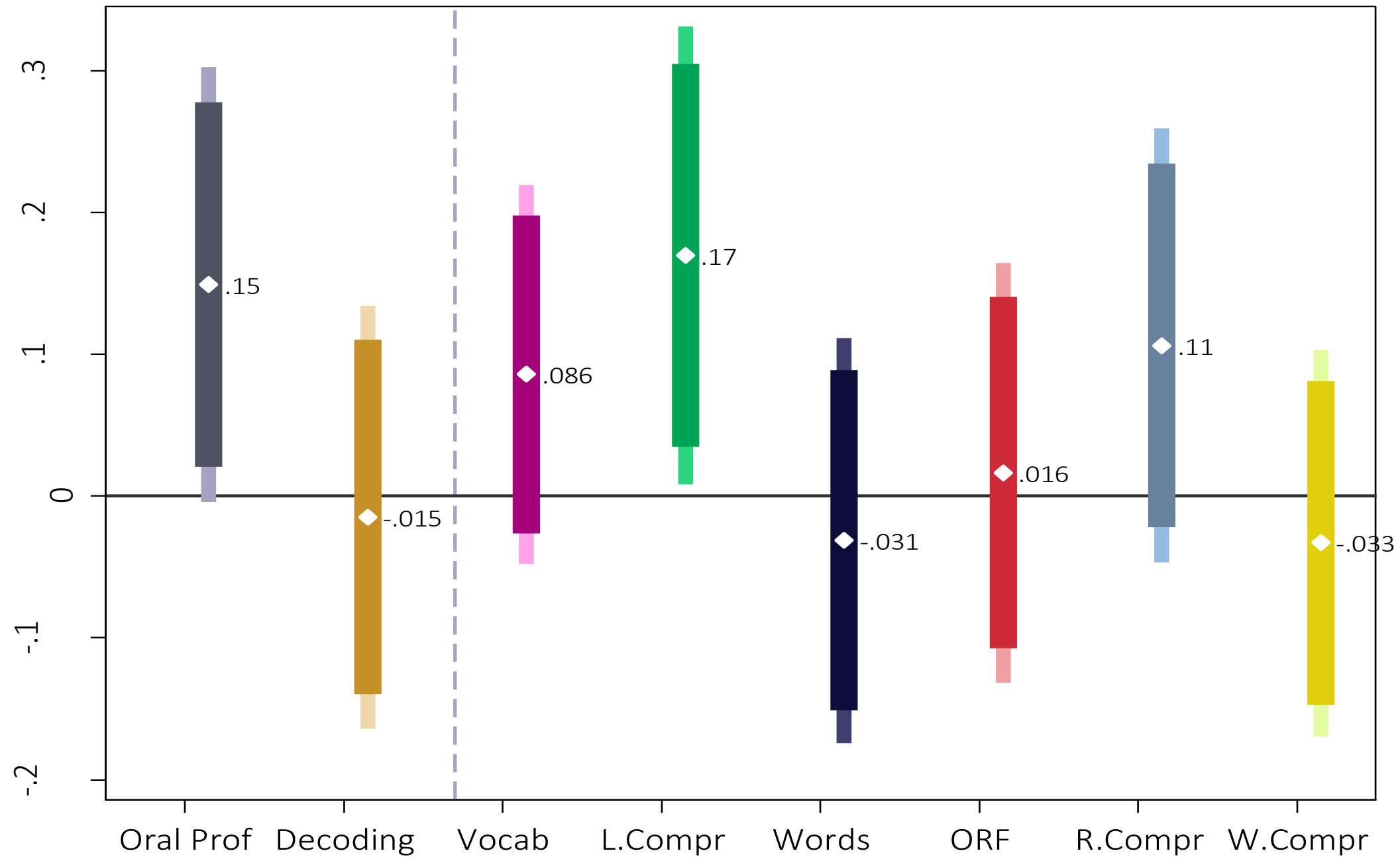
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Early Grade Reading Study 2

In-person coaching impact :Grade 3

Oral Prof	Decoding	Vocab	L.Compr	Words	ORF	R.Compr	W.Compr
.36	.18	.26	.35	.18	.12	.27	.1
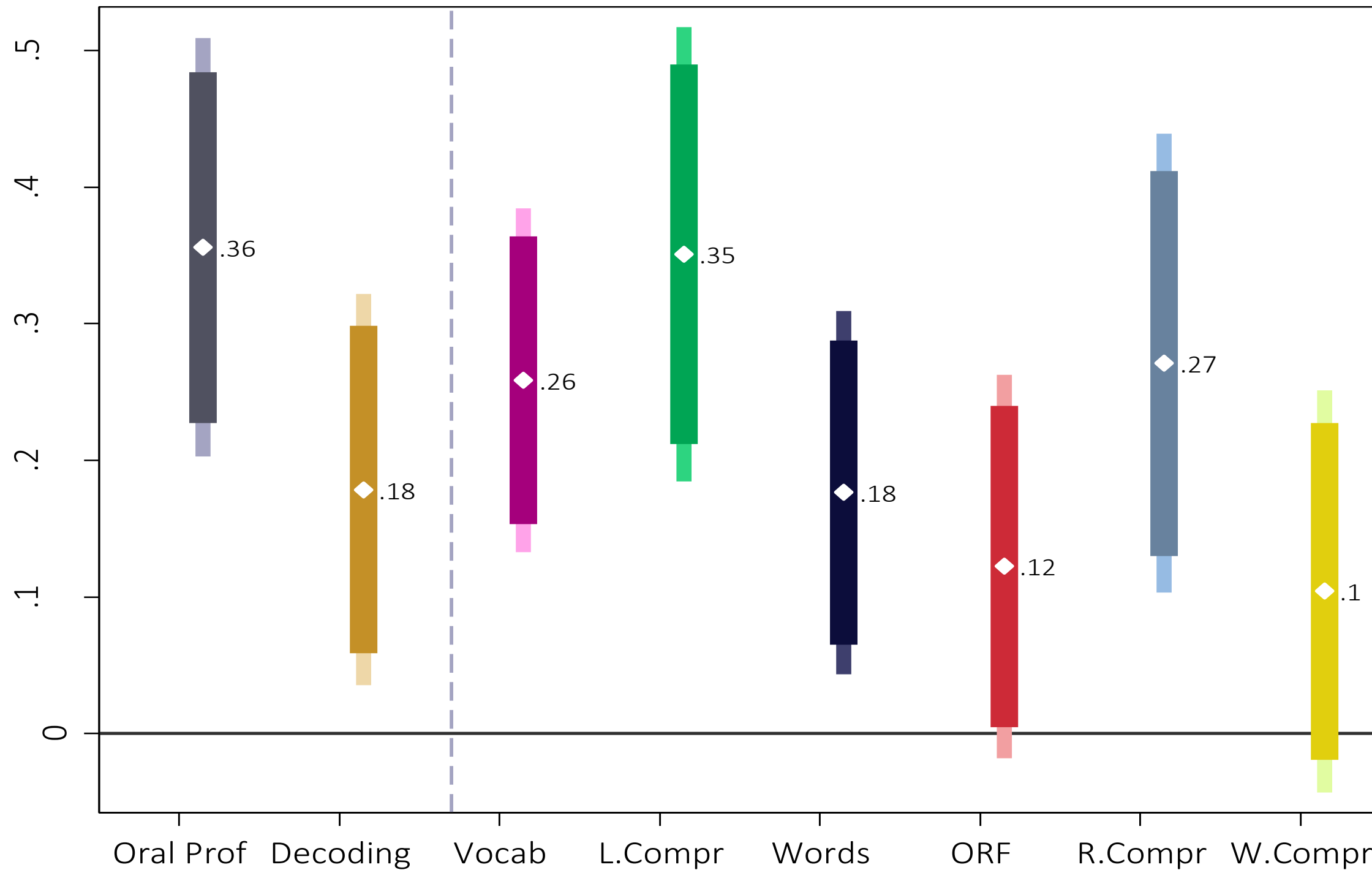
Early Grade Reading Study 2

Virtual coaching impact :Grade 3

Early Grade Reading Studies – I and II

Targeting HL literacy (Setswana) in no-fee schools

Targeting EFAL literacy in no-fee schools

Control group	**On- site coaching**	**Control Group**	**On-site coaching**
(80 schools)	Paper Lesson plans, reading materials + on-site coaching (50 schools)	(80 schools)	Paper-based lesson plans, Reading materials + on-site coaching (50 schools)

2015: Grade 1
2016: Grade 2
2017: Grade 3

2017: Grade 1
2018: Grade 2
2019: Grade 3

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Common learner assessment items

Construct	Grade 2 EGRS I		Grade 2 EGRS II		Grade 3 EGRS II		Grade 4 EGRS I		Grade 4 EGRS II	
	HL	EFAL	HL	EFAL	HL	EFAL	HL	EFAL	HL	EFAL
Letter-sound recognition	X		X		X		X			
Word reading fluency	X	X		X		X	X	X		X
ORF	X		X	X	X	X	X	X	X	X
ORF Comprehension	X		X	X	X	X	X	X	X	X
Written Comprehension							X	X	X	X

South African
Languages of
Learning and Teaching
(LoLTs)

Southern Bantu
Language Family

Western Germanic
Language Family

British and American
Sign Language
Families

Nguni Language
Group
isiNdebele
isiXhosa
isiZulu
Siswati
(Conjunctive
orthography)

Sesotho-Setswana
Language Group
Sepedi
Sesotho
Setswana
(Disjunctive
orthography)

Tswa-Ronga
Language
Group
Xitsonga
(Mainly
disjunctive
orthography)

Isolate
Languages
Tshivenḓa
(Mainly
disjunctive
orthography)

Low Franconian
Language Group
Afrikaans
(Disjunctive
orthography)

Anglo-Frisian
Language
Group English
(Disjunctive
orthographphy)

South African
Sign Language

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Language of Instruction – EGRS I and II

All three languages have transparent orthographies: there is a one-to-one mapping in the grapheme–phoneme relationship, unlike English which has an opaque orthography and a more complex mapping.

They are however distinct in their morphology (i.e., how words relate to each other).
- isiZulu and Siswati, conjunctive morphology; i.e. one word may represent a sentence (Khumalo, 1987).

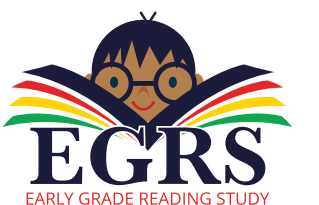 *"Kunesihambi esasilambile kakhulu"*

- Setswana has a disjunctive morphology with short word segments written separately from suffixes and prefixes For example, the sentence "there was a stranger who

  "Go na le moeng o a neng a tshwere ke tlala thata"

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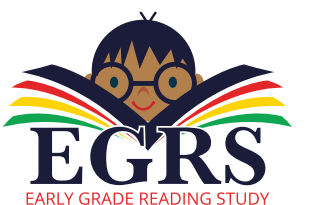   *"Kunesihambi esasilambile kakhulu"*

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Implementation Quality

	EGRS I	EGRS II
Panel A. Teacher surveys	Mean	Mean
Received training beginning of the year	**94%**	**95%**
Access to graded reading booklets	**90%**	**96%**
Use graded reading booklets		**93%**
Access to lesson plans	**90%**	
Use lesson plans		**85%**
Use lesson plans daily		**79%**
Panel B. Impact on teaching practices	Coef./(SE)	Coef./(SE)
Group-guided reading	0.378***	0.293***
	(0.157)	(0.148)
Pupils read individually to teacher	0.397***	0.333***
	(0.202)	(0.121)

Main results

	(1)	(2)	(3)	(4)
	Home Language		English	
	ORF	Reading compr.	ORF	Reading compr.
Panel A. Improving home language (L1) instruction (EGRS I)				
Coaching	7.159***	0.058***	3.561*	0.024*
	(1.972)	(0.015)	(2.026)	(0.013)
Control mean	47.357	0.298	39.131	0.166
Observations	1846	1846	1846	1846
R-squared	0.176	0.163	0.157	0.128
Panel B. Improving English second language (L2) instruction (EGRS II)				
Coaching	-2.774***	-0.033*	-1.151	0.030*
	(1.024)	(0.019)	(2.025)	(0.017)
Control mean	25.093	0.448	36.480	0.230
Observations	1729	1729	1729	1729
R-squared	0.284	0.220	0.253	0.237

Attrition 28% in each study– balanced across treatment & control

Notes. Each column in each panel is a separate regression, estimated using equation 1. Panels A and B use data from the ERGS I and II, respectively. Data collection took place one year after the program ended, four years after the start of the program, when non-repeating students in our sample were in grade 4. The dependent variables in the first two columns relate to home language literacy; the dependent variables in the remaining columns relate to English literacy. Standard errors are in parentheses and clustered at the school level. All estimations include strata fixed effects and baseline controls. * p<0.1 **p<0.05 ***p<0.01. EGRS=Early Grade Reading Study.

Policy lessons

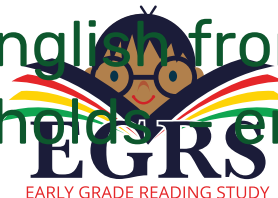1. **Theoretical and academic contribution**

   - Contribution of Global South evidence – multilingual, different position of English

   - Causal contribution to measuring language transfer

1. **Mother tongue instruction is best**

   - Rule out differences due to implementation fidelity –high fidelity in both studies

   - Rule out crowding out, but different number of hours for Mother Tongue and EFAL

   - Pedagogical skills may transfer, distinct for the languages AND bundled interventions

   - If generic improvements in teaching practice caused improvement in both L1 and L2 in EGRS 1, then one would also expect it to apply the other way around in EGRS II, which is not the case.

2. **Early exit bilingual policy**

   - There is no evidence for early exit from Mother Tongue to English
   - While learning English from grade 1 is possible – insufficient mastery for LOI
   - language thresholds – empirical testing evidence on skill

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Policy lessons

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Evidence for my position

Taylor and von Fintel (2016)

- Positive impact of learning in African Home Language in Grade 4 to 6
- AND positive impact on learning in English
- Using Annual National Assessments data for grades 1 to 6 for AHL and EHL learners in Quintile 1–3 schools

Erikson (2014)

- 1.5% to 4% increase in the earnings of males aged 28 to 48 years old
- Examining the effect of the 1955 Bantu Education Act extending Home Language learning from four years to six years using the 1980 census

Empirical studies in Africa shown positive impact in Botswana, Tanzania, Ethiopia and Kenya (Heugh, 2000; Ouane & Glanz, 2010; Piper et al., 2016)

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Thank you