

BACKGROUND:

Chichewa = lingua franca & a language of instruction in Malawi

90%

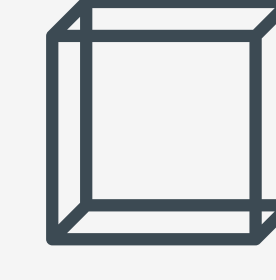
of 2nd graders cannot read a single word of Chichewa text



Difficulty separating children at risk for reading difficulties from inadequate instruction



Existing beginning sounds task (oral and with short-term memory demands) not identifying struggling readers



Chichewa has a transparent orthography & the syllable is a salient linguistic unit



Double deficit shown in opaque & transparent orthographies, yet to be explored in Chichewa or Bantu languages

RESEARCH QUESTION:

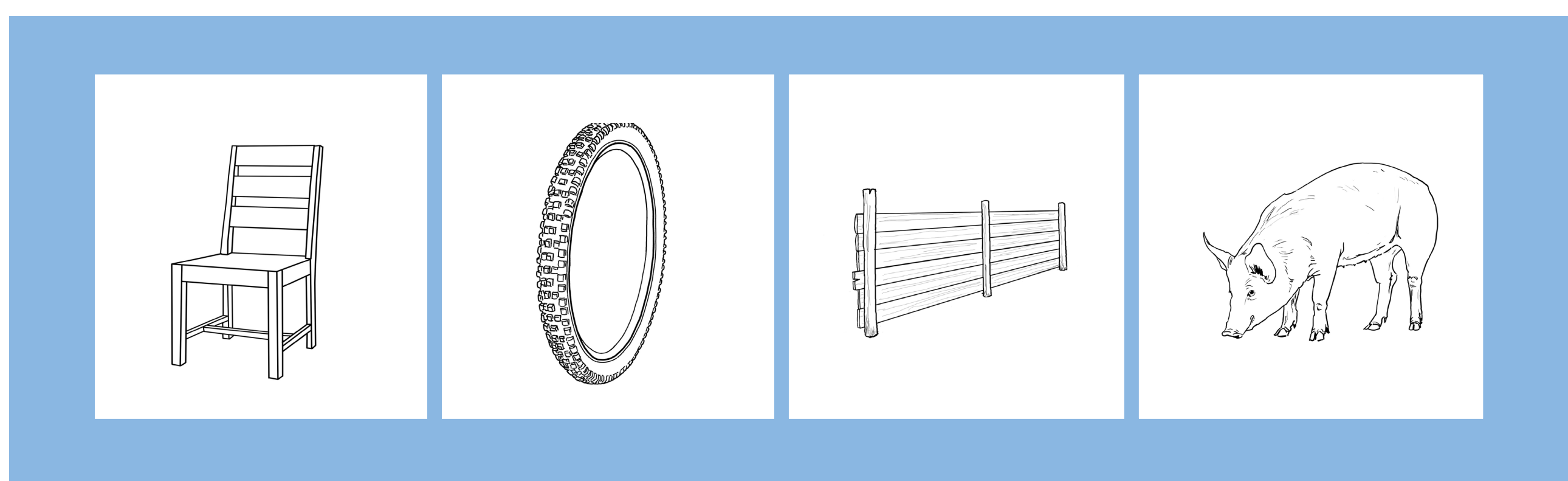
“Do children with deficits in both phonological awareness and rapid automatic naming (RAN) in Chichewa experience more difficulty with reading growth than children with single or no deficits?”

METHODS

- Included with monitoring, 4 time points during 2015–2016 school year: October, January, March, June
- Participants n=3,901 students in 33 governmental schools in 1st, 2nd, 3rd grade resampled each timepoint
- Data collected using Tangerine software

NEW MEASURE: INITIAL SYLLABLES

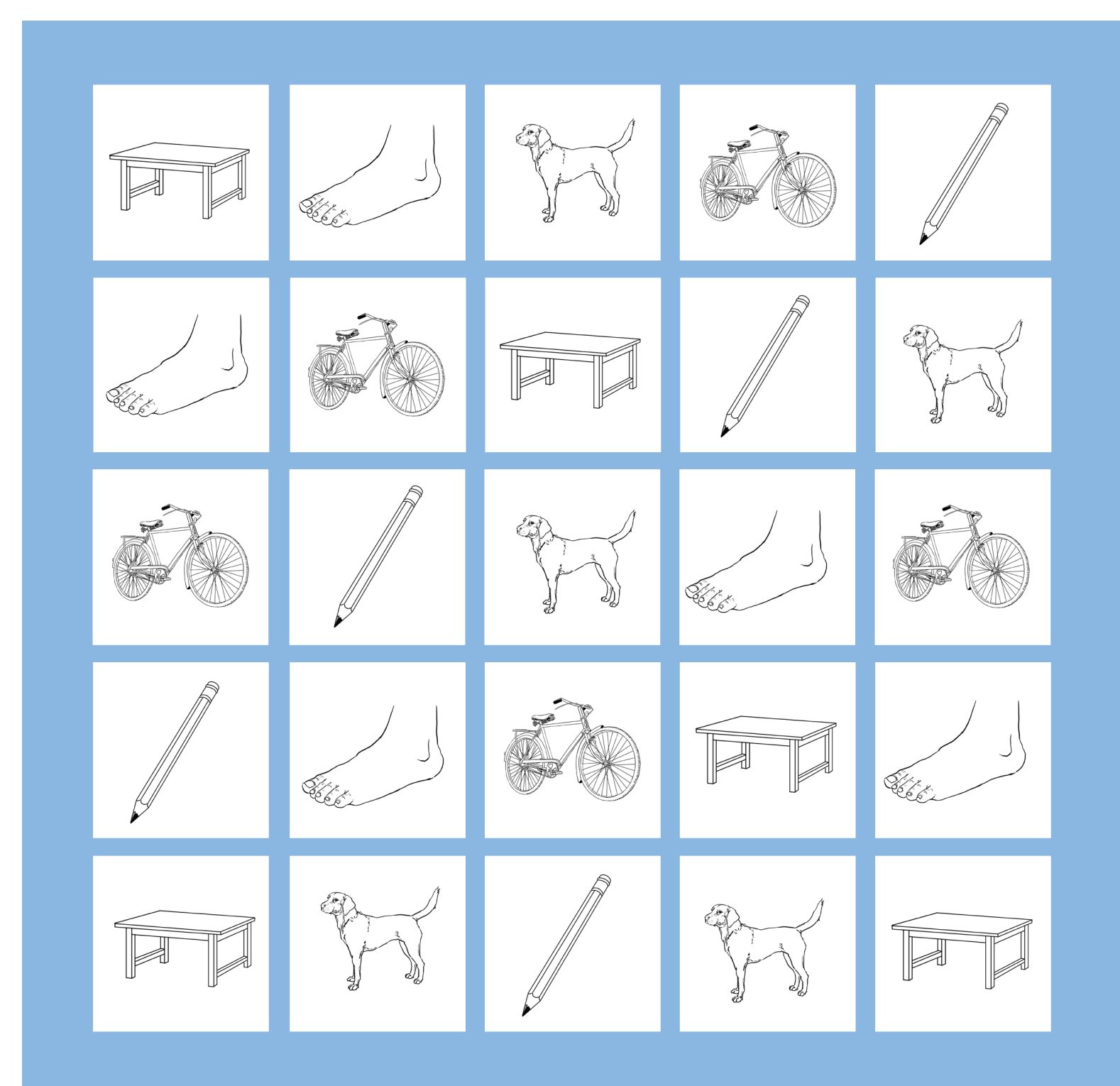
- 10 items with common beginning Chichewa syllables
- Child sees images as they are identified by the assessor and identifies the word with the same beginning syllable as the target word



PA deficit = below the grade level mean, at that time point

NEW MEASURE: RAPID AUTOMATIC NAMING (RAN)

- 5 objects common to Malawi repeated in a grid of 50
- Verified that child knew objects before proceeding
- Avoids the need to know letters, numbers, or colours
- Child names items, from left to right, top to bottom
- Total seconds taken noted



RAN deficit = longer to finish the task than the average student in their grade, at that time point

OTHER EXISTING MEASURES:

- Familiar Words: read 50 individual words, timed
- Oral Reading Fluency: read connected text, timed
- Initial Sounds
- Syllable Sounds

RESULTS

Minimal growth from Time 1 to Time 4 in the Double Deficit group compared to the No Deficit group. Rarely does the Double Deficit group at Time 4 reach the score of the No Deficit group at Time 1.

Single Deficit and Double Deficit groups have similar average scores at Time 1; by Time 3 and Time 4, the Single Deficit group pulls away, more than doubling the average score of counterparts at Time 4.

GRADE 1 ORAL READING FLUENCY					GRADE 1 FAMILIAR WORDS (% CORRECT)			
	Time 1	Time 2	Time 3	Time 4	Time 1	Time 2	Time 3	Time 4
No Deficit	0.6	2.7	4.8	12	1.1	5.5	10.1	23.6
PA or RAN Deficit	0.1	0.1	1.4	4.2	0.2	0.4	3.6	8.9
Double Deficit	0.1	0.2	0.1	0.4	0	0.3	0.6	1.5

GRADE 2 ORAL READING FLUENCY					GRADE 2 FAMILIAR WORDS (% CORRECT)			
	Time 1	Time 2	Time 3	Time 4	Time 1	Time 2	Time 3	Time 4
No Deficit	5	11.4	19.5	26.8	11.4	22.6	37	47.7
PA or RAN Deficit	2.4	4.3	8.2	14.2	4.8	8.3	15.6	27.2
Double Deficit	1.5	3.8	3	5.1	2.6	7.2	6.6	10.3

GRADE 3 ORAL READING FLUENCY					GRADE 3 FAMILIAR WORDS (% CORRECT)			
	Time 1	Time 2	Time 3	Time 4	Time 1	Time 2	Time 3	Time 4
No Deficit	16.4	28.2	36.7	43.8	29.3	50.1	62.5	71.8
PA or RAN Deficit	8	22.3	21.6	35.2	15.4	39.3	36.8	60.9
Double Deficit	7.1	10	15.3	16.3	13	18.8	30	33.5

LIMITATIONS & RECOMMENDATIONS

- ➡ Need a longitudinal design following individual children instead of cohort samples.
- ➡ Need to examine relationship of PA and RAN to non-word (pseudoword) reading.
- ➡ Need to examine Double Deficit category with other Phonological Awareness measures.
- ➡ Consider including naming of overlearned stimuli in similar contexts as a screener.
- ➡ Instruction needs to be differentiated for children with a Double Deficit profile.

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