

The Response of English Language Learners to English-language Dyslexia Intervention: Post intervention

Marcela Davila, MS; Anna E. Middleton, PhD, CALT; Sheryl Frierson, MD, MEd
Scottish Rite for Children, Dallas, Texas

INTRODUCTION

- The National Reading Panel (2000) identified that language minority students, e.g., English Language Learners (ELL) benefit from English language reading instruction that provides substantial coverage in phonemic awareness, phonics, fluency, vocabulary, and text comprehension.¹
- English language dyslexia intervention (ELDI) programs with the strongest evidence of effectiveness for English Language Learners with dyslexia (ELL-D) are programs that have also been found to be effective for English monolingual students with dyslexia (non-ELL-D).¹
- Since 2000, few studies have investigated reading development among ELL-D compared to non-ELL-D.²
- Reading for comprehension is the ultimate goal for reading instruction. Current evidence indicates that both code-based competencies (decoding, fluency) and meaning related skills (vocab, linguistic comprehension) contribute to reading comprehension development for ELL.²

RESEARCH QUESTION

What is the influence of an ELDI for ELL-D students in comparison to non-ELL-D peers?

Hypothesis: ELL-D and non-ELL-D will demonstrate similar growth in reading skills.

METHODS

Intervention

- Students received ELDI for 4-5 hours per week over two full academic years.
- All instruction provided was comprehensive, evidence-based, Orton-Gillingham approach.
- Testing was conducted three times, before and after the first year of intervention, and at the end of the second year.

Measures

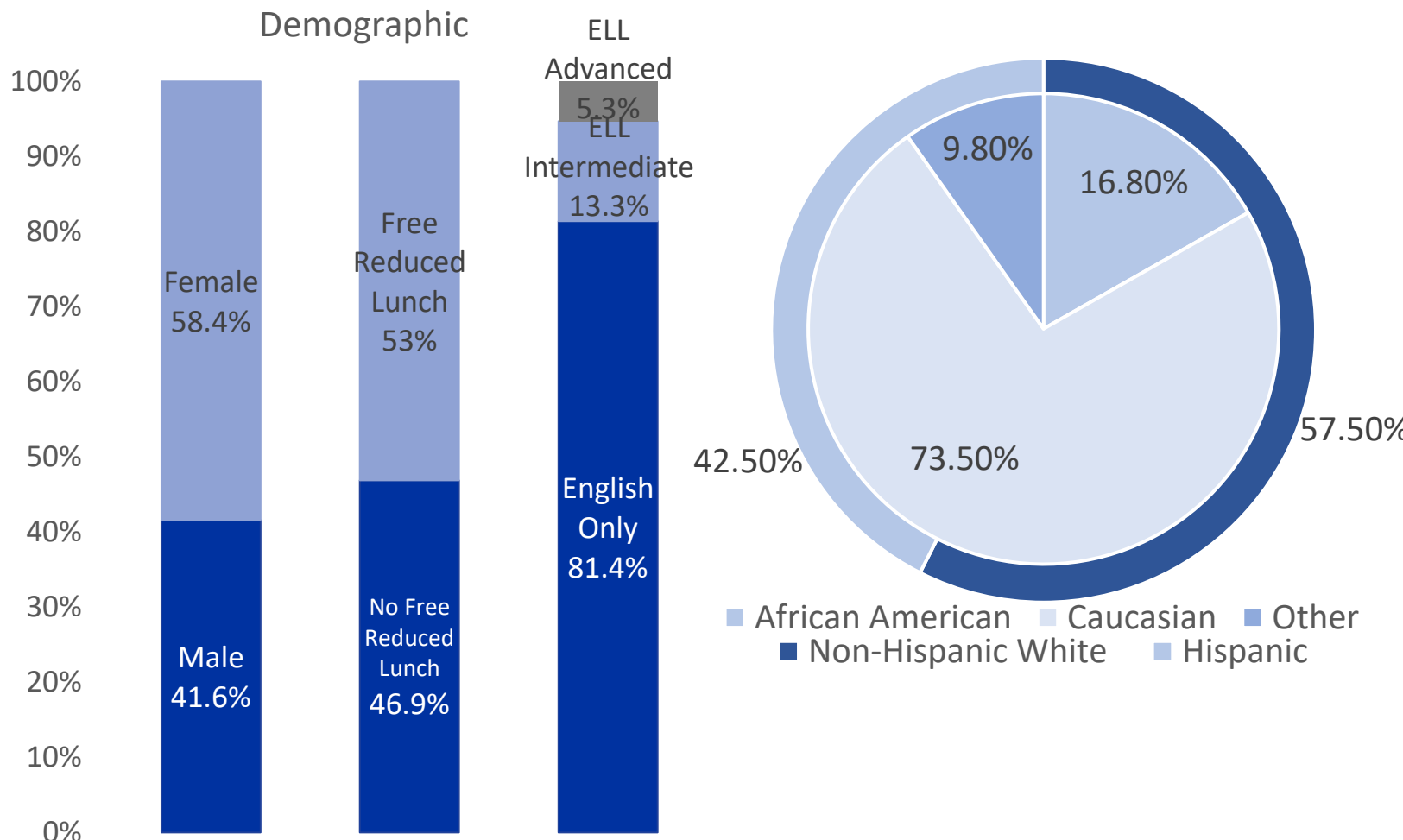
- Phonological Awareness: Comprehensive Test of Phonological Processing (CTOPP)
- Letter Sound Knowledge: Word Identification and Spelling test (WIST)
- Word Attack and Passage Comprehension: Woodcock Reading Mastery Test (WRMT)

REFERENCES

¹Goldenberg, C., & Cárdenas-Hagan, E. (2023). Literacy Research on English Learners: Past, Present, and Future. *The Reading League*, 4(1), 12-20.
²Miciak, J., Ahmed, Y., Capin, P., & Francis, D. J. (2022). The reading profiles of late elementary English learners with and without risk for dyslexia. *Annals of Dyslexia*, 72(2), 276-300.

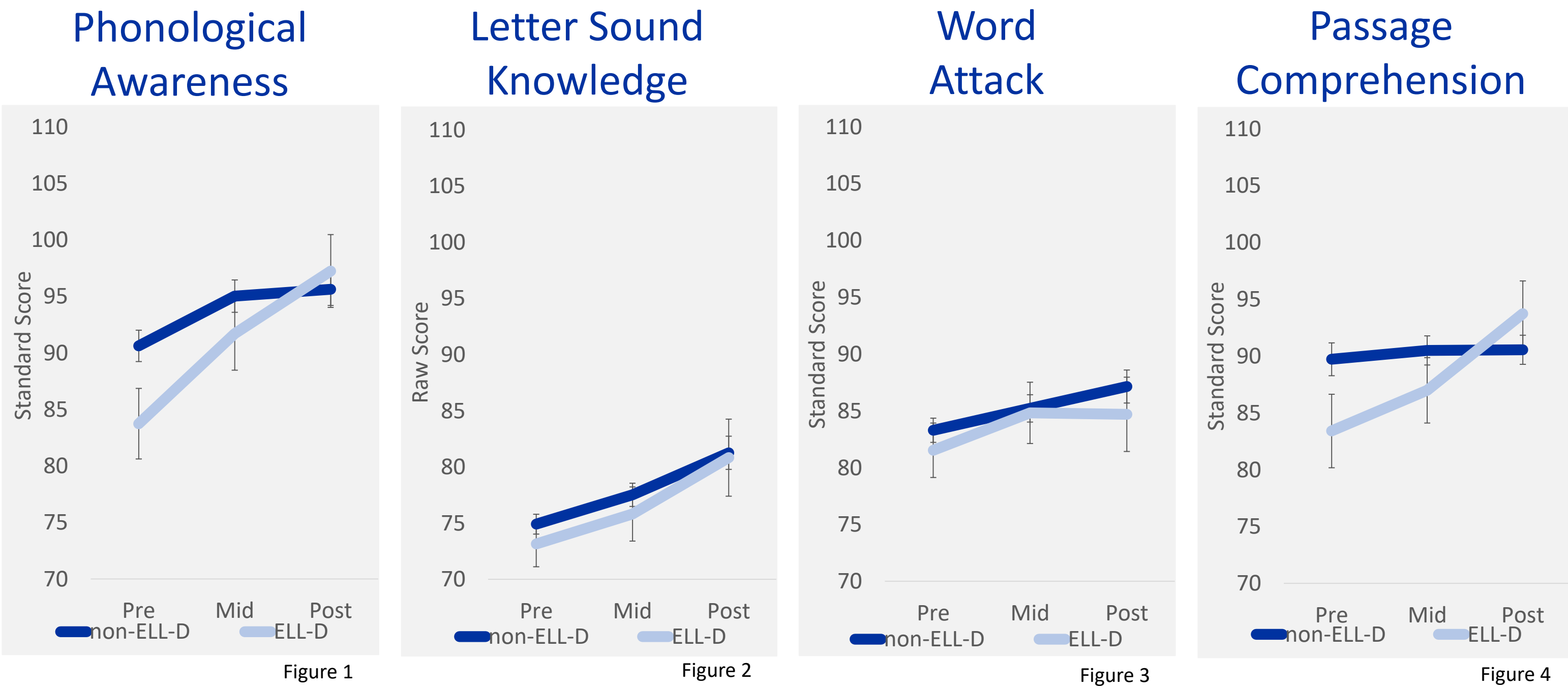
PARTICIPANTS

- Children in 2nd-5th grade (median: 3rd grade for non-ELL-D and ELL-D) in several schools in one region of the Southwest U.S. were identified by their public school with dyslexia and received ELDI as described in Methods.
- Testing was conducted on 114 students (age mean: non-ELL-D: 8y;5m, ELL-D: 9y;1m) before intervention, one year later, and after intervention. (non-ELL-D = 92, ELL-D = 21; English proficiency intermediate: 15, advanced: 6).



ANALYSIS & RESULTS

A series of 2 (Group: non-ELL-D, ELL-D) by 3 (Time: Pre-, Mid-, & Post-test) RM ANCOVAs were run on CTOPP PA, WIST LSK, WRMT WA, and WRMT PC ability, covarying mean centered age, and free/reduced lunch (FRL).



Figures 1-4. Group means on outcome measures at baseline, after year one, and end of year two
Note: Error bars represent standard error based on estimated marginal means adjusted for model covariates.

Table 1. Group Means on Outcome Measures at Pre-, Mid-, & Post-Test Timepoints. SD in Parentheses.

Outcome	non-ELL-D			ELL-D		
	Pre	Mid	Post	Pre	Mid	Post
PA (SS)	90.63 (1.39)	95.03 (1.43)	95.63 (1.43)	83.75 (3.12)	91.71 (3.23)	97.25 (3.22)
LSK (RS)	49.37 (1.26)	61.60 (1.26)	66.70 (1.38)	45.88 (2.84)	58.32 (2.84)	68.20 (3.13)
WA (SS)	83.29 (1.07)	85.22 (1.20)	87.14 (1.45)	81.53 (2.40)	84.82 (2.70)	84.69 (3.27)
PC (SS)	89.72 (1.44)	90.50 (1.28)	90.56 (1.28)	83.41 (3.24)	86.99 (2.88)	93.74 (2.88)

RESULTS

Table 2. Repeated Measures ANCOVA on Phonological Awareness skills.

	df	MS	F	p	η_p^2
Time	2	936.24	15.50	0.00	0.12
Time*ELL-D	2	242.59	4.02	0.01	0.03
ELL-D	1	327.09	0.81	0.37	0.00
Error	216	60.39			

Table 3. Repeated Measures ANCOVA on Letter-Sound Knowledge.

	df	MS	F	p	η_p^2
Time	1.66	710.14	16.79	0.00	0.14
Time*ELL-D	1.66	8.41	.19	0.77	0.00
ELL-D	1	62.70	0.23	0.63	0.00
Error	171.11	42.27			

Table 4. Repeated Measures ANCOVA on Word Attack skills.

	df	MS	F	p	η_p^2
Time	2	161.06	2.83	0.06	0.02
Time*ELL-D	2	14.58	0.25	0.77	0.00
ELL-D	1	94.39	0.32	0.57	0.00
Error	216	56.85			

Table 5. Repeated Measures ANCOVA on Passage Comprehension skills.

	df	MS	F	p	η_p^2
Time	2	105.53	2.08	0.12	0.01
Time*ELL-D	2	316.32	6.23	0.00	0.05
ELL-D	1	195.93	0.53	0.46	0.00
Error	216	50.71			

CONCLUSIONS

- In our sample, ELL-Ds and non-ELL-Ds showed growth over time in reading readiness skills (phonological awareness and letter sound knowledge) and reading skills (word attack and passage comprehension).
- ELL-Ds began with lower scores in phonological awareness and passage comprehension but with ELDI, they were able to catch up to the non-ELL-Ds.
- Our results suggest that ELL-Ds benefit from ELDI, and in our sample, they achieved the same level of reading mastery as the non-ELL-Ds.