

Table S1

Meta-Analytic Results: Overall Standardized Mean Differences for Reading Accuracy, Reading Fluency, and Reading Comprehension

Reading Outcome	<i>k</i>	<i>n</i>	<i>Effect Size</i>	<i>SE</i>	<i>z</i>	<i>p</i>
Reading Accuracy	22	881	1.221	0.140	8.729	< .0001
Reading Fluency	9	185	0.802	0.108	7.401	< .0001
Reading Comprehension	16	763	0.499	0.117	4.257	< .0001

Table S2

Meta-Analytic Results: Population Intervals and Heterogeneity Analyses for Reading Accuracy, Reading Fluency, and Reading Comprehension

Reading Outcome	PI_{lower}^a	PI_{upper}^a	I^2 (%)	Q	p
Reading Accuracy	0.159	2.283	81.70	79.551	< .0001
Reading Fluency	0.779	0.824	0.120	7.761	0.4572
Reading Comprehension	-0.227	1.225	75.14	53.859	< .0001

^aThese population intervals are based on 95% confidence intervals.

Table S3

Sensitivity Analyses for Different Correlation Values: Overall Standardized Mean Differences for Reading Accuracy, Reading Fluency, and Reading Comprehension

Correlation values	Reading Accuracy		Reading Fluency		Reading Comprehension	
	<i>Effect Size</i>	<i>p</i>	<i>Effect Size</i>	<i>p</i>	<i>Effect Size</i>	<i>p</i>
0	1.219	<.0001	0.804	<.0001	0.494	<.0001
0.2	1.223	<.0001	0.803	<.0001	0.504	<.0001
0.4	1.228	<.0001	0.806	<.0001	0.515	<.0001
0.6	1.233	<.0001	0.808	<.0001	0.526	<.0001
0.8	1.238	<.0001	0.809	<.0001	0.538	<.0001
1	1.242	<.0001	0.809	<.0001	0.549	<.0001

Table S4

Results of Publication Bias Analyses

Outcome Measures	Fail-Safe N	Egger's Method		Rank Correlation Test		“Trim and Fill” Procedure	
		z	p	Kendall's tau	p	Imputed	Corrected effect sizes
Reading Accuracy	2897	3.008	0.003	0.290	0.062	4	1.046
Reading Fluency	178	1.154	0.248	0.444	0.119	-	-
Reading Comprehension	304	3.423	0.000	0.433	0.020	8	0.133

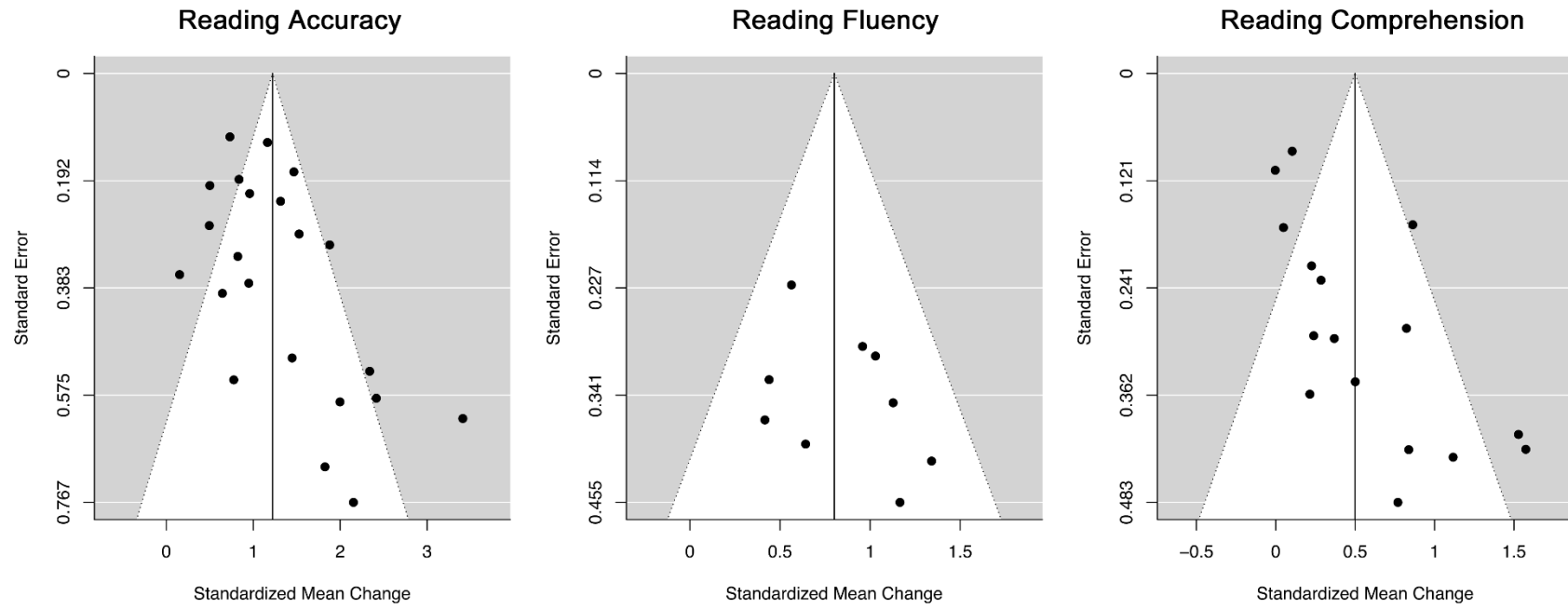


Figure S1. *Funnel plots for reading accuracy, reading fluency, and reading comprehension.*

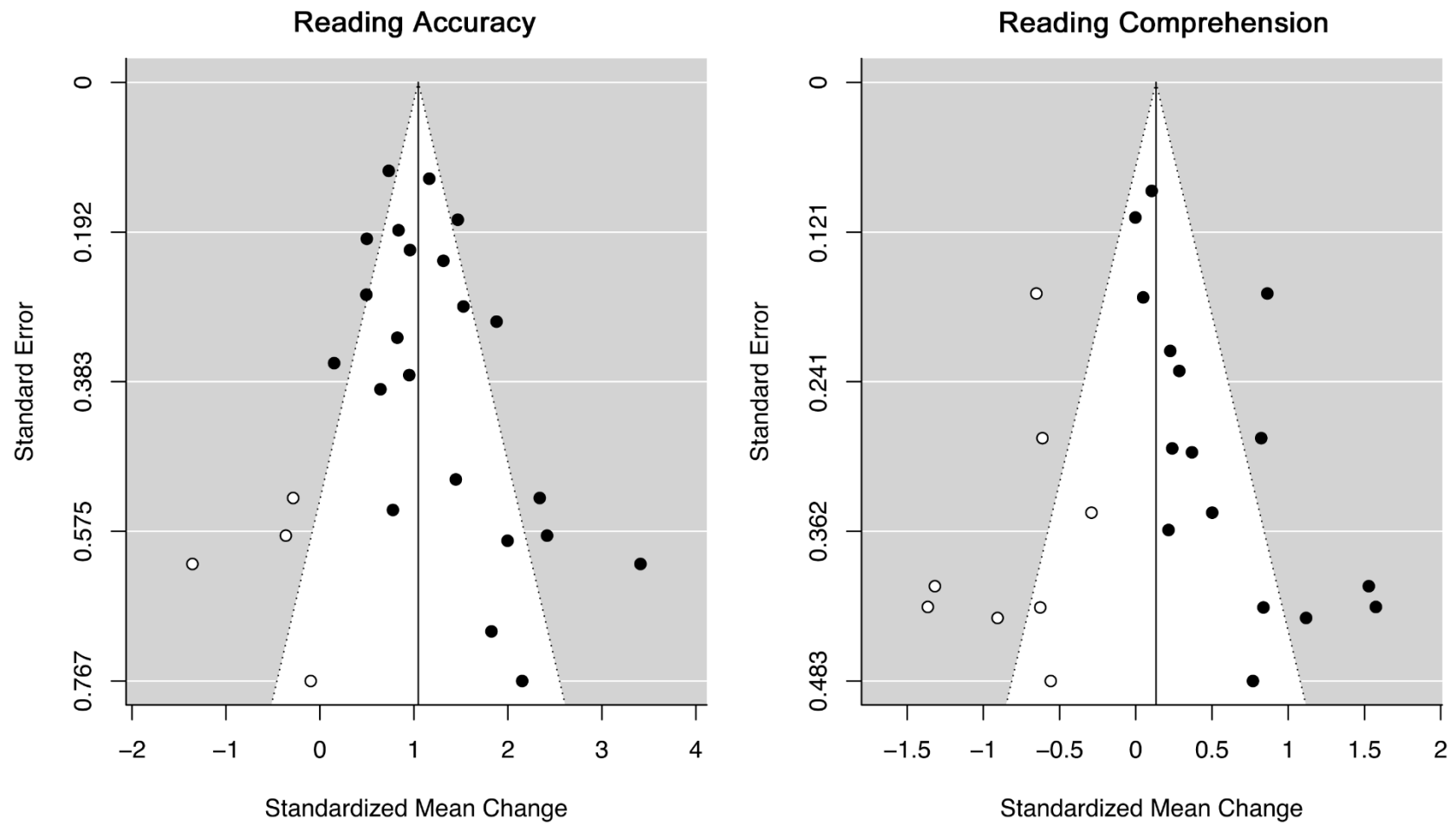


Figure S2. *Funnel plots with imputed samples for reading accuracy and reading comprehension.*

Appendix A

Participant Characteristics in Each Study Included in the Meta-Analysis

Study	<i>n</i> ^a	Grade	Mean age in year (age range)	First Language	Students' Risk Status
Barber et al. (2014)	236 (484)	6, 7	-	Mix (Spanish, African languages, Asian languages, multiethnic)	At risk
Begeny et al. (2012)	13 (21)	2	7.76	Spanish	Not at risk
Booth (2014)	12 (24)	8	(12-14)	Mix (Spanish, Arabic, Vietnamese, Portuguese, Somali, Gujarati)	Not at risk
Dussling (2016)	7	1	6.19 (6-6.58)	Mix (Tamil, Bosnian, Turkish, Russian, French, Lingala, Tshiluba)	At risk
Kemp (2006)	39 (158)	3	-	Mix (Spanish, Asian languages, African languages)	Not at risk
La Von Bridges (2006)	18 (38)	4, 5, 6	-	Mix (Spanish, Tagalog, Hmong, Samoan, Lao, Rumanian, Korean, Russian, Albanian, Arabic)	At risk
Leafstedt et al. (2004)	16	K	-	Spanish	At risk
Linan-Thompson et al. (2003)	(8) 26	2	-	Spanish	At risk
Lovett et al. (2008)	60 (166)	2-8	10.22	Mix (Portuguese, Spanish, Tagalog, Italian, Arabic, Syrian, Urdu)	At risk
McElvain (2010)	75 (150)	4-6	(9-12)	Mix (Spanish, Chinese, Vietnamese, Japanese, Korean)	At risk
McMaster et al. (2008)	20 (40)	K	5.78	Not Reported	Not at risk
Nelson et al. (2011)	93	K	-	Spanish	Not at risk
Rodriguez et al. (2012)	14 (28)	1	7 (6-8)	Spanish	Not at risk
Swartzendruber (2007)	9 (35)	2	(7-9)	Not Reported	At risk

Study	<i>n</i> ^a	Grade		First Language	Students' Risk Status
Solari & Gerber (2008)	T1 at risk: 7 T1 not at risk: 13 T2 at risk: 7 T2 not at risk: 14	K	5.5	Spanish	Mix of at risk and not at risk
Vadasy & Sanders (2010)	38	K	(4-7)	Mix (Spanish, Vietnamese, Chinese, Somali, Tagalog)	Not at risk
Vadasy & Sanders (2011)	48	1	-	Mix (Spanish, Vietnamese, Chinese, Somali, Tagalog)	At risk
Vadasy & Sanders (2015)	T1: 51 T2: 49	K	5.51 (5.06-6.21)	Mix of 17 languages	Not at risk
Vadasy et al. (2015)	T1: 163 T2: 161	K	5.61 (4.69-7.79)	Mix (Spanish, African languages, Asian languages)	Not at risk
Vanderwood et al. (2014)	12 (105)	1	(6-7)	Spanish and African Languages	Mix of at risk and not at risk
Vaughn et al. (2006a)	43 (91)	1	6.6	Spanish	At risk
Vaughn et al. (2006b)	22 (41)	1	6.59	Spanish	At risk
Vaughn et al. (2017)	236 (1629)	8	-	Mostly Spanish	
Villanueva (2015)	T1:21 T2: 21	2	-	Not Reported	Not at risk
Walter (2010)	20 (20)	K	-	Spanish	At risk
Wanzek & Roberts (2012)	T1: 11 T2: 15 T3: 11	4	-	Spanish	At risk

Note. ^aThe number outside the bracket refers to the number of ELLs in the experimental group. The number inside the bracket refers to the total number of participants in the intervention. K = Kindergarten; T1 = treatment 1; T2 = treatment 2; T3 = treatment 3.

Appendix B

Information on the Moderators Used in the Meta-Analysis

Study	Reading Outcome(s)	Outcome Measure(s)	Primary skill targeted in intervention	Number of students in each group	Sessions per week	Minutes per session	Number of weeks	Total minutes of intervention
Barber et al. (2015)	Comprehension	Gates-McGinitie Reading Comprehension Test, History Comprehension Assessment and MAP Reading Test	Comprehension	Not reported	5	90	7	3150
Begeny et al. (2012)	Fluency	GORT- Fluency	Fluency	1	2-3	10	5-7 months	385
Booth (2014)	Comprehension	No name standardized measure consisting of a passage and questions	Vocabulary	12	5	10-15	3	150-225
Dussling (2016)	Real word, Nonword	WRMT-R/NU Word ID and Word Attack	Phonics	4 or 5	5	30	6	900
Kemp (2006)	Fluency, comprehension	TOWRE (SWE and PDE), DIBELS ORF, Stanford Diagnostic Reading Test	Fluency	1	4	20	4 months	1280

Study	Reading Outcome(s)	Outcome Measure(s)	Primary skill targeted in intervention	Number of students in each group	Sessions per week	Minutes per session	Number of weeks	Total minutes of intervention
La Von Bridges (2006)	Fluency, comprehension	Adapted Durrell Reading Test, DIBELS ORF	Mix (Vocabulary, Fluency)	4-9	5	60	10	3000
Leafstedt et al. (2014)	Real word, nonword	WJ-III Word ID and Word Attack	PA	3 to 5	2	15	10	300
Linan-Thompson et al. (2003)	Nonword, comprehension, fluency	WRMT-R Word Attack, Passage Comprehension, Test of Reading Fluency	Mix (fluency, PA, phonics)	1 to 3	5	30	13	1950
Lovett et al. (2008)	Real word, nonword, comprehension	WRMT-R Word ID, Word Attack, and Passage Comprehension WRAT-3 Reading	Phonics	4 to 8	4.5	60	Not reported	6300
McElvain (2010)	Comprehension	QRI-3, CELDT	Comprehension	4 or 5	Not reported	60	7 months	Not reported
McMaster et al. (2008)	Real word, nonword	Word identification, Word attack	Mix (PA, word)	Whole class	4	25	18	1800
Nelson et al. (2011)	Combined	WRMT-R/NU Word ID and Word Attack	Vocabulary	2 to 5	5	20	20	2000

Study	Reading Outcome(s)	Outcome Measure(s)	Primary skill targeted in intervention	Number of students in each group	Sessions per week	Minutes per session	Number of weeks	Total minutes of intervention
Rodriguez et al. (2012)	Real word, comprehension, fluency	WMLS-R Letter Word ID and passage comprehension DIBELS	Phonics and PA	14	3	90	8	2160
Solari & Gerber (2008)	Real word, nonword	WJ-III, Word ID and Word Attack	PA and comprehension	4 or 5	3	20	8	480
Swartzendruber (2007)	Comprehension	Scholastic Reading Inventory	Vocabulary	1	4	20	4	320
Vadasy & Sanders (2010)	Combined	WRMT-R/NU Word ID and Word Attack	Phonics	1	4	30	18	2160
Vadasy & Sanders (2011)	Combined	WRMT-R/NU Word ID and Word Attack	Phonics	1	4	30	20	2400
Vadasy & Sanders (2015)	Combined	WRMT-R/NU Word ID and Word Attack	Vocabulary	1	4	15	14	840
Vadasy et al. (2015)	Nonword	WRMT-R/NU Word Attack	Vocabulary	2 or 3	4	30	20	2400
Vanderwood et al. (2014)	Fluency	DIBELS Nonword fluency	PA	Not Reported	5	30	11	1650

Study	Reading Outcome(s)	Outcome Measure(s)	Primary skill targeted in intervention	Number of students in each group	Sessions per week	Minutes per session	Number of weeks	Total minutes of intervention
Vaughn et al. (2006a)	Real word, nonword, comprehension, fluency	WLPB-R Letter Word ID, Word Attack, and passage comprehension DIBELS oral reading fluency	Mix (PA, phonics, word recognition, fluency, comprehension)	3 to 5	5	50	Not reported	5750
Vaughn et al. (2006b)	Nonword, comprehension, fluency	WLPB-R Word Attack, passage comprehension DIBELS oral reading fluency	Mix (PA, phonics, word recognition, fluency, comprehension)	3 to 5	5	50	28	7000
Vaughn et al. (2017)	Comprehension	Gates–MacGinitie Reading Comprehension Subtest	Mix (comprehension, word, critical reading)	845/49	3	15, 45, 90	20	1890
Villanueva (2015)	Fluency, comprehension	Correct Words Per Minute DIBELS, WJ III Comprehension	Fluency	4 or 5	Not reported	T1: 20 T2: 30	Not reported	240
Walter (2010)	Fluency	DIBELS nonword fluency	Mix (PA, Phonics)	8 or fewer	4	20	10	800
Wanzek & Roberts (2012)	Real word, nonword, comprehension	WJ-III Letter Word ID, Word Attack, and passage comprehension	Phonics and comprehension	2 to 4	4	30	28	3360

Note. Letter Word ID = Letter Word Identification subtest; PA = phonological awareness; WJ-III = Woodcock-Johnson III Tests of Achievement; WLPB-R = Woodcock Language Proficiency Battery--Revised; WMLS-R = Woodcock-Muñoz Language Survey--Revised; WRAT-3 Reading (Blue form) = Wide Range Achievement Test, Third Edition; WRMT-R = Woodcock Reading Mastery Test--Revised; WRMT-R/NU = Woodcock Reading Mastery Test--Revised/Normative Update; Word Attack = Word Attack subtest; Word ID = Word Identification subtest.