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Title: Effective Tier 1 Reading Instruction for Elementary Schools: A Systematic Review

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## **Background**

There is a growing movement supporting the use of evidence in education, further solidified by the Every Student Succeeds Act, which formally defined evidence and encouraged its use. Combined with the widespread use of multi-tiered models of instruction such as Response to Intervention, the result is a demand for knowing what works. This is especially relevant for elementary reading because developing literacy in the early years is key for future success.

A broad literature exists reviewing approaches for students struggling to read (Scammacca, Roberts, Vaughn, & Stuebing, 2015; Slavin, Lake, Davis, & Madden, 2011; Wanzek & Vaughn, 2007; Wanzek et al., 2016, 2013; Wanzek, Wexler, Vaughn, & Ciullo, 2010). Yet these reviews focus on Tiers 2 and 3 of a multi-tiered model, on students who still need additional support. Tier 1 is crucial for elementary reading, because it touches on all students, and because successful Tier 1 instruction can reduce the need for far more expensive Tier 2 and 3 intervention.

Fewer reviews have focused on Tier 1 instruction in elementary reading, and are often limited, either by focusing on particular age ranges (Swanson et al., 2017), student demographics (Dietrichson, Bøg, Filges, & Klint Jørgensen, 2017; Same et al., 2018), writing (Graham & Hebert, 2011; Graham, Liu, Aitken, et al., 2018; Graham, Liu, Bartlett, et al., 2018; Graham, McKeown, Kiuahara, & Harris, 2012), spelling (Graham & Santangelo, 2014). One comprehensive review of elementary reading programs is nearly a decade old (Slavin, Lake, Chambers, Cheung, & Davis, 2009).

## **Purpose**

The purpose of this study is to build upon the existing reviews to generate a comprehensive and up-to-date review of programs addressing Tier 1 instruction in elementary reading. It differs from extant reviews by including all elementary grades, all students, and a specific focus on academic reading outcomes.

## **Method**

This study uses a best-evidence synthesis approach (Slavin, 1986), which combines traditional meta-analytic techniques of systematic review and effect size calculations (Lipsey & Wilson, 2001) with narrative descriptions of individual programs and studies.

## **Data Collection**

A broad literature search was conducted to locate as many studies that might meet the inclusion criteria as possible. Electronic searches were made of educational databases including ERIC, EBSCO, PsycInfo, and Dissertations Abstracts International. Various combinations of key words, such as “reading,” “primary students,” “curriculum,” and “randomized” were used to identify studies. Search results were limited to studies published between 1990 and 2018, with the exception of studies related to educational technology, which needed to be published after 2000. Google Scholar and other internet search engines and educational publisher websites were also searched. Citations from identified studies and previous reviews were examined for possible inclusion.

## **Inclusion Criteria**

Accepted studies must:

1. Evaluate reading programs for students in kindergarten through fifth grade.
2. Include a comparison group of children receiving the typical instruction that would have occurred without the intervention (“business as usual”).
3. Take place in developed countries, but the report had to be available in English.
4. Use either random assignment or quasi-experimental methods with adjustments for pretest differences. The level of assignment could be schools, teachers, or students.
5. Demonstrate baseline equivalence between groups based on the analytic sample (after attrition) of less than 0.25 SD.
6. Use quantitative measures of reading, such as standardized reading assessments. Experimenter- or developer-made measures and measures aligned to treatment were excluded.
7. Include at least 30 students and 2 teachers in each condition. When treatment was assigned at the cluster level, there needed to be at least two units in each condition.
8. Use duration of 12 weeks from pretest to posttest.
9. Evaluate programs that could be replicated. If programs were delivered by research staff and provided levels of support not feasible in actual practice, studies were excluded.

### **Effect sizes**

Effect sizes were calculated as the difference between adjusted posttest scores for treatment and control students, divided by the unadjusted standard deviation of the control group. Alternative procedures were used to estimate effect sizes when adjusted posttests or unadjusted standard deviations were not reported, as described by Lipsey and Wilson (2001).

Mean effect sizes across studies and programs were calculated using an inverse variance approach (Lipsey & Wilson, 2001), adjusted for clustering as described by Hedges (2007).

### **Findings/Results**

A total of 85 studies of 53 programs for elementary reading met the inclusion criteria. Overall, these studies exhibited a high level of methodological rigor, with 72% (n = 61) of the studies randomized at either the student or cluster level and only 28% (n = 24) using quasi-experimental methods.

Programs were organized according to their main instructional approach. These categories include core basal programs, supplemental curricula, individualization using technology, cooperative learning approaches, curricula combined with instructional process approaches, early childhood reading curricula (grade K), professional development, and social/emotional and behavior-focused programs. Studies for each category are summarized in Tables 1 to 8.

Results for each category are summarized in Table 9. There was a small, positive effect across all studies (ES = +0.07,  $p < .05$ ). All categories of programs had positive mean effect sizes, but the magnitude of these effects varied. Only two types of programs have average positive effects greater than +0.20: curricula combined with instructional process approaches and early childhood curricula. Curricula combined with instructional process approaches, including Success for All and Direct Instruction, had a weighted mean effect size of +0.26 ( $p < .05$ ). Early childhood reading curricula, programs used with Kindergarten students had a weighted mean effect size of +0.22 ( $p < .05$ ). Cooperative learning approaches (ES = +0.10) and professional development (ES = +0.09) were each not significant. Core basal programs and individualization

using technology had very small impacts, with average effect sizes of +0.02 and +0.03 respectively (n.s.).

**Conclusions**

Schools have diverse approaches and programs to choose from to provide adequate Tier I instruction in elementary reading classrooms. Yet the effectiveness of these programs is variable. Schools should be encouraged to choose from among these proven programs to ensure all students have access to effective reading instruction.

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Table 1: Core Basal Programs

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Journeys</b>									
Resendez & Azin, 2012	CR	1 year	44 teachers 674 students	K-2	6 schools urban and suburban in Arizona, Rhode Island, Louisiana, DC 39% W, 32% H, 23% AA, 55% FRL, 20% LEP	ITBS: <i>Lang. (1-2)</i>	+0.02	+0.14	+0.14
						<i>Reading Words (K)</i>	+0.39		
						<i>Vocab.</i>	+0.15		
						<i>Word Analysis</i>	+0.07		
						<i>Reading Comp.</i>	+0.20		
<b>Open Court</b>									
Borman, Dowling, & Schneck, 2008	CR	1 year	49 classes 917 students	1-5	5 schools in NC, FL, IN, TX, ID 73% minority, 77% FRL	Terra Nova: <i>Comp.</i>	+0.12	+0.14	
						<i>Vocab.</i>	+0.19		
Vaden-Kiernan et al., 2018	CR	1 year	49 schools 8877 students	K-1, 3-4	49 elementary schools across 7 districts across the country 59% FRL, 67%W, 14% AA, 11% H, 11%ELL	GRADE	-0.03	-0.03	+0.05
<b>Reach for Reading</b>									
Wilkerson & Savoy, 2013	CR	1 year	28 classes 580 students	3	7 schools across 4 school districts in the North-Central and Southeast regions of the US 39% W, 32% H, 11% AA, 68% FRL, 35% LEP	Gates: <i>Comp.</i>	+0.12	+0.15	+0.15
						<i>Vocab.</i>	+0.20		
<b>Reading Street</b>									
Gatti, 2011a	CR	2 years	86 classes 925 students	K-5	11 schools in AZ, CO, MA, MT, OH, WA 3%AA, 7% H. 23% FRL, 4% ELL	GRADE	+0.004	0.00	
Wilkerson, Shannon, & Herman, 2007	CR	1 year	57 teachers 1207 students	1-3	Schools in 4 sites around the US 26% FRL, 86%W	GMRT	0.00	0.00	
Wilkerson, Shannon, & Herman, 2006	CR	1 year	48 teachers 944 students	1-3	5 schools in 2 urban and 1 rural site 54% FRL, 57% W, 25% AA, 11% H, 20% LEP	GMRT	-0.12	-0.12	-0.03

<b>Rigby Literacy Program</b>									
Wilkerson, 2004	CQE	1 year	4 schools 472 students	2,4	4 high-poverty schools across 2 urban school districts across the country 80% FRL, 57% AA, 29% H	GMRT	-0.23	-0.23	-0.23
<b>Scholastic Phonics Readers/ Literacy Place</b>									
Schultz, 1996	CR	1 year	8 schools 301 students	1	Large urban school districts in CA	CTBS: <i>Comp.</i>	+0.21	+0.16	+0.16
						<i>Reading</i>	+0.07		
						<i>Vocab.</i>	+0.11		
						<i>Word Analysis</i>	+0.23		

Table 2: Supplemental Curricula

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Creating Robust Vocabulary</b>									
Vadasy, Sanders, & Herrera, 2015	CR	1 year	61 classes 1232 students	4, 5	24 urban schools in Pacific Northwest 14% A, 11% AA, 9% SPED	ITBS: <i>Comp</i>	+0.16	+0.15	+0.15
						<i>Vocab</i>	+0.13		
<b>Elements of Reading: Comprehension</b>									
Resendez, Sridihara, & Azin, 2006	CR	1 year	18 teachers 413 students	2-4	Five schools in suburban, rural and urban AZ, KY, VA, and OR 69% FRL, 36%W, 28% H, 20% AA, 10% ELL	ERDA: <i>Target Words in Context</i>	+0.05	+0.08	+0.08
						<i>Informational Passage Fluency</i>	0.00		
						<i>Narrative Passage Fluency</i>	+0.03		
						<i>Comp.</i>	+0.12		
						Gates: <i>Comp.</i>	+0.11		
						<i>Vocab.</i>	+0.21		
<b>Elements of Reading: Fluency</b>									
Apthorp, 2005a	CR	1 year	10 classes 184 students	2	Three high-poverty Title I schools in a southern state and a northeastern state 50% AA, 47% W	ERDA: <i>Informational Passage Fluency</i>	+0.18	+0.10	+0.10
						<i>Narrative Passage Fluency</i>	+0.15		
						<i>Word Reading</i>	0.00		
						Gates <i>Comp.</i>	+0.05		
<b>Elements of Reading: Phonics and Phonemic Awareness</b>									
Apthorp, 2005b	CR	1 year	16 teachers 257 students	1	4 high-poverty, 2 middle class schools 57% FRL, 56%AA, 41%W	ERDA	-0.09	-0.19	-0.19
						Gates	-0.29		

<b>Elements of Reading: Vocabulary</b>									
Apthorp, 2006	CR	1 year	7 classes 124 students	3	4 Title I schools in AL 92% AA, 90% FRL	Gates: <i>Comp.</i>	-0.06	+0.14	
						<i>Vocab.</i>	+0.55		
Apthorp et al., 2012	CR	2 years	45 schools 6110 students	K,1,3, 4	Schools from 6 districts in southeastern state 75% FRL, 20% ELL	GRADE: <i>Passage Comp.</i>	-0.11	-0.05	-0.03
						<i>Intermediate Vocab</i>	-0.14		
						<i>Primary Word Meaning</i>	+0.06		
<b>ICON Improving Comprehension Online</b>									
Proctor et al., 2011	CQE	16 weeks	12 classes 240 students	5	3 districts in a northeast metropolitan area with medium to large Spanish speaking population 47% H, 5% AA, 51% bilingual, 28% ELL, 58% FRL	Gates: <i>Comp.</i>	-0.03	-0.01	-0.01
						<i>Vocab.</i>	+0.02		
<b>Project CRISS</b>									
James-Burdumy et al., 2010	CR	1 year	38 schools 2681 students	5	10 districts urban and rural 66% FRL, 22% ELL, 10% SPED, 35% H, 28% W, 33% AA	GRADE: <i>Cohort 1</i>	-0.01	-0.01	-0.01
						<i>Cohort 2</i>	-0.02		
<b>QuickReads</b>									
Trainin, Hayden, Wilson, & Erickson, 2016	CR	19 weeks	76 classes 1484 students	2,3,4, 5	Nine K-5 elementary schools in one midwestern city 67% W, 15% H, 8% AA, 11% ELL	Gates: <i>Comp.</i>	+0.21	+0.22	+0.22
						<i>Vocab.</i>	+0.22		
<b>Read for Real</b>									
James-Burdumy et al., 2010	CR	1 year	37 schools 2590 students	5	10 districts urban and rural 66% FRL, 20% ELL, 12% SPED, 32% H, 35 W, 37% AA	GRADE: <i>Cohort 1</i>	-0.06	-0.05	-0.05
						<i>Cohort 2</i>	-0.04		
<b>ReadAbout</b>									
James-Burdumy et al., 2010	CR	1 year	38 schools 2607 students	5	10 districts urban and rural 67% FRL, 23% ELL, 10% SPED, 34% H, 28% W, 33% AA	GRADE: <i>Cohort 1</i>	-0.05	-0.03	-0.03
						<i>Cohort 2</i>	-0.01		

<b>Reading for Knowledge</b>									
James-Burdumy et al., 2010	CR	1 year	39 schools 2557 students	5	10 districts urban and rural 34% H, 28% W, 37% AA, 59% FRL, 26% ELL, 11% SPED	GRADE	-0.11	-0.11	-0.11
<b>Schoolwide Enrichment Reading Model</b>									
Reis et al., 2007	SR	12 weeks	226 students	3-6	Urban school district. 1%Amln, 19%AA, 72%H, 8%W, 17%ELL, 73%FRL	ITBS	+0.07	+0.07	
Reis, Eckert, McCoach, Jacobs, & Coyne, 2008	SR	14 weeks	544 students	3-5	2 middle-class schools in New England towns 36% FRL, 64% W, 28% H, 18% LEP	ITBS	+0.06	+0.06	
Reis, McCoach, Little, Muller, & Kaniskan, 2011	CR	5 months	70 classes 1192 students	2-5	Elementary schools across the US 45%W, 37% AA, 6% H, 14% SPED, 12% LEP, 30% Gifted, 50% FRL	ITBS	+0.02	+0.02	+0.05
<b>SPARK</b>									
Jones, 2015	SR	2 years	389 students	K-2	Milwaukee public schools	MAP	+0.23	+0.29	+0.29
						PALS	+0.35		



Table 3: Individualization using Technology

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Academy of Reading</b>									
Campuzano, Dynarski, Agodini, & Rall, 2009	CR	1 year	41 teachers 899 students	4	Schools across the U.S. 65% FRL, 54% AA, 29% H, 17% W	SAT-10	-0.01	-0.01	-0.01
<b>Achieve3000</b>									
Borman, Park, & Min, 2015	QE	1 year	6032 students	4-5	Public schools in Chula Vista, CA	CST ELA	+0.05	+0.05	+0.05
Hill & Lenard, 2016	CR	1 year	32 schools 34632 students	4-5	26% AA, 19% H, 9% LEP, 36% Economically disadvantaged	EOG Lexile	0.00	0.00	
Shannon & Grant, 2015	CR	1 year	13 teachers 270 students	3	4 suburban and urban districts in West South, East North and Pacific region 37% H, 67% W, 21% AA, 62% FRL, 13% ELL, 12% SPED	GMRT: <i>Comp</i>	+0.02	+0.01	
						<i>Vocab</i>	-0.02		
Tracey & Young, 2004	CQE	1 year	8 classes 168 students	5	Mostly white students from 5 schools in a small, northeast city in NY	SRI	+0.31	+0.16	
						TerraNova	+0.01		
<b>Achievement Network ANet</b>									
West, Morton, & Herlihy, 2016	CR	2 years	89 schools 13208 students	3-5	5 districts: Boston, Chelsea, Springfield (MA), Jefferson Parish (LA), Chicago (IL)	State tests	-0.07	-0.07	-0.07
<b>Acuity</b>									
Konstantopoulos, Miller, & Ploeg, 2013	CR	1 year	59 schools 11610 students	3-6	Schools in Indiana	ISTEP+	+0.12	+0.12	+0.06
Konstantopoulos, Miller, van der Ploeg, & Li, 2016	CR	1 year	55 schools 24744 students	3-8	Schools in Indiana 53% W, 27% AA, 12% H, 19% SPED, 57% FRL	ISTEP+	-0.01	-0.01	
<b>Destination Reading</b>									

Campuzano et al., 2009	CR	1 year	35 teachers 742 students	1	Schools across the U.S. 71% FRL, 31% AA, 34%H, 34% W	SAT-10	+0.09	+0.09	+0.09
<b>Headsprout</b>									
Campuzano et al., 2009	CR	1 year	63 teachers 1079 students	1	Schools across the U.S. 35% FRL, 81% W, 13% AA, 67% H	SAT-10	+0.01	+0.01	+0.01
<b>ITSS</b>									
Wijekumar, Meyer, F, & Lei, 2012	CR	1 year	131 classes 2535 students	4	Rural and suburban	Gray Silent Reading Test	+0.10	+0.10	+0.15
Wijekumar et al., 2014	CR	1 year	128 teachers 2485 students	5	Rural and suburban schools in Pennsylvania	Gray Silent Reading Test	+0.20	+0.20	
<b>LeapTrack</b>									
Campuzano et al., 2009	CR	1 year	55 teachers 1274 students	4	Schools across the U.S. 61% FRL, 57% AA, 33% W, 10% H	SAT-10	+0.09	+0.09	+0.09
<b>mClass</b>									
Konstantopoulos et al., 2016	CR	1 year	55 schools 6270 students	K-2	Schools in Indiana 53% W, 27% AA, 12% H, 19% SPED, 57% FRL	Terra Nova	-0.19	-0.19	-0.19
<b>Measures of Academic Progress (MAP)</b>									
Cordray, Pion, Brandt, Molefe, & Toby, 2012	CR	1 year	32 schools 1914 students	4, 5	5 urban, suburban, rural districts in Midwestern area 50% FRL, 62% W, 24% AA	ISAT: 4th grade	+0.05	0.00	0.00
						5th grade	-0.05		
<b>Plato Focus</b>									
Campuzano et al., 2009	CR	1 year	29 teachers 618 students	1	Schools across the U.S. 48% FRL, 67%W, 27% H	SAT-10	+0.02	+0.02	+0.02

<b>Renzulli Learning</b>									
Housand, 2008	CR	16 weeks	23 classes 323 students	3-6	4 Title I schools in a small city in Northeastern US	ITBS Reading Comp.	-0.06	-0.06	-0.06
<b>SuccessMaker</b>									
Campbell, 2000	CQE	1 year	13 schools 1062 students	4-5	Middle class students in Etowah, AL 32%FRL	SAT-9: Comp	-0.09	-0.05	+0.03
						Vocab	+0.04		
Gatti, 2011b	CR	1 year	47 classes 1260 students	3, 5	8 urban, suburban districts in AZ, CA, IN, KS, MI, MO, TX 30% FRL, 55% W, 14% H, 9% AA,	GRADE	+0.06	+0.06	
<b>Waterford Early Reading Program</b>									
Campuzano et al., 2009	CR	1 year	20 teachers 1155 students	1	13 schools in 3 districts (urban fringe and urban) across the U.S. 47% FRL, 37% AA, 16% H	SAT-10	+0.02	+0.02	+0.13
Cassady & Smith, 2005	CQE	1 year	6 classes 93 students	1	School in rural Midwest	Terra Nova Reading	+0.78	+0.78	
Magnolia Consulting, 2012	CR	2 years	57 classes 729 students	k,1,2	8 schools across districts in West South Central region, West Pacific region, and West Mountain region 19% AA, 53% H, 17% W, 73% FRL, 32% LEP, 5% SPED	SAT-10	+0.11	+0.11	

Table 4: Cooperative Learning Approaches

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Collaborative Strategic Reading</b>									
Boardman et al., 2016	CR	14 weeks	60 teachers 1353 students	4,5	urban/near urban districts 69% H, 6% AA, 48% W, 51% ELL, 9% SPED	GMRT	-0.03	-0.03	
Hitchcock, Dimino, Kurki, Wilkins, & Gersten, 2011	CR	1 year	74 classes 1355 students	5	5 districts in Oklahoma and Texas 21% AA, 63% H, 9% W, 73% FRL, 11% SPED, 44% ELL	GRADE	+0.05	+0.05	+0.01
<b>Cooperative Integrated Reading and Competition</b>									
Bramlett, 1994	CQE	1 year	18 schools 392 students	3	Rural southern Ohio	CAT: <i>Comp.</i>	+0.10	+0.09	
						<i>Word Analysis</i>	+0.10		
						<i>Vocab.</i>	+0.03		
Hanselman & Borman, 2013	CR	2 years	26 schools 1743 students	3-4	Title I schools throughout the U.S., 80%FL, 65% AA, 12% H, 21% W, 9% ESL, 10% SPED	GRADE: <i>Grades 3-4</i>	+0.07	0.00	
						<i>Grades 4-5</i>	-0.08		
Stevens & Slavin, 1995a	CQE	2 years	7 schools 1299 students	2-6	Working-class suburb of Baltimore 9%FL, 95%W	CAT: <i>Vocab.</i>	+0.20	+0.24	
						<i>Comp.</i>	+0.26		
Stevens & Slavin, 1995b	CQE	2 years	5 schools 873 students	2-6	Suburban Maryland 10%FL, 92%W	CAT: <i>Comp.</i>	+0.28	+0.26	+0.08
						<i>Vocab.</i>	+0.21		
<b>PALS</b>									
Lemons, Fuchs, Gilbert, & Fuchs, 2014	CR	16 weeks	50 classes 1251 students	1	Schools in Nashville participating in the first two years of the IES scale up 32% AA, 57% Title I, 20% ELL	Word ID	+0.02	+0.13	
						Word Attack	+0.15		
						Fluency	+0.22		
Mathes & Babyak, 2001	CR	14 weeks	20 classes 110 students	1	Schools in Florida 63%W, 36%AA	Woodcock: <i>Word Id</i>	+0.51	+0.61	+0.37
						<i>Word Attack</i>	+0.92		
						<i>Passage Comp</i>	+0.41		

Mathes, Torgesen, & Allor, 2001	CQE	16 weeks	24 classes 140 students	1	Schools in the southeast; 65%W, 32%AA	Woodcock: <i>Word Id</i>	+0.39	+0.51	
						<i>Word Attack</i>	+0.59		
						<i>Passage Comp</i>	+0.56		
						TERA-2	+0.48		

Table 5: Curricula Combined With Instructional Process Approaches

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Direct Instruction</b>									
MacIver, Kemper, & Stringfield, 2003	CQE	4 years	12 schools 275 students	K-3	High-poverty schools in Baltimore, majority African-American 69% FL, 67%AA	CTBS: <i>Reading Comp.</i>	+0.13	+0.09	+0.09
						<i>Vocab.</i>	0.00		
<b>Success for All</b>									
Borman et al., 2007	CR	3 years	35 schools 2108 students	K-2	Title I schools throughout the U.S., 72%FL, 57% AA, 31% W, 10% H	Woodcock: <i>Word Id</i>	+0.22	+0.25	
						<i>Word Attack</i>	+0.33		
						<i>Passage Comp</i>	+0.21		
Chambers, Slavin, Madden, Cheung, & Gifford, 2005	CQE	1 year	8 schools 455 students	K-1	Mostly Hispanic communities in the US 78% FRL, 100% H	Woodcock: <i>Letter ID</i>	-0.16	+0.20	
						<i>Word ID</i>	+0.40		
						<i>Word Attack</i>	+0.36		
						<i>Passage Comp</i>	+0.21		
Correnti, 2009	CQE	2 years (2 cohorts)	56 schools 6720 students	K-2, 3-5	K-5 elementary schools located in urban or urban fringe areas from the SII data set 69% FRL, 47% AA, 21% H	Terra Nova	+0.40	+0.40	
Livingston & Flaherty, 1997	CQE	2-4 years	6 schools 267 students	K-3	High-poverty multilingual schools in Modesto and Riverside, CA 72% FRL, 34% W, 12% A, 43% H, 35% ELL	Average of Woodcock and DORT: <i>2 years (K-1)</i>	+0.58	+0.36	
						<i>3 years (K-2)</i>	+0.43		
						<i>4 years (K-3)</i>	+0.10		
Madden, Slavin, Karweit, Dolan, & Wasik, 1993	CQE	3 years	10 schools 1368 students	1-3	African American students in high-poverty schools in Baltimore, MD	Average of Woodcock and DORT	+0.56	+0.56	
Nunnery, Slavin, Smith, Hunter, & Stubbs, 1996	CQE	2 years	64 schools 595 students	1	High-poverty schools in Houston, TX 79%FRL, 52%H, 48%AA	Woodcock: <i>Passage Comp.</i>	-0.15	-0.10	+0.27
						<i>Word Attack</i>	-0.12		
						<i>Word Id</i>	-0.13		

						DORT	+0.02		
Quint, Zhu, Balu, Rappaport, & DeLaurentis, 2015	CR	3 years	37 schools 7928 students	3-5	5 school districts in Northeast, South and West 57% FRL, 14% W, 19%AA, 63% H, 17% ELL	Gates MacGinitie: <i>Comp.</i>	-0.01	+0.00	
						<i>Vocab.</i>	0.00		
						State Reading Test	-0.06		
				K-2		Woodcock: <i>Letter-Word Id</i>	+0.07		
						<i>Word Attack</i>	+0.15		
						TOWRE	+0.07		
						Passage Comp	+0.03		
Ross & Casey, 1998	CQE	2 years	8 schools 356 students	K-1	High-poverty schools in Ft. Wayne, IN; 75%FRL, 45% minority	Woodcock <i>Word Id</i>	+0.22	+0.26	
						<i>Word Attack</i>	+0.45		
						<i>Passage Comp</i>	+0.14		
						Durrell Oral	+0.21		
Ross, Wang, Sanders, Wright, & Stringfield, 1999	CQE	3 years	41 schools 11931 students	3-5	Memphis 85% Minority, 87% FRL	Terra Nova or CTBS-5	+0.72	+0.72	

Table 6: Early Childhood Reading Curricula

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Read Well Kindergarten</b>									
Gunn, Smolkowski, & Vadasy, 2011	CR	1 year	24 schools 1427 students	K	Suburban and rural schools in New Mexico and Texas	Letter Names	+0.17	+0.08	+0.08
						Letter Sounds	+0.19		
						CTOPP	0.00		
						WRMT-R: <i>Word ID</i>	+0.02		
						<i>WA</i>	0.00		
						ORF	+0.07		
<b>Superkids</b>									
Borman & Dowling, 2009	CQE	1 year	43 classes 750 students	K	Schools throughout the U.S. 52% minority	SAT-10: <i>Sounds and Letters</i>	+0.25	+0.20	
						<i>Word Reading</i>	+0.14		
						<i>Sentence Reading</i>	+0.22		
D'Agostino, 2009	CQE	1 year	43 classes 750 students	K	Schools throughout the U.S. 12% AA, 24% H, 45% FRL, 4% ELL	ITBS: <i>Word Analysis</i>	+0.41	+0.25	+0.23
						<i>Reading Words</i>	+0.23		
						<i>Reading Comp</i>	+0.24		
						<i>Vocabulary</i>	+0.02		
<b>Voyager Universal Literacy</b>									
Frechtling, Zhang, & Silverstein, 2006	CQE	1 year	8 schools 398 students	K	African American students in 8 urban schools 97% AA, 89% FRL	Woodcock: <i>Word ID</i>	+0.21	+0.66	
						<i>Word Attack</i>	+1.11		
Hecht, 2003	CQE	5 months	4 schools 213 students	K	High-poverty schools in Orlando 85% AA, 12% LEP, 73% FRL	Woodcock: <i>Word ID</i>	-0.1	0.00	+0.41
						<i>Word Analysis</i>	+0.1		



Table 7: Professional Development

Study	Design	Durati on	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Children's Literacy Initiative</b>									
Parkinson, Salinger, Meakin, & Smith, 2015	CR	2-3 years	77 schools 7830 students	K-2	Urban schools in IL, NJ, & PA. 25% H, 66% AA, 84% FRL, 7% ELL, 13% SPED	GRADE: 2 year cohort (K-1)	+0.06	+0.10	+0.10
						3 year cohort (K-2)	+0.14		
<b>Content-Focused Coaching</b>									
Matsumura, Garnier, & Spybrook, 2013	CR	2 years	29 schools 2983 students	4, 5	One urban school district in the Southwestern United States 91% FRL, 79% H, 16% AA, 40% ELL	State standardized test	+0.29	+0.29	+0.29
<b>Evidence-Based Literacy Instruction (EBLI)</b>									
Jacob, 2017	CR	1 year	63 classes 1454 students	2-5	Seven Michigan charter schools	NWEA MAP	-0.06	-0.06	-0.06
<b>Language Essentials for Teachers of Reading and Spelling (LETRS)</b>									
Garet et al., 2008	CR	1 year	90 schools 5530 students	2	6 urban districts 78% FRL, 78%AA, 15%W	Various state assessments	+0.06	+0.06	+0.06
<b>Pacific CHILD Professional Development Program</b>									
Abe, Thomas, Sinicrope, & Gee, 2012	CR	2 years	45 schools 3052 students	4,5	Schools in the Pacific: American Samoa, the Commonwealth of the Northern Mariana Islands, and Hawai'i 69% FRL, 87% non-White, 13% ELL (HI only)	SAT-10/TerraNova	+0.24	+0.24	+0.24
<b>Success in Sight</b>									
Wilkerson, Shannon, Styers, & Grant, 2012	CR	2 years	52 schools 8182 students	3-5	8 rural, urban and suburban districts, Minnesota, Missouri 40% W, 33% AA, 10% H, 16% A, 70% FRL	State standardized tests	-0.01	-0.01	-0.01
<b>Teacher Study Group</b>									

Gersten, Dimino, Jayanthi, Kim, & Santoro, 2010	CR	1 year	19 schools 468 students	1	3 urban districts in CA, PA, VA 24% language-minority students	WDRB: <i>Word Attack</i>	+0.13	+0.16	+0.16
						<i>LWID</i>	+0.21		
						<i>Reading Vocab.</i>	+0.21		
						<i>Passage Comp.</i>	+0.13		

Table 8: Social/Emotional Learning and Behavior-Focused Programs

Study	Design	Duration	N	Grade	Sample Description	Posttest	ES	StudyES	ProgES
<b>Incredible Years Teacher Program</b>									
Murray, Rabiner, & Carrig, 2014	CR	1 year	97 teachers 1158 students	K-2	11 schools across 3 rural districts in southeastern US 47% FRL, 22% H, 17% AA, 54% W	STAR-Early Literacy	-0.17	-0.05	-0.05
						STAR-Reading	+0.07		
<b>INSIGHTS</b>									
O'Connor, Cappella, McCormick, & McClowry, 2014	CR	1 year	22 schools 435 students	K-1	Elementary schools from low-income, urban neighborhoods 87% FRL, 75% AA, 16% H	Woodcock Johnson Word ID	+0.13	+0.13	+0.13
<b>PAX Good Behavior Game</b>									
Weis, Osborne, & Dean, 2015	CQE	1 year	49 classes 949 students	1-3	6 rural and urban districts in Ohio 82% W	MAP	+0.19	+0.19	+0.19
<b>Positive Action</b>									
Bavarian et al., 2013	CR	6 years	14 schools 1170 students	3-8	High-risk Chicago Public Schools 48%AA, 27%H	ISAT	+0.1	+0.1	
Snyder et al., 2009	CR	4 years	20 schools 10880 students	5, 6	Hawai'i 5% AA, 14% Filipino, 15% W, 57% FRL, 14% ELL, 10% SPED	SAT	+0.12	+0.16	+0.14
						HCPS II	+0.2		
<b>Responsive Classroom</b>									
Rimm-Kaufman, Fan, Chiu, & You, 2007	CQE	1-3 years	6 schools 1389 students	2-4	52% W, 22% AA, 21% H, 35% FRL	Degrees of Reading Power Test	+0.14	+0.14	
Rimm-Kaufman et al., 2014	CR	3 years	24 schools 2904 students	3-5	Elementary schools in a large ethnically and socioeconomically diverse district in a mid-Atlantic state 32% FRL, 11%AA, 24%H	SOL	-0.06	-0.06	-0.02

Table 9: Summary of Results

Category	Mean ES	p	Studies
All Studies	+0.07	0.01	85
Table 1 – Core Basal Programs	+0.03	0.60	9
Table 2 – Supplemental Curricula	+0.07	0.07	16
Table 3 – Individualization Using Technology	+0.02	0.63	10
Table 4 – Cooperative Learning Approaches	+0.10	0.09	9
Table 5 – Curricula Combined With Instructional Process Approaches	+0.26	0.01	10
Table 6 – Early Childhood Reading Curricula	+0.22	0.01	5
Table 7 – Professional Development	+0.09	0.08	7
Table 8 – Social/Emotional Learning & Behavior-Focused Programs	+0.05	0.39	7