



ARIZONA DEPARTMENT OF EDUCATION

Each reading intervention program will be scored using a rubric. A response must meet **all** the criteria in each scored area to be included on the K-3 MOWR vetted reading intervention program list. *Effect Size, Peer Review, and MTSS Level of Support may be noted in the study but does not disqualify overall approval.

Study: [An Examination of the Efficacy of a Multitiered Intervention on Early Reading Outcomes for First Grade Students at Risk for Reading Difficulties](#)

Date of Study: 2014

Grade Levels of Study: 1st Grade

Reading Intervention Program's Marketed Name: ECRI

	Rating or Measure Select: Y or N	Rationale
ESSA Evidence Tier	Y	RCT- Tier I
Independent Researchers (Y/N)	Y	Hank Fien, PhD, Jean Louise M. Smith, PhD, Keith Smolkowski, PhD, Scott K. Baker, PhD, Nancy J. Nelson, PhD, and Erin Chaparro, PhD
Established Measure (Y/N)	Y	Dynamic Indicators of Basic Early Literacy Skills. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessments were used to measure phonemic decoding skill (i.e., the alphabetic principle) and passage reading fluency. The Nonsense Word Fluency (NWF) and Oral Reading Fluency (ORF) measures were administered in the fall, winter, and spring. Trained data collectors administered DIBELS assessments in all districts. Average interrater agreement was 97.7% (range = 90%–100%) for NWF and 97.4% (range = 91%–100%) for ORF across the study. Woodcock Reading Mastery Tests–Revised. The Woodcock Reading Mastery Tests–Revised (WRMT; Woodcock, 1998) is a

standardized, comprehensive battery of tests that measures multiple aspects of reading ability, including comprehension, word recognition, and word analysis. Two skill clusters comprised of four subtests were administered to students and used in this analysis: the Basic Skills Cluster (WRMT-BS), which includes the Word Identification and Word Attack subtests, and the Comprehension Cluster, which includes Word Comprehension and Passage Comprehension subtests. These two clusters compose the Total Reading (WRMT-TR; full scale), which includes the Word Identification, Word Attack, Word Comprehension, and Passage Comprehension subtests. The total standard score, derived from grade-based norms, was used in all analyses. As reported in the testing manual, the correlation between scores on the WRMT-TR and the Woodcock–Johnson Psycho-Educational Battery, Total Reading Full Scale is .88 in Grade 1. Internal consistency for the subtests ranges from .94 to .98 in Grade 1. We administered Form H of the WRMT in the fall and spring. Average interrater agreement between data collectors across the study was 97.8% (range= 93 – 100%).

SAT10. The SAT10 (Harcourt Educational Measurement, 2002) is a group administered, norm-referenced test of reading proficiency. Total scaled scores, derived from grade-based norms, were used in all analyses. The SESAT 2 was used in the fall and the Primary 1 was used in the spring of Grade 1. The test manual indicates that Kuder–Richardson reliability coefficients, a measure of internal consistency, are .94 for SESAT 2 and .97 for Primary 1. Also, SESAT 2 and Primary 1 Total Reading scores are moderately correlated with Otis–Lennon School Ability Test, 8th Edition total scores ($r = .68$ and $.61$, respectively). Trained data collectors administered the SAT10 in the fall and spring of first grade to all students participating in the project. Sub-tests administered included Sounds and Letters,

		Word Reading, and Sentence Reading raged (SESAT 2), or Word Study Skills, Word Reading, Sentence Reading, and Reading Comprehension (Primary 1). Total SAT10 testing time ranged from 110 to 155 minutes. Results of the fall administration were used to assign students to tiers, whereas spring results served as the primary reading outcome measure in the study.
Sample Size	Y	500 in treatment group, 469 in comparison First grade students (969 total parental consent given to participate) 360 students were assigned to Tier 1 (167 treatment, 193 comparison), 267 students were assigned to Tier 2 (120 treatment, 147 comparison), and 243 students were assigned to Tier 3 (135 treatment, 108 comparison)
Research Design	Y	This study was part of a 4-year project designed to examine the efficacy of the ECRI multitiered reading intervention in first grade classrooms. Project ECRI was a cluster-randomized controlled trial that nested students and teachers within schools. In this study, we report results from the first wave of schools that participated in the project in the 2009–2010 academic year
Outcome	Y	First, we hypothesized that the at-risk readers in the <i>ECRI intervention</i> would demonstrate stronger gains on all out-comes, when compared to at-risk readers in the business-as-usual multitiered comparison condition. Compared to control students, we also expected stronger gains for at-risk readers in the intervention group on proximal measures relative to distal measures. Analysis of proximal measures revealed a statistically significant difference favoring intervention students on NWF-WRC and ORF fall to winter, with effect sizes of $g = +.42$, and $g = +.34$, respectively. There were no significant effects for NWF-WRC, NWF-CLS or for ORF fall to spring; however, there were substantive and potentially positive effect size differences favoring the treatment condition on NWF WRC and ORF fall to spring ($g = +.38$ and $g = +.30$, respectively). The WWC describes non-significant findings with effect sizes larger than $g = +.25$

		as substantive and rate the effectiveness of a particular intervention as “potentially positive.”
Statistical Significance	Y	The time by condition analysis demonstrated that students at risk for reading difficulties in ECRI schools made statistically significant gains from fall to winter over those in control schools on NWF-WRC ($t= 2.55, df= 14, p=.0230$) and ORF ($t= 2.24, df= 14, p= .0415$). We found no differences between conditions, however, in gains from winter to spring on NWF-CLS, NWF-WRC, and ORF ($p=.7750, .5982, \text{ and } .5971$, respectively). Students in ECRI schools, when compared to controls, made marginally significant gains on NWF-WRC ($t= 1.81, df= 14, p= .0919$) fall to spring but not on NWF-CLS or ORF. See p. 15 of study for explanation and possible reasons for fluency data from winter to spring and fall to spring. The analyses did not result in statistically significant findings for SAT10, WRMT-BS, or WRMT-TR. We found a marginally significant gain, however, for WRMT-BS ($t= 2.00, df= 14, p= .0651$). Although we had not hypothesized that the ECRI intervention would produce differences between conditions in comprehension, due to the focus on foundational reading skills, we tested student scores on the WRMT-RC. The difference between condition was in the expected direction but not statistically significant for WRMT-RC ($p=.3419, g= .28$)
*Effect Size	Y	Analysis of proximal measures revealed a statistically significant difference favoring intervention students on NWF-WRC and ORF fall to winter, with effect sizes of $g= +.42$, and $+.34$, respectively. There were no significant effects for NWF-WRC, NWF-CLS or for ORF fall to spring; however, there were substantive and potentially positive effect size differences favoring the treatment condition on NWF WRC and ORF fall to spring ($g= +.38$ and $+.30$, respectively).
*MTSS Level of Support	Y	Tier 2 & Tier 3 interventions

*Peer Review (Y/N)	Y	Human Institute on Disabilities Journal of Learning Disabilities
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MOWR Committee findings:

-Will be added to the MOWR Intervention Program Vetted List.