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ESSA TIER 2 - MODERATE EVIDENCE (MULTIPLE STUDIES)

HILL for Literacy: Evidence of Effectiveness

An independent evaluation of the HILL implementation model, spanning school-level stud ent reading outcomes and educator learning outcomes across two studies.

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STUDY 1 · QUASI-EXPERIMENTAL

Connecticut Literacy Model — Tier 1 Classroom Reading Instruction

Coyne et al. (2024), published in *The Elementary School Journal*. A successive cohort design across 686 K–3 students in four high-need Connecticut schools, evaluated on DIBELS 8th Edition composites.

KEY FINDING

↑ +3.5 ↑ +5.6 Year 2

additional months of reading growth

STUDY 2 · RANDOMIZED CONTROLLED

Science of Reading PD Series — Paraprofessional Knowledge and Self-Efficacy

Melton (2026), University of Connecticut. A randomized waitlist control trial with 69 paraprofessionals across three Pacific Northwest districts, paired with focus group interviews.

KEY FINDING

↑ +22 *self-efficacy* ↑ +39 *SOR knowledge*

percentile point gain vs. waitlist controls

This report summarizes two studies of HILL for Literacy's implementation model, reviewed by LXD Research for validation under the Every Student Succeeds Act (ESSA) evidence framework. Together, the studies meet the requirements for Tier 2, Moderate Evidence (Multiple Studies). Full citations and statistical notes appear on page 4.

HILL FOR LITERACY

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STUDY 1 · MODERATE EVIDENCE CASE STUDY

Connecticut Literacy Model — Tier 1 Classroom Reading Instruction

Study Details

Sample

- 686 K–3 students at baseline; 625 after Year 1, 679 after Year 2
- Four elementary schools in four Connecticut districts

Demographics

- 73.4% Hispanic
- 14% Black
- 9.5% White
- 81% free/reduced-price lunch eligibility

Design

- Quasi-experimental successive cohort design
- Baseline business-as-usual year as comparison
- Subsequent cohorts received CTLM Tier 1 instruction

Assessment

DIBELS 8th Edition composite z-scores across grade-appropriate subtests

Analysis

Two-level mixed-effects models controlling for school, cohort, ethnicity, gender, and free/reduced lunch eligibility

Study Summary

Since 2012, HILL for Literacy has been a founding partner in Connecticut's Partnership for Literacy Success, collaborating with the Connecticut State Department of Education and the University of Connecticut's Neag School of Education to develop, implement, and evaluate the Connecticut Literacy Model (CTLM). Coyne and colleagues (2024), published in *The Elementary School Journal*, evaluated the CTLM's Tier 1 component in four high-need elementary schools — all serving predominantly low-income students of color and all ranking in the bottom 10% of the state on early reading assessments before implementation.

The CTLM replaced inconsistent, teacher-varied instruction with a coordinated school-wide Tier 1 model built on five components: a protected 90-minute daily reading block, a comprehensive core reading program, teacher-developed whole-group instructional templates, data-driven differentiated small-group instruction, and intensive ongoing coaching from the HILL staff. The HILL's Executive Director Darci Burns is listed co-author on the published study, reflecting the HILL's depth of involvement in both implementation and evaluation.

KEY FINDING · YEAR 1

+3.5 months

Additional reading growth across all grades (d = 0.32, p < .001) vs. baseline cohort

KEY FINDING · YEAR 2

+5.6 months

Additional reading growth across all grades (d = 0.51, p < .001); effects deepened with sustained implementation

128 CT DISTRICTS

385

Since 2013, the Partnership with the HILL as a core partner has expanded to **128 Connecticut districts and 385 schools** (Coyne et al., 2025), and the model is now codified in Connecticut's 2021 Right to Read Act.

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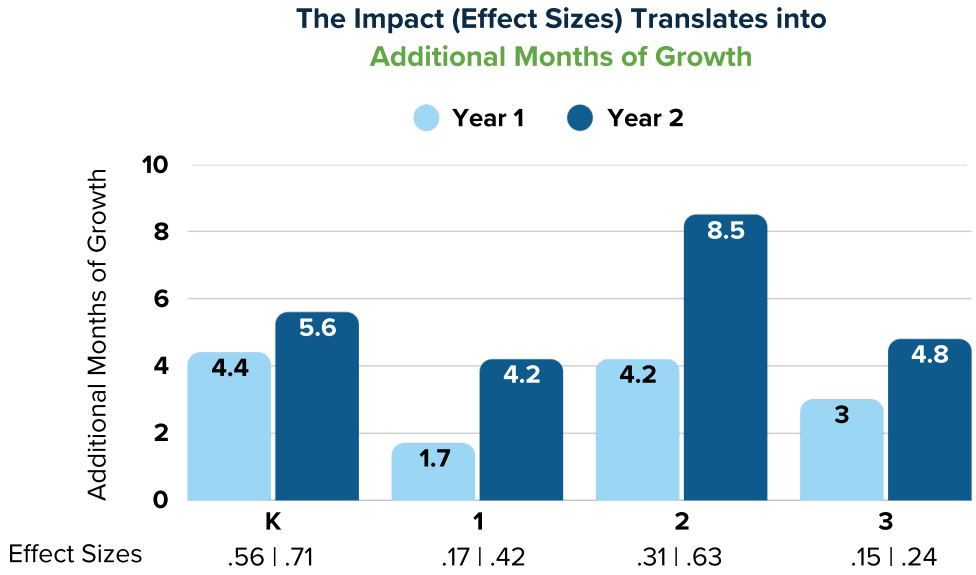
Connecticut Literacy Model — Tier 1 Classroom Reading Instruction

Student Outcomes

Students in schools implementing the CTLM showed statistically significantly higher early reading outcomes after both one and two years compared to the baseline year. The overall effect size after Year 1 was $d = 0.32$, growing to $d = 0.51$ after Year 2. These effect sizes are translated to approximately **3.5 and 5.6 additional months of reading growth,** respectively. Kindergarten and second grade showed the largest gains, and effects deepened between Years 1 and 2, consistent with the compounding benefit of students receiving consecutive years of coordinated instruction delivered by teachers with growing expertise.



Effect sizes are standardized mean differences (DIBELS composite z-scores). Months-of-growth estimates use Lipsey et al. (2012) typical annual reading growth norms for broad standardized measures. All pooled effects statistically significant ($p < .001$). Source: Coyne et al. (2024), Elementary School Journal.

Equity Finding

After two years, racial achievement gaps that had appeared in Year 1 between White and Black students were no longer statistically significant, suggesting equity potential with sustained implementation. Socioeconomic gaps, however, persisted, reinforcing that Tier 1 alone is not sufficient for all students and that Tier 2 supports remain essential.

For schools and districts seeking to improve early reading outcomes, particularly in high-need communities, the evidence from Connecticut suggests that partnering with an experienced implementation team like the HILL, one embedded in both the research and the daily work of schools, is a key ingredient in achieving and sustaining results.

Study citations:

Coyne, M.D., Oldham, A., Gage, N.A., Burns, D., Leonard, K., Gillis, M., Hickey, M., & White, J. (2024). The effects of comprehensive and coordinated Tier 1 classroom reading instruction implemented within a Multi-Tiered System of Support (MTSS) framework as part of a state reading initiative. *The Elementary School Journal, 125*(2). https://doi.org/10.1086/733042

Coyne, M.D., Zagata, E., Oldham, A., & Bourget, J. (2025). *2012–2025 Comprehensive Summary Report: Connecticut's Partnership for Literacy Success and Connecticut's Literacy Model (CTLM).* University of Connecticut, Neag School of Education.

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STUDY2· MODERATE EVIDENCE CASE STUDY

Science of Reading Professional Development Series — Paraprofessional Knowledge and Self-Efficacy

Study Details

Sample & Demographics

69 paraprofessionals in the final analytic sample (32 treatment, 37 waitlist control), drawn from three school districts in the Pacific Northwest with student populations ranging from 33–63% White and 40–66% free/reduced-price lunch eligibility.

Design

- Randomized waitlist control trial with blocked randomization stratified by school district, followed by three focus group interviews with a subset of treatment participants.
- Baseline equivalence was established across groups on demographic characteristics and on pretest scores for both outcome measures.

Analysis

Analysis of covariance (ANCOVA) controlling for pretest scores, participant age, years of experience, and school district. Effects reported as Hedges's *g*.

Study Summary

The HILL's SoR PD series, originally developed for certified teachers and adapted to an asynchronous format, was offered to paraprofessionals in three Pacific Northwest school districts during summer 2025 to examine whether the training would build both their knowledge of reading science and their confidence in supporting students' reading. The study used a multiple-methods design, pairing a randomized waitlist control trial with focus group interviews to understand perceived benefits and challenges.

Melton (2026) conducted the first randomized study to evaluate the impact of the HILL's online, asynchronous Science of Reading Professional Development Series on paraprofessional educators. The study addresses a well-documented gap: paraprofessionals are increasingly relied upon to deliver reading interventions to students with and at risk of reading difficulties, yet rarely receive formal training in evidence-based literacy instruction. The intervention consisted of seven asynchronous online modules totaling approximately 12 hours, covering the brain and reading, oral language and literacy, features of effective instruction, phonemic awareness, word blending, automaticity, and text reading. Treatment-group participants completed the series over seven weeks; waitlist-control participants received access to the professional development series after posttest data collection. Two researcher-developed measures, the Science of Reading Knowledge Measure (SRKM), a 56-item assessment of conceptual and pedagogical knowledge validated by content experts, and the Science of Reading Self-Efficacy Scale (SRSES), an 8-item Likert-scale adaptation of Tschannen-Moran and Johnson's (2011) Teacher Beliefs – Teacher Self-Efficacy in Literacy Instruction scale, were used.

Most research on reading-focused professional development has been conducted with certified classroom teachers. The Melton study is one of the few randomized trials to evaluate the effect of a SoR professional learning series on paraprofessionals' knowledge and self-efficacy, delivered in an online, asynchronous format. The finding that the HILL for Literacy Science of Reading series produces a large effect on educators' knowledge, comparable to or larger than effects reported in meta-analyses of reading professional development for certified teachers, extends the evidence base for this kind of work to a population the field has historically underserved. For schools and districts working to build coherent, SoR- aligned literacy instruction across all the adults who teach reading, the results suggest that the HILL's professional learning can play a meaningful role.

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Educator Outcomes

Paraprofessionals who completed the series demonstrated **statistically significantly greater gains in Science of Reading knowledge** than waitlist controls (adjusted mean difference = 8.5 points on the 56- item SRKM; Hedges's g = 1.22, p < .001) — a large effect corresponding to approximately 39 percentile points at posttest. They also reported **significantly higher self-efficacy** for delivering evidence-based reading instruction (adjusted mean difference = 0.55 on a 5-point scale; g = 0.57, p < .001), a moderate effect corresponding to approximately 22 percentile points at posttest. The study meets What Works Clearinghouse Group Design Standards with Reservations, given its attrition rate combined with established baseline equivalence across groups.

KEY FINDING

↑ **+39**

SOR knowledge

percentile point gain vs. waitlist controls (g = 1.22, p < .001) — a large effect

KEY FINDING

↑ **+22**

self-efficacy

percentile point gain vs. waitlist controls (g = 0.57, p < .001) — a moderate effect

Focus Group Findings

Theme 1: Filling the Gaps

The series provided paraprofessionals foundational knowledge they had previously lacked, gave them a common language to use with certified teachers, and clarified why their schools' reading curricula use the instructional routines.

Theme 2: Interactive Learning

Video modeling of evidence-based reading routines was cited as the single most useful feature of the series, while also noting that participants would welcome more opportunities to engage with a live instructor and with peers completing the training.

Theme 3: Flexibility & Accessibility

The online asynchronous summer format, which allowed paraprofessionals to fit the training around personal schedules and to revisit content as needed, was strongly preferred.

Synthesis & Recommendations

1

Invest in the systems surrounding instruction, not only the curriculum itself

Connecticut's effects rivaled many targeted interventions through improvements to universal classroom instruction — coaching, instructional templates, protected time, and school-level systems change are active ingredients.

2

Extend high-quality professional learning to all staff who teach reading

Paraprofessionals meaningfully build knowledge and confidence through the HILL's PD, with direct implications for who is included in literacy training rollouts given their role in Tier 2 and Tier 3 instruction.

3

Sustain the work over time

Effects deepened between Years 1 and 2, and the partnership has grown from a five-school pilot to 128 districts and 385 schools over more than a decade. Outcomes respond to sustained, coherent implementation.

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ESSA EVIDENCE REVIEW

Understanding ESSA Evidence — Tier 2, Moderate Evidence (Multiple Studies)

Educators search for high-quality research and evidence-based solutions to strengthen grant applications, support comprehensive and targeted instruction, and implement new programming in their schools.

The categories for ESSA evidence are Strong (Tier 1), Moderate (Tier 2), Promising (Tier 3), and Demonstrates a Rationale (Tier 4).Evidence requirements under the Every Student Succeeds Act (ESSA) are designed to ensure that states, districts, and schools can identify programs, practices, and services that work across various populations.

This body of work meets the requirements for Tier 2 (Multiple Studies):

- In a quasi-experimental **successive cohort design**, student reading outcomes were examined against a baseline comparison cohort in schools implementing the HILL's MTSS model.
- At least one quasi-experimental study with the proper design and implementation, with a **multi-site sample of 686 K–3 students across four schools in four districts**, showed statistically significant, positive findings.
- A **randomized waitlist control trial** further examined the HILL's Science of Reading professional development series, producing statistically significant positive effects on educator knowledge (Hedges's g = 1.22) and self-efficacy (Hedges's g = 0.57).
- The studies **use program implementations that could be replicated** in other districts.
- A **third-party research organization has reviewed the documentation** for ESSA validation.

"When implementation partners leverage learning sciences to design and evaluate the effectiveness of their services, educators are better positioned to deliver high-quality instruction and positively influence students' skills. HILL for Literacy's evidence base, spanning both school-level student reading outcomes and educator learning outcomes, demonstrates the efficacy of its implementation model, meeting the criteria for LXD Research's ESSA Tier 2 Evidence (Multiple Studies)."

— Rachel Schechter, Ph.D., Founder of LXD Research

Notes on effect sizes: Effect sizes for Coyne et al. (2024) are standardized mean differences (Cohen's *d*) on DIBELS 8th Edition composite z-scores; months-of-growth estimates use Lipsey et al. (2012) typical annual growth norms (conversion: effect size ÷ typical annual growth × 12 months). Effect sizes for Melton (2026) are Hedges's *g*; percentile interpretations use the WWC improvement-index framework.

Study citations: Coyne, M.D., Oldham, A., Gage, N.A., Burns, D., Leonard, K., Gillis, M., Hickey, M., & White, J. (2024). The effects of comprehensive and coordinated Tier 1 classroom reading instruction implemented within a Multi-Tiered System of Support (MTSS) framework as part of a state reading initiative. *The Elementary School Journal, 125*(2). https://doi.org/10.1086/733042 · Coyne, M.D., Zagata, E., Oldham, A., & Bourget, J. (2025). *2012–2025ComprehensiveSummaryReport:Connecticut's PartnershipforLiteracySuccessandConnecticut'sLiteracyModel(CTLM)* . University of Connecticut, Neag School of Education. · Melton, C. (2026). *TheEffectofa Science of Reading Professional Development Series on Paraprofessionals' Knowledge of and Self-Efficacy* [Doctoral dissertation, University of Connecticut]. · LXD Research is an independent research firm that evaluates educational programs with ESSA-aligned methods. Learn more at www.lxdresearch.com.

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