

What Works Clearinghouse



Literacy Express

Program Description² *Literacy Express* is a preschool curriculum designed for three- to five-year-old children. It is structured around units on oral language, emergent literacy, basic math, science, general knowledge, and socioemotional development. It can be used in half- or full-day programs with typically developing children and

children with special needs. It provides professional development opportunities for staff; teaching materials; suggested activities; and recommendations for room arrangement, daily schedules, and classroom management.

Research³ Three studies of *Literacy Express* that fall within the scope of the Early Childhood Education review protocol meet What Works Clearinghouse (WWC) evidence standards. The three studies include 1,004 preschool children from three to five years of age from 70 preschools in Florida and California.⁴

medium to large for oral language, print knowledge, and phonological processing and small for cognition and math. No studies that meet WWC evidence standards with or without reservations examined the effectiveness of *Literacy Express* on preschool children in the early reading and writing domain.

Based on these three studies, the WWC considers the extent of evidence for *Literacy Express* on preschool children to be

1. This report has been updated to include a review of two studies that were released since 2007. These studies are within the scope of the protocol and meet evidence standards. The findings described in the previous *Literacy Express* intervention report were based, in part, on studies by Lonigan (2005, 2006). A review of those studies for the present report revealed that they were based on a second cohort of children from a randomly assigned set of preschools. Since children entered the preschools after random assignment, the initial equivalence of the treatment and control groups must be established. Tests of the equivalence of the analysis samples conducted by Lonigan showed statistically significant differences between the *Literacy Express* group and the control group on 5 of 11 outcome measures. Hence, results from the Lonigan (2005, 2006) studies were not considered when preparing the present intervention report. A complete list and disposition of all studies reviewed are provided in the references.
2. The descriptive information for this program was obtained from publicly available sources: the research literature (Lonigan, Farver, Clancy-Menchetti, & Phillips, 2005) and from the developer as part of the WWC's standard developer contact process. The WWC requests developers to review the program description sections for accuracy from their perspective. Further verification of the accuracy of the descriptive information for this program is beyond the scope of this review. The literature search reflects documents publicly available by May 2009.
3. The studies in this report were reviewed using WWC Evidence Standards, Version 2.0 (see the WWC Procedures and Standards Handbook, Chapter III) as described in protocol Version 2.0.
4. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

Effectiveness *Literacy Express* was found to have positive effects on oral language, print knowledge, and phonological processing and no discernible effects on cognition and math for preschool children.

	<i>Oral language</i>	<i>Print knowledge</i>	<i>Phonological processing</i>	<i>Early reading/writing</i>	<i>Cognition</i>	<i>Math</i>
Rating of effectiveness	Positive effects	Positive effects	Positive effects	na	No discernible effects	No discernible effects
Improvement index⁵	Average: +12 percentile points Range: -2 to +23 percentile points	Average: +15 percentile points Range: +2 to +24 percentile points	Average: +12 percentile points Range: +6 to +21 percentile points	na	Average: +1 percentile point Range: -5 to +5 percentile points	Average: 0 percentile points Range: -1 to +2 percentile points

na = not applicable

Absence of conflict of interest

The PCER Consortium (2008) study summarized in this intervention report had numerous contributors, including staff of Mathematica Policy Research. Because the principal investigator for the WWC Early Childhood Education review is also a Mathematica

staff member, the study was rated by Chesapeake Research Associates, which also prepared the intervention report. The report was then reviewed by the principal investigator, a WWC Quality Assurance reviewer, and an external peer reviewer.

Additional program information

Developer and contact

Developed by Christopher J. Lonigan, Ph.D.; Jeanine Clancy-Menchetti, Ph.D.; Beth M. Phillips, Ph.D.; and colleagues, *Literacy Express* is currently available in limited commercial distribution through Literacy Express. Email: LiteracyExpress@hotmail.com.

Scope of use

Literacy Express has been implemented by preschool and child care programs in California, Florida, Massachusetts, New Mexico, and Texas. These programs have included typically developing children, children with special needs, and English language learners. However, information is not available on the number or demographics of children or centers using this program.

Teaching

Literacy Express is a preschool curriculum intended to improve children’s language development and early literacy achievement that can be implemented in various early childhood settings. It includes daily individual, small-group, and large-group activities and a balance of teacher-initiated and child-initiated activities. *Literacy Express* is structured around 10 thematic units, covered in three to four weeks each, that can be integrated into classroom activities.⁶ The units are sequenced in order of increasing complexity, each building on the previous one. In each unit, teachers use three specific and brief small-group activities daily (dialogic reading, phonological awareness activities, and print knowledge activities) with groups of three to five children. Teachers also select from a number of suggested large-group

5. These numbers show the average and range of student-level improvement indices for all findings across the studies.

6. The research reviewed for this report is based on an earlier version of the curriculum with 11 thematic units.

Additional program information *(continued)*

activities for each unit that involve active child participation to use skills learned in the small-group activities in new contexts. The curriculum includes both teacher- and child-directed math and science activities that follow a developmental scope and sequence. The curriculum also provides suggested activities—art, cooking, science, discovery, and gross and fine motor activities—for many independent play centers. The complete curriculum package includes a teacher’s manual; 10 thematic unit guides; a unit guide for augmentative or summer activities (“Off to Kindergarten”); and key curriculum materials such as shape materials, more than 80 thematically linked picture books

Research

Four studies reviewed by the WWC investigated the effects of *Literacy Express* on preschool children. Three studies (Farver, Lonigan, & Eppe, 2009; Lonigan, Farver, Clancy-Menchetti, & Phillips, 2005; and PCER Consortium, 2008) are randomized controlled trials that meet WWC evidence standards. The remaining study does not meet WWC evidence standards or eligibility screens.

Meets evidence standards

Farver, Lonigan, and Eppe (2009) randomly assigned 96 Spanish-speaking children in 10 classes in a Los Angeles Head Start center to one of three groups: (1) an English-only *Literacy Express* group, (2) a transitional *Literacy Express* group in which instruction began in Spanish and transitioned to English over the course of the intervention, and (3) a control group. This report focuses on the comparison of English language outcomes between the combined English-only and transitional groups and the no-treatment comparison group. For both *Literacy Express* groups, the intervention was implemented in small groups in a classroom adjacent to the children’s regular classroom. Pretest and posttest data were obtained for 94 children (31 English-only *Literacy Express*, 31 transitional *Literacy Express*, and 32 control). On average, the participants were age 54.5 months (4.5

and alphabet books, and phonological awareness activity picture cards, letters, and numbers. Teachers participate in a two-day professional development workshop at the beginning of the school year and in either two additional half-day workshops or one additional full-day workshop.

Cost

The current cost for a complete *Literacy Express* classroom package is \$2,300. Professional development fees vary by the size of the group and the number of trainers.

years); 54% were boys. The study investigated oral language, phonological awareness, and print knowledge. The control condition was the *High/Scope* curriculum.

Lonigan et al. (2005) randomly assigned 18 preschools (mostly Head Start centers) in Florida and 30 preschools in California to implement *Literacy Express* or to a control group. Pretest and posttest data (collected in the fall and spring of the preschool year) were obtained for 722 children (486 *Literacy Express* and 236 control). Fifty-one percent of the children were male; 35% were Hispanic, 8% were Caucasian, and 56% were African American; and 52% of the children in the California preschools and 1% of the children in the Florida preschools were Spanish-speaking English language learners. All children were considered at risk for academic difficulties as determined by pretest scores on a measure of cognitive performance. The study investigated effects on oral language, print knowledge, phonological processing, and cognition. The control group implemented the preschool’s standard curriculum, which in most cases was *High/Scope* or *Creative Curriculum*®.

PCER Consortium (2008) assessed the effectiveness of *Literacy Express* as part of the Preschool Curriculum Evaluation Research (PCER) effort.⁷ The PCER Consortium (2008) used a randomized controlled trial design in which 12 full-day

7. The PCER Consortium (2008) evaluated a total of 14 preschool curricula, including *Literacy Express*, in comparison to respective control conditions.

Research (continued)

preschools in Florida were randomly assigned to implement *Literacy Express* or to a control group. Pretest and posttest data (collected in the fall and spring of the preschool year) were obtained for 188 children (93 *Literacy Express* and 95 control). Fifty-four percent of the children were male; 6% were Hispanic, 30% were Caucasian, and 59% were African American; and 36% were reported to have a disability. The study investigated effects on oral language, print knowledge, phonological processing, and math. The control condition was the *High/Scope* curriculum.

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or medium to large (see the WWC Procedures and

Standards Handbook, Appendix G). The extent of evidence takes into account the number of studies and the total sample size across the studies that meet WWC evidence standards with or without reservations.⁸

The WWC considers the extent of evidence for *Literacy Express* to be medium to large for oral language, print knowledge, and phonological processing and small for cognition and math for preschool children. No studies that meet WWC evidence standards with or without reservations examined the effectiveness of *Literacy Express* in the early reading and writing domain for preschool children.

Effectiveness Findings

The WWC review of interventions for *Literacy Express* addresses student outcomes in six domains: oral language, print knowledge, phonological processing, early reading and writing, cognition, and math. The studies included in this report cover five domains: oral language, print knowledge, phonological processing, cognition, and math. The findings below present the authors' estimates and WWC-calculated estimates of the size and the statistical significance of the effects of *Literacy Express* on preschool children.⁹

Oral language. Farver, Lonigan, and Eppe (2009) analyzed the effectiveness of *Literacy Express* on oral language using the Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP) Receptive Vocabulary and Definitional Vocabulary subtests. The analyses showed, and the WWC confirmed, a statistically significant positive effect of 0.57 across

the two measures (0.55 for receptive vocabulary and 0.60 for definitional vocabulary) when children in the *Literacy Express* group were compared to children in the control group. According to WWC criteria, this study shows a potentially positive effect on oral language.

Lonigan et al. (2005) analyzed the effectiveness of *Literacy Express* on oral language using the Preschool Language Scales–IV (PLS–IV) Expressive Communication subtest. The authors found, and the WWC confirmed, a statistically significant and substantively important positive effect of 0.30 when children in the *Literacy Express* group were compared to children in the control group. According to WWC criteria, this study shows a potentially positive effect on oral language.

The PCER Consortium (2008) analyzed the effectiveness of *Literacy Express* on oral language using the Peabody Picture Vocabulary Test III (PPVT–III) and the Test of Language

8. The extent of evidence categorization was developed to tell readers how much evidence was used to determine the intervention rating, focusing on the number and size of studies. Additional factors associated with a related concept—external validity, such as the students' demographics and the types of settings in which studies took place—are not taken into account for the categorization. Information about how the extent of evidence rating was determined for *Literacy Express* is in Appendix A6.
9. The level of statistical significance was reported by the study authors or, when necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For the formulas the WWC used to calculate the statistical significance, see WWC Procedures and Standards Handbook, Appendix C for clustering and WWC Procedures and Standards Handbook, Appendix D for multiple comparisons. For the *Literacy Express* studies summarized here, no correction for clustering was needed. In the cases of Farver, Lonigan, and Eppe (2009) and Lonigan et al. (2005), a correction for multiple comparisons was needed, so the significance levels may differ from those reported in the original studies.

Effectiveness (continued)

Development–Primary III (TOLD-P:3) Grammatical Understanding subtest. The analyses showed, and the WWC confirmed, that differences between *Literacy Express* and the control group curriculum are not statistically significant or substantively important on either of these measures. According to WWC criteria, this study shows no discernible effects on oral language.

Print knowledge. Farver, Lonigan, and Eppe (2009) analyzed the effectiveness of *Literacy Express* on print knowledge using the Pre-CTOPPP Print Knowledge subtest. Their analyses showed, and the WWC confirmed, a statistically significant positive effect of 0.64 when comparing the *Literacy Express* group and the control group. According to WWC criteria, this study shows a potentially positive effect on print knowledge.

Lonigan et al. (2005) analyzed the effectiveness of *Literacy Express* on print knowledge using the Pre-CTOPPP Print Knowledge subtest. Their analyses showed, and the WWC confirmed, a statistically significant and substantively important positive effect of 0.32 when *Literacy Express* was compared to the control group curriculum. According to WWC criteria, this study shows a potentially positive effect on print knowledge.

The PCER Consortium (2008) analyzed the effectiveness of *Literacy Express* on print knowledge using the Test of Early Reading Ability–III (TERA-3), the Woodcock–Johnson III (WJ-III) Letter–Word Identification subtest, and the WJ-III Spelling subtest. The authors report, and the WWC confirms, that differences between *Literacy Express* and the control group curriculum are not statistically significant on any of these measures, although there is a substantively important effect of 0.30 on the WJ-III Letter–Word Identification subtest. According to WWC criteria, this study shows no discernible effects on print knowledge.

Phonological processing. Farver, Lonigan, and Eppe (2009) analyzed the effect of *Literacy Express* on phonological processing using the Pre-CTOPPP Blending and Elision subtests. Their results showed, and the WWC confirmed, a statistically significant and substantively important positive effect of 0.54 across the two measures (0.51 for Elision and 0.56 for Blending).

According to WWC criteria, this study shows a potentially positive effect on phonological processing.

Lonigan et al. (2005) analyzed the effectiveness of *Literacy Express* on phonological processing using the Pre-CTOPPP Blending and Elision subtests. Their analyses showed, and the WWC confirmed, a statistically significant and substantively important positive effect of 0.26 across the two measures. This result was due primarily to a statistically significant and substantively important positive effect of 0.38 on the Elision subtest (the effect on the Blending subtest was neither statistically significant nor substantively important). According to WWC criteria, this study shows a potentially positive effect on phonological processing.

The PCER Consortium (2008) analyzed the effectiveness of *Literacy Express* on phonological processing using the Pre-CTOPPP Elision subtest. The authors report, and the WWC confirms, that the difference between the *Literacy Express* group and the control group is not statistically significant or substantively important on this measure. According to WWC criteria, this study shows no discernible effects on phonological processing.

Cognition. Lonigan et al. (2005) analyzed the effectiveness of *Literacy Express* on cognition using three subtests from the Pre-CTOPPP–Non-Word Repetition, Word Span, and Rapid Object Naming. The authors report, and the WWC confirms, that the differences between the *Literacy Express* group and the control group were not statistically significant or substantively important for any of these three measures. According to WWC criteria, this study shows no discernible effects on cognition.

Math. The PCER Consortium (2008) analyzed the effectiveness of *Literacy Express* on math using the WJ-III Applied Problems subtest, the Child Math Assessment–Abbreviated (CMA-A), and the Shape Composition task. The authors report, and the WWC confirms, that differences between the *Literacy Express* group and the control group are not statistically significant or substantively important on any of these measures. According to WWC criteria, this study shows no discernible effects on math.

Effectiveness *(continued)*

The WWC found *Literacy Express* to have positive effects on oral language, print knowledge, and phonological processing and no discernible effects on cognition and math for preschool children

Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research

Improvement index

The WWC computes an improvement index for each individual finding. In addition, within each outcome domain, the WWC computes an average improvement index for each study and an average improvement index across studies (see WWC Procedures and Standards Handbook, Appendix F). The improvement index represents the difference between the percentile rank of the average student in the intervention condition and the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is entirely based on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analysis. The improvement index can take on values between -50 and +50, with positive numbers denoting favorable results for the intervention group.

Based on three studies, the average improvement index for *Literacy Express* on oral language is +12 percentile points, with a range of -2 to +23 percentile points across findings; the average improvement index on print knowledge is +15 percentile points,

design, the statistical significance of the findings, the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the WWC Procedures and Standards Handbook, Appendix E).

with a range of +2 to +24 percentile points across findings; and the average improvement index on phonological processing is +12 percentile points, with a range of +6 to +21 percentile points across findings. Based on one study, the average improvement index for *Literacy Express* on cognition is +1 percentile point, with a range of -5 to +5 percentile points across findings, and the average improvement index on math is 0 percentile points, with a range of -1 to +2 percentile points across findings.

Summary

The WWC reviewed four studies of *Literacy Express* for preschool children. Three of these studies meet WWC evidence standards; the remaining study does not meet either WWC evidence standards or eligibility screens. Based on the three studies, the WWC found positive effects on oral language, print knowledge, and phonological processing and no discernible effects on cognition and math for preschool children. The conclusions presented in this report may change as new research emerges.

References

Meet WWC evidence standards

- Farver, J. M., Lonigan, C. J., & Eppe, S. (2009). Effective early literacy skill development for young Spanish-speaking English language learners: An experimental study of two methods. *Child Development, 80*(3), 703–719.
- Lonigan, C. J., Farver, J. M., Clancy-Menchetti, J., & Phillips, B. M. (2005, April). *Promoting the development of preschool children's emergent literacy skills: A randomized evaluation of a literacy-focused curriculum and two professional development models*. Paper presented at the biennial meeting of the Society for Research in Child Development, Atlanta, GA.

Additional sources:

- Farver, J. A. M. (2005). *Best practices in promoting literacy in young ethnic minority children: Lessons from the United States*. Beijing, China: Soong Ching Ling Foundation and UNICEF.
- Lonigan, C. J. (2006). Development, assessment, and promotion of preliteracy skills. *Early Education and Development, 17*(1), 91–114.
- Lonigan, C. J., Farver, J. M., Clancy-Menchetti, J., & Phillips, B. M. (2005, June). *Promoting the development of preschool children's emergent literacy skills: A randomized evaluation*

References (continued)

of a literacy-focused curriculum and two professional development models. Paper presented at the 12th annual meeting of the Society for the Scientific Study of Reading, Toronto, Ontario, Canada.

Preschool Curriculum Evaluation Research (PCER) Consortium. (2008). *Literacy Express and DLM Early Childhood Express* supplemented with *Open Court Reading Pre-K*: Florida State University. In *Effects of preschool curriculum programs on school readiness* (pp. 117–130). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Research.

Studies that fall outside the Early Childhood Education protocol or do not meet WWC evidence standards

Lonigan, C. J. (2005, December). *Impact of preschool literacy curricula: Results of a randomized evaluation in a public*

prekindergarten program. Paper presented at the annual meeting of the National Association for the Education of Young Children, Washington, DC. The study does not meet WWC evidence standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.

Additional source:

Lonigan, C. J. (2006, July). *Impact of preschool literacy curricula: Results of a randomized evaluation in a public prekindergarten program*. Paper presented at the 13th annual meeting of the Society for the Scientific Study of Reading, Vancouver, British Columbia, Canada.