What Works Clearinghouse

ies INSTITUTE OF EDUCATION SCIENCES

Doors to Discovery™

Program description[1]

Doors to Discovery™ is an early childhood curriculum that uses thematic units to engage young children and support them as they build an understanding of their world. *Doors to Discovery*™ literacy activities are used to encourage children's development in a number of areas identified by research as the foundation for early literacy success: oral language, phonological awareness, concepts of print, alphabet knowledge, writing, and comprehension.

Research

One study of *Doors to Discovery*™ met the What Works Clearinghouse (WWC) evidence standards.[2] This study included 76 classrooms in universal pre-kindergarten, Head Start, or Title I programs in the Houston, Texas, metropolitan area and examined intervention effects on children's oral language, print knowledge, and phonological processing. This report focuses on immediate posttest findings to determine the effectiveness of the intervention.[3] The WWC considers the extent of evidence for *Doors to Discovery*™ to be small for oral language, print knowledge, and phonological processing. No studies that met WWC evidence standards with or without reservations addressed early reading/writing, cognition, or math.

Effectiveness

Doors to Discovery™ was found to have no discernible effects on oral language, print knowledge, and phonological processing.

	Oral language	*Print knowledge*	*Phonological processing*	*Early reading/writing*	*Cognition*	*Math*
Rating of effectiveness	No discernible effects	No discernible effects	No discernible effects	na	na	na
Improvement index[4]	Average: –8 percentile points Range: –11 to –6 percentile points	Average: +3 percentile points	Average: +5 percentile points Range: +4 to +5 percentile points	na	na	na

na = not applicable

1. The descriptive information for this program was obtained from publicly available sources: the program's web site (http://www.wrightgroup.com/index.php/programsummary?isbn=0076036243, downloaded March 16, 2007) and the research literature (Assel, Landry, Swank, & Gunnewig, 2006). 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.
2. To be eligible for the WWC's review, the Early Childhood Education (ECE) intervention had to be implemented in English in center-based settings with children ages 3 to 5 or in preschool.
3. The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available. *Doors to Discovery*™ is being studied under the Preschool Curriculum Evaluation Research (PCER) Grants administered through the U.S. Department of Education's Institute of Education Sciences. The final PCER reports were not released in time to be reviewed for this report.
4. These numbers show the average and range of student-level improvement indices for all findings across the study.

Additional program information[1]

Developer and contact

Doors to Discovery™ was developed and is distributed by Wright Group/McGraw-Hill. Address: 220 East Danieldale Road, DeSoto, TX 75115. Web: www.wrightgroup.com Telephone: (800) 648-2970. Fax: (800) 593-4418.

Scope of use

According to the developer, the curriculum is used in various early childhood settings including Head Start, private child care, public schools, and Early Reading First Centers of Excellence. Information is not available on the number or demographics of children or centers using this program.

Teaching

Doors to Discovery™ includes eight thematic units (Backyard Detectives; Build it Big!; Discovery Street; Healthy Me!; New Places, New Faces; Our Water Wonderland; Tabby Tiger's Diner; and Vroom! Vroom!), each of which provides opportunities for children to explore. Each unit is available as a kit that includes various teacher resources. Children are taught using specific teacher techniques (such as cloze techniques, student retelling, think aloud activities, and scaffolding to build oral language skills) within literacy-enriched learning centers. Family literacy activities are available to encourage partnerships between the school and the home. The major focus of the curriculum is the development of children's vocabulary and expressive and receptive language through a learning process called shared literacy (where adults and children work together to develop literacy related skills). Teachers are trained during professional development activities and with other resources like the Discovery Guide (a built-in professional development resource). The study reviewed also provided other details about the program including extended discussion after storybook reading, the use of monthly themes, and the emphasis on small-group activities.

Cost

The complete *Doors to Discovery*™ set is available to education professionals for $2,130. Alternatively, each theme kit can be purchased separately for $297. Teacher resources, such as alphabet posters and an assessment handbook, are also available for purchase. Additional pricing information for other materials (e.g., teacher resources and children's books) is available on the web site. The prices listed on the web site are for education professionals only. Information about the cost of professional development is not available.

Research

Two studies reviewed by the WWC investigated the effects of *Doors to Discovery*™ in center-based settings. One study (Assel, Landry, Swank, & Gunnewig, 2006) was a randomized controlled trial that met WWC evidence standards. The remaining study did not meet WWC evidence screens.

Assel et al. (2006) included 76 classrooms from universal pre-kindergarten, Head Start, and Title I programs in the Houston, Texas, metropolitan area. Within these three program types, Assel et al. randomly assigned school sites to one of three conditions (*Doors to Discovery*™, *Let's Begin with the Letter People*®, or a business-as-usual comparison condition).[5] Schools in each of the two intervention conditions were further assigned to mentoring and no-mentoring conditions. The WWC is interested in the overall effectiveness of *Doors to Discovery*™. Variations in intervention effects by implementation (with or without mentoring) or program type (universal pre-kindergarten, Head Start, or Title I) are outside the scope of this review. Therefore, the WWC combined the *Doors to Discovery*™ mentoring and *Doors to Discovery*™ no-mentoring groups across program type. The rating of effectiveness is

5. For the rating of effectiveness in this WWC intervention report, the WWC includes only the results comparing the *Doors to Discovery*™ intervention group to the business-as-usual comparison group; however, results for the comparison between the curricula are included in a separate section of this report and Appendices A6.1–A6.3. The WWC includes the *Let's Begin with the Letter People*® versus business-as-usual comparison in a separate WWC *Let's Begin with the Letter People*® intervention report.

Research *(continued)*

based on the comparison of oral language, print knowledge, and phonological processing outcomes of the combined group with the business-as-usual comparison group.[6]

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or moderate to large (see the What Works Clearinghouse Extent of Evidence Categorization Scheme). The extent of evidence takes into account the number of studies and the total sample size across the studies that met WWC evidence standards with or without reservations.[7]

The WWC considers the extent of evidence for *Doors to Discovery*™ to be small for oral language, print knowledge, and phonological processing. No studies that met WWC evidence standards with or without reservations addressed early reading/writing, cognition, or math.

Effectiveness

Findings

The WWC review of interventions for early childhood education addresses children's outcomes in six domains: oral language, print knowledge, phonological processing, early reading/writing, cognition, and math. Assel et al. (2006) addressed outcomes in the oral language, print knowledge, and phonological processing outcome domains. The findings below present the WWC-calculated estimates of the size and statistical significance of the effects of *Doors to Discovery*™ on children's performance.[8]

Oral language. Assel et al. (2006) analyzed the differences between the *Doors to Discovery*™ and business-as-usual comparison groups within program type and by mentoring condition for two measures in this outcome domain [the Preschool Language Scale-IV (PLS-IV) Auditory Comprehension subscale and the Expressive Vocabulary Test (EVT)]. The differences between the intervention and business-as-usual comparison groups combined across program type and mentoring condition were not statistically significant for either outcome as calculated by the WWC, and the average effect size was neither statistically significant nor large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25).

Print knowledge. Assel et al. (2006) analyzed the differences between the *Doors to Discovery*™ and business-as-usual comparison groups within program type and by mentoring condition for one measure in this outcome domain, the Woodcock-Johnson III (W-J III) Letter Word Identification subtest. The difference between the intervention and business-as-usual comparison groups combined across program type and mentoring condition was not statistically significant as calculated by the WWC and it was not large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25).

Phonological processing. Assel et al. (2006) analyzed the differences between the *Doors to Discovery*™ and business-as-

6. The WWC recognizes that this is a different use of the data than intended by the study authors. The study authors reported findings separately for each condition (*Doors to Discovery*™ combined with mentoring, *Doors to Discovery*™ without mentoring) and each program type (universal pre-K, Head Start, or Title I). The WWC could not confirm these findings because critical data (the number of clusters for each condition and program type) were not available. Further, combining the data across mentoring conditions and program types better addresses overall intervention effectiveness, which is the main task for the WWC. Therefore, the WWC analysis, which uses data from the study, differs from the analysis in the original study. The study authors' findings are not reported in the body of this report because the analysis is not comparable to the WWC analysis, but the subgroup analyses for program type and for the mentoring condition are reported in Appendices A4.1–A4.3 and A5.1–A5.3.
7. 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.
8. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation, see the WWC Tutorial on Mismatch. See Technical Details of WWC-Conducted Computations for the formulas the WWC used to calculate the statistical significance. In the case of *Doors to Discovery*™, a correction for clustering was needed. Assel et al. (2006) described more detailed findings (intervention effects by mentoring condition and program type). The WWC focused on intervention effects combined across these conditions; therefore, the author's findings are not provided but are available in the original study.

Effectiveness *(continued)*

usual comparison groups within program type and by mentoring condition for two measures in this outcome domain [the Developing Skills Checklist (DSC) Auditory subscale and the Rhyming section of the W-J III Sound Awareness subtest]. The differences between the intervention and comparison groups combined across program type and mentoring condition were not statistically significant for either outcome as calculated by the WWC, and the average effect size was neither statistically significant nor large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25).

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 design, the statistical significance of the findings,[8] the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the WWC Intervention Rating Scheme).

The WWC found *Doors to Discovery*™ to have no discernible effects on oral language, print knowledge, and phonological processing

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 Technical Details of WWC-Conducted Computations). The improvement index represents the difference between the percentile rank of the average student in the intervention condition versus the percentile rank of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is based entirely on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analyses. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.

The average improvement index for oral language is –8 percentile points for the one study, with a range of –11 to –6 percentile points across findings. The improvement index for print knowledge is +3 percentile points for the one outcome in the study. The average improvement index for phonological processing is +5 percentile points for the one study, with a range of +4 to +5 percentile points across findings.

Findings for comparisons between *Doors to Discovery*™ and *Let's Begin with the Letter People*®

The data for the comparison described below were included in the Assel et al. (2006) study, but they do not contribute to the overall rating of effectiveness because the WWC included the comparison of *Doors to Discovery*™ with the business-as-usual comparison group in the rating for the same study, which provides the most direct evidence of *Doors to Discovery's* effects. However, the WWC believes that the findings from this comparison provide useful information to practitioners who may be interested in comparing the effects of different curricula. The WWC reports the findings for comparisons of *Doors to Discovery*™ and *Let's Begin with the Letter People*® here and in Appendices A6.1–A6.3. The WWC analyzed the differences between the *Doors to Discovery*™ and *Let's Begin with the Letter People*® groups combined across program type and mentoring condition.

Oral language. Assel et al. (2006) included data for two measures in this outcome domain. The differences between the *Doors to Discovery*™ and *Let's Begin with the Letter People*® groups were not statistically significant for either measure as calculated by the WWC, and the average effect size was neither statistically significant nor large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25). The average improvement index for oral language is –8 percentile points (*Doors to Discovery*™ is the intervention group and *Let's Begin with the Letter People*® is the comparison group), with a range of –7 to –10 percentile points across findings.

Print knowledge. Assel et al. (2006) included data for one measure in this outcome domain. The difference between the *Doors to Discovery*™ and *Let's Begin with the Letter People*®

The WWC found *Doors to Discovery*™ to have no discernible effects on oral language, print knowledge, and phonological processing *(continued)*

groups was not statistically significant as calculated by the WWC, and the effect size was neither statistically significant nor large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25). The improvement index is –7 percentile points (*Doors to Discovery*™ is the intervention group and *Let's Begin with the Letter People*® is the comparison group) for the one outcome in the study.

Phonological processing. Assel et al. (2006) included data for two measures in this outcome domain, and the WWC analysis indicated a statistically significant difference favoring the *Let's Begin with the Letter People*® group over the *Doors to Discovery*™ group for the DSC Auditory subscale. The finding for the other outcome measure was not statistically significant; however, the average effect size across both outcome measures was large enough to be considered substantively important according to the WWC criteria (that is, at least 0.25). The average improvement index for phonological processing is –10 percentile points (*Doors to Discovery*™ is the intervention group and *Let's Begin with the Letter People*® is the comparison group), with a range of –17 to –3 percentile points across findings.

Summary

The WWC reviewed two studies on *Doors to Discovery*™. One of these studies met WWC evidence standards; the other study did not meet WWC evidence screens. Based on this study, the WWC found no discernible effects for oral language, print knowledge, and phonological processing. Additional findings that were not considered for the rating of effectiveness indicated that *Doors to Discovery*™ and *Let's Begin with the Letter People*® affect children's outcomes similarly in the domains of oral language and print knowledge, but that *Let's Begin with the Letter People*® may have a larger impact on children's phonological processing than *Doors to Discovery*™. The evidence presented in this report may change as new research emerges.

References

Met WWC evidence standards

Assel, M. A., Landry, S. H., Swank, P. R., & Gunnewig, S. (2006). An evaluation of curriculum, setting, and mentoring on the performance of children enrolled in pre-kindergarten. *Reading and Writing*. Retrieved March 23, 2007, from http://www.springerlink.com/content/gx325u2h3612817r/fulltext.pdf

Did not meet WWC evidence screens

Christie, J., Roskos, K., Vukelich, C., & Han, M. (2003, June). The effects of a well-designed literacy program on young children's language and literacy development. In F. Lamb-Parker, J. Hagen, R. Robinson, & H. Rhee (Eds.), *The first eight years—pathways to the future: Implications for research, policy, and practice* (pp. 447–448). Proceedings of the Head Start National Research Conference. New York: Mailman School of Public Health, Columbia University.[9]

For more information about specific studies and WWC calculations, please see the WWC *Doors to Discovery*™ Technical Appendices.

9. Complete data are not reported: the WWC could not compute effect sizes because complete study details were not reported.