

Brief Overview of Findings from *Children's Access to Print Material and Education-Related Outcomes: Findings from a Meta-Analytic Review**

Roger A. Stewart, Ph.D.

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* Lindsay, J. (August, 2010). *Children's Access to Print Material and Education-Related Outcomes: Findings from a Meta-Analytic Review*. A literature review sponsored by Reading is Fundamental. The full report and a shorter version are available at <http://www.rif.org/us/about/literacy-issues/giving-children-access-to-print-materials-improves-reading-performance.htm>

Research Questions that Guided the Literature Review (p. 4)

1. When examining all research studies conducted on the relationship between access to print material and various children's outcomes, what is the overall effect size for these relationships?
2. Do the studies designed to examine *causal* relationships between access to print material and children's outcomes show positive effects (i.e., do effects for experimental and quasi-experimental studies favor increasing children's access to print material)?
3. Do studies examining programs that facilitate children's ownership of print material in particular (as opposed to programs supporting the lending of reading materials to children) show impacts on various behavioral, educational, and psychological outcomes?
4. Finally, do certain characteristics of studies (e.g., research designs used, types of samples of children, types of programs, types of outcomes) relate to the strength of the relationships between access to print materials and children's outcomes?

Table 10. Grouping Scheme for Children's Outcomes Into Eight Categories

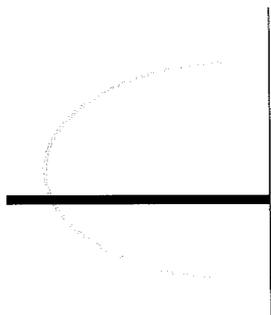
Outcome Category	Measures From Studies in Category
Attitudes	Attitude toward reading, attitude toward school/academics, attitude toward homework, attitude toward particular academic subject
Reading interest or motivation	Interest in reading, reading motivation, child's request to be read to, child's request to go to library, library visits.
Reading behavior	Reading frequency, books read, reading amount of time, parent reading to child, books/print-related play, home literacy orientation/family literacy
Basic language abilities	Reading readiness, receptive language, expressive language, following oral directions, general language
Emergent literacy skills	Oral story retelling, emergent literacy skills, phonemic awareness, concepts about print, letter identification, sign/label/picture identification, sign/label/picture reading (environmental print), word recognition, word reading, word attack, tracking print, active participation in storybook reading, asking questions during storybook reading, inferring character states, inferring author states, printing/handwriting, sentence completion/cloze procedure
Reading performance	Fluency, comprehension/retelling, vocabulary, text level, formal/informal reading test
Writing performance	Writing (general), writing story, narrative versus expository, words attempted, words correct, vocabulary (in writing), spelling, sentence structure, writing structure, content, length
General academic achievement	Grades/GPA, grades in particular subjects, credits accumulated, SAT/ACT mathematics, other tests in mathematics, grade promotion + (or retention -), graduation + (or dropout -), achievement gap closing (+)

Table 28. Answers to Research Questions Underlying Research Synthesis Project

Research Question	Answer Based on This Meta Analytic Review
1. What is magnitude of the relationship between children's access to print material and outcomes?	$d_w = +.463$ [+ .422/+ .502]. A medium effect
Attitudes	$d_w = +.333$ [+ .249/+ .418]. A medium effect
Motivation to read	$d_w = +.617$ [+ .311/+ .924]. A medium effect
Reading behavior	$d_w = +.704$ [+ .526/+ .882]. A medium effect
Basic language abilities	$d_w = +.400$ [+ .245/+ .553]. A medium effect
Emergent literacy skills	$d_w = +.330$ [+ .210/+ .450]. A medium effect
Reading performance	$d_w = +.441$ [+ .389/+ .494]. A medium effect
Writing performance	$d_w = +.393$ [+ .099/+ .687]. A medium effect
General academic achievement	$d_w = +.534$ [+ .211/+ .857]. A medium effect

Note: The following two slides on how to interpret effect sizes are taken from:

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom Instruction that Works: Research-based Strategies for Increasing Student Achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.



APPENDIX

The following table provides a quick reference to percentile gains or losses associated with specific effect sizes. To illustrate how to use this table, assume that a research study found that the use of a specific strategy produced an effect size of .20. You should first locate .20 in the column labeled "Effect Size." In this case, it can be found in the first

column. To the immediate right of this number is the percentile gain associated with the effect size. In this case, it is 8. This means that the score of the average person in the group that *used* the instructional strategy would be 8 percentile points *higher* than the score of the average person in the group that *did not use* the instructional strategy.

Conversion Table for Effect Size/Percentile Gain

Effect Size	Percentile Gain	Effect Size	Percentile Loss
0.00	0	0.00	0
0.02	1	-0.02	-1
0.05	2	-0.05	-2
0.08	3	-0.08	-3
0.10	4	-0.10	-4
0.13	5	-0.13	-5
0.15	6	-0.15	-6
0.18	7	-0.18	-7
0.20	8	-0.20	-8
0.23	9	-0.23	-9
0.25	10	-0.25	-10
0.28	11	-0.28	-11
0.31	12	-0.31	-12
0.33	13	-0.33	-13
0.36	14	-0.36	-14
0.39	15	-0.39	-15
0.41	16	-0.41	-16
0.44	17	-0.44	-17
0.47	18	-0.47	-18
0.50	19	-0.50	-19
0.52	20	-0.52	-20
0.55	21	-0.55	-21
0.58	22	-0.58	-22
0.61	23	-0.61	-23
0.64	24	-0.64	-24
0.67	25	-0.67	-25
0.71	26	-0.71	-26
0.74	27	-0.74	-27
0.77	28	-0.77	-28
0.81	29	-0.81	-29
0.84	30	-0.84	-30
0.88	31	-0.88	-31
0.92	32	-0.92	-32
0.95	33	-0.95	-33
1.00	34	-1.00	-34
1.04	35	-1.04	-35
1.08	36	-1.08	-36
1.13	37	-1.13	-37
1.18	38	-1.18	-38
1.23	39	-1.23	-39
1.28	40	-1.28	-40
1.34	41	-1.34	-41
1.41	42	-1.41	-42
1.48	43	-1.48	-43
1.56	44	-1.56	-44
1.65	45	-1.65	-45
1.75	46	-1.75	-46
1.88	47	-1.88	-47
2.05	48	-2.05	-48
2.33	49	-2.33	-49

Table 28 continued....

2. Do studies that use the most rigorous designs indicate positive effects?	Yes
Attitudes	Yes
Motivation to read	No
Reading behavior	Yes
Basic language abilities	No
Emergent literacy skills	Yes
Reading performance	Yes
Writing performance	No
General academic achievement	Too few reports for this outcome category

Table 28 continued....

3. Are there impacts among programs that facilitate children's ownership of print materials?	Yes
Attitudes	Yes
Motivation to read	Yes
Reading behavior	Yes
Basic language abilities	Yes
Emergent literacy skills	Yes
Reading performance	Yes
Writing performance	No effect
General academic achievement	Too few reports for this outcome category

Other Interesting Findings (p. 50)

The findings related to characteristics of the intervention may provide more insight into possible ways to refine book lending and distribution programs to better motivate children to read. Within the 10 studies that implemented either a lending program or a book ownership intervention, interventions that provided *less* choice of books to children, provided access to books just to those children who met certain criteria (typically those whose caregivers consent to participate in the study), provided more print materials to children with shorter time lags between distributions and encouraged caregivers to “coread” with the child, showed stronger print-access-reading motivation relationships. Stronger motivation to read was also found among children participating in clinic-based interventions (such as “Reach Out and Read”), interventions that combine distribution of print material with guidance to caregivers on how to read with one’s child, and interventions that combine distribution with another type of literacy activity.

Other Interesting Findings (p. 54)

The general finding from the meta-analysis of effects of children's access to books/print material and reading behavior indicates a positive *causal* relationship. Giving children print material to read causes them to read more frequently and for greater amounts of time. However, several of the intervention-related factors appear to contradict conventional wisdom on administration of these interventions. For instance, children appear to read more when they have *less* choice in which books they read. Number of print materials provided to children does not appear to matter in terms of their reading behavior, but the interval separating the distribution does. They appear to read *more* when the distribution intervals are longer.

Engaging caregivers appears to be an important factor in encouraging children to read. Children of caregivers who are given guidance on how to read to the child and encouraged to coread with

him/her appear to read more. Reading behavior is bolstered even more when distribution of print materials is combined with other teacher and/or caregiver-led activities.