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AIR POLICY BRIEF >> Effective Instruction for Maximizing Kindergartners' Reading Achievement

A companion piece to the AIR Research Brief, "Making the Most of Extra Time: Relationships Between Full-Day Kindergarten Instructional Environments and Reading Achievement," by Amy Rathbun

To access the full Research Brief, go to http://www.air.org/files/AIRBriefkindergarten_reading.pdf.

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Overview

As the number of schools changing from part- to full-day kindergarten programs increases, state and local education agencies need empirically-based evidence on ways that schools and teachers can best structure the additional instructional time of full-day programs to improve children's early reading skills.

Using nationally representative data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) to explore relationships between full-day kindergarten program factors and public school children's gains in reading scores from the fall to spring of the kindergarten year, there is evidence that:

- » Children in kindergarten programs that devote a larger portion of the school day to academic instruction, and to reading instruction in particular, make larger gains in reading over the school year than children who spend less time in such instruction;

- » Children tend to make optimal gains in reading when teachers use an equal balance of discrete literacy skills and comprehension skills instruction; and
- » Class size interacts significantly with some instructional practices to increase or decrease children's average reading gains in kindergarten.

Linkages Between Classroom Factors and Kindergarten Reading Gains

Looking within the framework of school effects research, which hypothesizes that improvements in children's learning can occur at multiple, nested levels of the education system, one can explore relationships between classroom instructional practices and resources and children's gains in reading achievement over the kindergarten year (see figure 1).

Children enrolled in full-day kindergarten spent about three-quarters of the instructional day on academic subjects (i.e., reading, mathematics, science, and social studies), with about half of academic time spent on reading instruction. Children in full-day kindergarten programs that devoted a greater than average proportion of the instructional day to academic subjects relative to total instructional time tended to make greater reading progress. Similarly, children made more reading progress in classrooms that devoted a greater than average proportion of academic time to reading instruction relative to the total academic instruction time.

Full-day kindergarten reading instructional practices clustered into four categories:

- » Discrete literacy skills (e.g., reading from basal (structured reading/language arts) texts, practicing conventional spelling);
- » Child-initiated activities (e.g., choosing own books to read, journal writing);
- » Comprehension skills (e.g., making predictions, identifying main idea and parts of story); and
- » Discrete letter-sound knowledge skills (e.g., matching letters to sounds, learning letter names).

Children attending full-day kindergarten participated in:

- » Discrete literacy skills instruction an average of almost two days per week;
- » Child-initiated activities slightly more than two days a week;
- » Comprehension skills instruction about three days a week; and
- » Discrete letter-sound knowledge skills more than four days a week.

Results show that children made larger gains in reading when discrete literacy skills were taught more often than average and comprehension skills were taught less often than average.

Figures 2 and 3 present the frequency of individual reading instructional activities that comprise the comprehension and discrete literacy skills scales.

Figure 1. Conceptual framework for relationships between full-day kindergarten instructional resources, instructional practices, and kindergartners' reading achievement gains

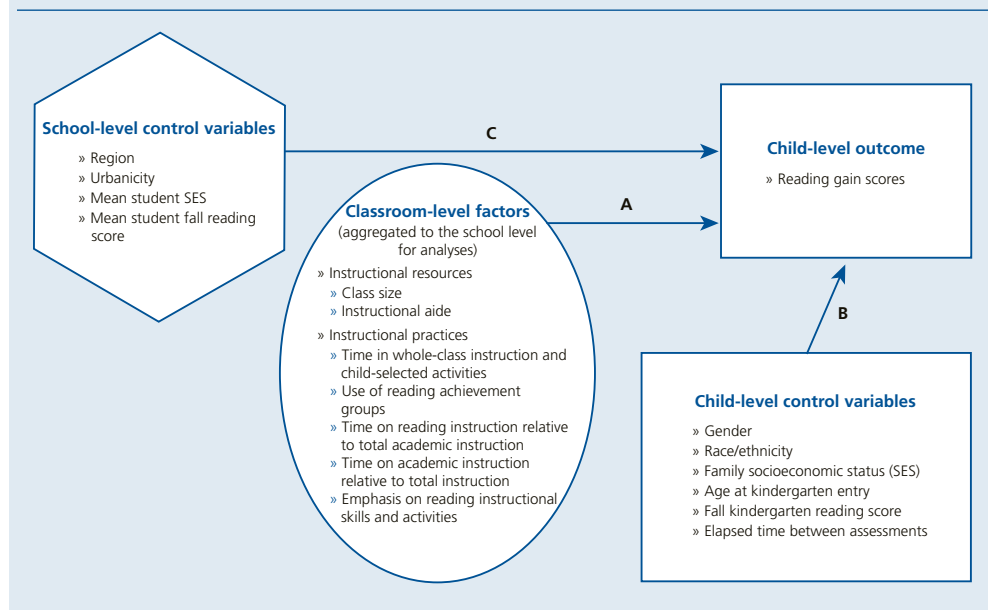
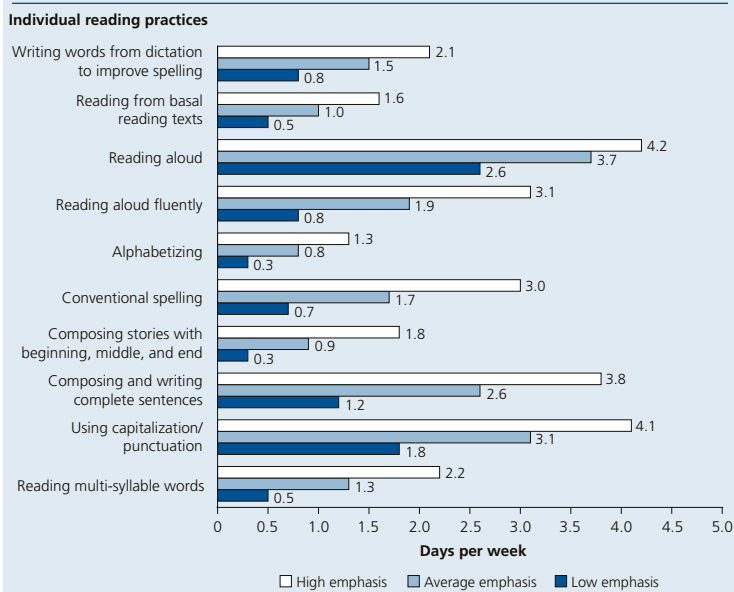
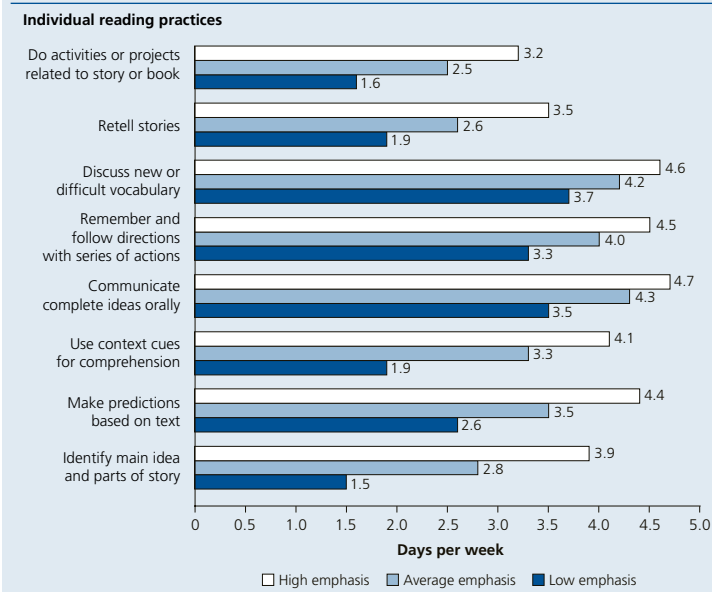


Figure 2. Frequency of individual reading practices that comprise the discrete literacy skills scale, by amount of emphasis teachers place on discrete literacy skills in full-day kindergarten programs



NOTE: This figure is based on a sample of 331 public schools that offer full-day kindergarten programs. Low emphasis is defined as less than -0.5 standard deviations below average emphasis on the discrete literacy scale; high emphasis is defined as more than 0.5 standard deviations above average emphasis.
SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Base Year Public-Use Data File.

Figure 3. Frequency of individual reading practices that comprise the comprehension skills scale, by amount of emphasis teachers place on comprehension skills in full-day kindergarten programs



NOTES: This figure is based on a sample of 331 public schools that offer full-day kindergarten programs. Low emphasis is defined as less than -0.5 standard deviations below average emphasis on the comprehension skills scale; high emphasis is defined as more than 0.5 standard deviations above average emphasis.
SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Base Year Public-Use Data File.

Further exploration suggests that children tended to make optimal reading gains when teachers used an equal balance of discrete literacy skills and comprehension skills instruction. For example, increasing the frequency of discrete skills instruction one standard deviation, from the reported average of 1.9 days per week to 2.6 days per week, and decreasing the frequency of comprehension-based skills instruction one standard deviation, from the average of 3.1 days per week to 2.5 days per week, would translate to an increase of one-third of a standard deviation in kindergarten reading gains.

The average ECLS-K full-day kindergarten class size in the fall of 1998 was 21 children, with a range of 9 to 30 children. Class size interacted significantly with some grouping strategies and instructional practices to increase or decrease kindergartners' average reading gains in schools:

- » Children in larger than average classrooms made larger reading gains when they spent more than one hour per week in reading achievement groups.
- » Children in larger than average classrooms made smaller reading gains as their proportion of time in whole-class grouping increased.
- » The benefit of frequent discrete literacy skills practice on kindergarten reading gains (as noted earlier) was reduced in schools with larger classes.

Implications for Researchers and Policymakers

To maximize opportunities for success, full-day kindergarten programs should organize their instructional resources and practices in ways that increase children's early reading achievement. The data demonstrate that:

- » Reading instruction is more effective when children experience an equal balance of discrete literacy skills and comprehension skills instructional approaches.
- » Reading achievement is enhanced in classrooms that devote greater proportions of the school day to academic instruction, with the majority of time spent on reading instruction.
- » Kindergarten class size is an important factor for teachers to consider when making pedagogical decisions.

Building on these findings from the ECLS-K's large sample of full-day kindergarten programs, future smaller-scale research can explore the processes through which classroom factors influence children's early education outcomes. Smaller studies can take advantage of observational techniques to identify what skills are taught in the classroom and how the teachers present them to the class.

The research also provides a number of recommendations for additional study, including investigating:

- » Different configurations of reading instructional practice to identify the proper balance between phonics-based and whole-language techniques;
- » The difficulty children experience with certain types of reading curriculum or instructional approaches;
- » Whether the teaching of complex skills and activities is more effective in small group or individualized settings than in whole-class settings; and
- » The use of classroom observation of instructional resources and practices and multiple assessment measures to evaluate gains in student learning in full-day kindergarten programs.

Policymakers and researchers also should explore the complex relationships between full-day kindergarten instructional environments and children's early learning by evaluating the effects of classroom factors identified in this research along with the effects of other resources (e.g., books, puzzles, audio-visual equipment) and practices like time allocation for unstructured play and individualized child exploration present in kindergarten programs.