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America's Early Childhood Literacy Gap



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AMERICA'S EARLY CHILDHOOD LITERACY GAP

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Introduction

Our nation is facing an issue of epic proportion and of critical importance. It is an issue that affects our economy, reduces the competitiveness of our workforce and challenges our highest ideals. The issue is America's early childhood literacy crisis.

All across America, children from low-income communities are entering kindergarten without the basic early literacy skills for lifelong success. Children enter the school system behind their more affluent peers and are unable to catch up. Perhaps the most disturbing fact about this issue is that it is entirely preventable. The solution is cost-effective and begins before a child even reaches kindergarten.

Early cognitive development is essential

There is an overwhelming academic consensus that the earliest years of life, from birth to age 5, is the time when a child's brain is undergoing the most growth and development.¹ Cognitive development is the product of two interacting influences – brain growth and experience – both of which exert their greatest impact during the first five years of life. The developing brain triples in the first year alone and is virtually fully formed by the time a child enters kindergarten.² This period is critical and sets the stage for all of later learning and adult functioning.

Reading to a child during this critical time, specifically during the preschool years of ages 3 - 5, builds a number of skills that are key to literacy, including phonological awareness, alphabetic knowledge, and concepts about print conventions.³

Given the course of brain development, it is not surprising that young children who are exposed to certain early language and literacy experiences usually prove to be good readers later. Just as a child develops language skills long before being able to speak, the child also develops literacy skills long before being able to read.⁴

Reading is the key to early literacy

Reading aloud to young children is so critical that the American Academy of Pediatrics recommends that doctors prescribe reading activities along with other advice given to parents at regular check-ups. Moreover, many pediatricians now believe that a child who has never held a book or listened to a story is not a fully healthy child.⁵

Research has continually shown that when adults read to children, discussing story content, asking open-ended questions about story events, explaining the meaning of words, and pointing out features of print, they promote increased language development, comprehension of story content, knowledge of story structure, and a better understanding of language— all of which lead to literacy success.⁶

The absence of early literary stimulation is the harbinger of sustained educational difficulties. Unfortunately, 37 percent of children arrive at kindergarten without the skills necessary for lifetime learning.⁷

Jumpstart is a non-profit organization that is working to narrow this early childhood literacy gap between children from low-income neighborhoods and those from more affluent communities. Our mission is to ensure that every child in America enters school prepared to succeed.

¹ Shonkoff, J.P., & Phillips, D.A. (Eds.). (2000). *From Neurons to Neighborhoods. The science of early child development*. Washington, D.C.: National Academy of Sciences.

² Eliot, L. (1999). *What's Going on in There? : How the Brain and Mind Develop in the First Five Years of Life*. Bantum Books.

³ Berk, L. E. (2009). *Child Development* (8th ed.). Pearson Education, Inc.

⁴ National Research Council. (1998). *Preventing Reading Difficulties in Young Children*. Washington, D.C.: National Academy Press.

⁵ Klass, P. (1998, November 29). Sense and Dispensability: My Patients Want More Than a Medical Diagnosis—And So Do I. *The Washington Post*.

⁶ Berk, L. E. (2009). *Child Development* (8th ed.). Pearson Education, Inc.

⁷ Landry, S. H. (2005). *Effective Early Childhood Programs: Turning Knowledge Into Action*. Houston, TX: University of Texas, Health Science Center at Houston.

Starting Behind and Staying Behind

The reality is that most children entering kindergarten lacking basic early literacy skills do not catch up to their peers in subsequent years. In fact, the National Adult Literacy Survey found that children who have not already developed some basic literacy practices when they enter school are three to four times more likely to drop out in later years.¹

Within the past decade, several extended longitudinal studies, spanning preschool or kindergarten through third or fourth grades, have been published which attest to the benefits of early literacy intervention and the struggles of children entering kindergarten ill-prepared to succeed.

Early literacy skills predict future academic ability

A 2002 study of 626 Head Start preschoolers assessed in the spring, then again in kindergarten and in first through fourth grades, found that language skills and code-related literacy skills (e.g., alphabet knowledge, phonological awareness, print concepts, name writing) were strongly related in the preschool years. The development of both depended on their earlier foundation:

- Preschool language ability accounted for about 90 percent of individual differences in children's language ability in kindergarten;
- Kindergarten language ability accounted for 96 percent of individual differences in language ability in grades 1 and 2
- Grades 1-2 language ability accounted for 88 percent of individual differences in language ability in grades 3 and 4.²

Similarly, another 2002 study of 168 middle-class children followed from kindergarten through third grade examined the impact of home literacy experiences, such as parent storybook reading, to later reading achievement. Findings indicated that home literacy experiences and emergent literacy abilities (including phonological awareness) in kindergarten contributed substantially to children's success in learning to read.³

In 2005, the National Institute of Child Health and Development (NICHD) Early Child Care Research Network followed 1,137 children from birth to third grade, a more socioeconomically diverse sample than the above two studies. Once again, preschool code-related literacy skills predicted early reading progress. Language-based skills contributed increasingly to reading achievement by third grade. In addition, broad language skills, assessed before kindergarten entry, predicted reading skill during the transition to first grade.⁴

According to Jumpstart board member and professor of psychology at Illinois State University, Dr. Laura Berk, all three of these studies report quite consistent findings: Code-related literacy skills are the best predictors of success in early reading; language development provides an essential foundation for code-related skills. As children progress through the elementary school grades and text comprehension becomes more challenging, language skills contribute vitally and directly to reading success.

Dr. Susan Neuman, fellow Jumpstart board member and former Assistant Secretary for Elementary and Secondary Education, concurs with Dr. Berk's assessment that children who come to school from dramatically unequal circumstances leave school with similarly unequal skills and abilities.

Vocabulary deficiencies that arise before children become conventional readers are rarely closed in later years. As shown by the evidence above, such deficiencies undermine reading development, indirectly through their impact on code-related literacy skills in beginning readers and directly through their impact on reading comprehension in older elementary school children.⁵

Studies conducted by the Center on the Developing Child at Harvard University show that of 50 children having trouble learning to read in kindergarten, 44 of them will still be having trouble in third grade.⁶ In fact, low achievement as early as fourth grade is a powerful predictor of high school and college graduation rates, as well as lifetime earnings.⁷

Falling behind has future societal consequences

About 10 million children have difficulties learning to read. Of those children, 10 to 15 percent eventually drop out of high school; only 2 percent complete a four-year college program. Surveys of adolescents and young adults with criminal records show that about half have reading difficulties. Similarly, about half of youths with a history of substance abuse have reading problems.⁸

Many base future economic and social predictions on the inability of these children to catch up with their peers. Because seven in ten prisoners perform at the lowest literacy skill levels, the state of California once planned how many jail cells they would build in the future by how many children are not reading on grade level by fourth grade.⁹

Indiana Senator Evan Bayh has stated that determining the number of new prisons to build is based, in part, on the number of second graders not reading at second-grade level.

Dr. Grover (Russ) Whitehurst, former Director of the Institute of Education Sciences, and an Assistant Secretary of Education with the U.S. Department of Education under the Bush administration stated that the predictability of reading for life success is so strong, that if you look at the proportion of middle-schoolers who are not at the basic level, who are really behind in reading, it is a very strong predictor of problems with the law and the need for jails down the line.

The sad truth is that the vast majority of children who start behind, stay behind, leading to an increase in our nation's dropouts rate among low-income and minority students. This cycle of disadvantage affects us all. A 2005 estimate by Cecilia Rouse, professor of economics and public affairs at Princeton University, shows that each high school dropout costs the nation approximately \$260,000 over the course of his or her lifetime. But the problem goes far beyond

financial cost; America's literacy gap robs us of our country's highest ideal that every individual has the right and the opportunity to succeed.

¹ National Assessment of Adult Literacy. (1993). *National adult literacy survey*. Washington, D.C.

² Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology*, *38*, 934–947.

³ Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, *73*, 445–460.

⁴ National Institute of Child Health and Development (NICHD) Early Child Care Research Network. (2005). Pathways to reading: The role of oral language in the transition to reading. *Developmental Psychology*, *41*, 428–442.

⁵ Biemiller, A. (2006). Vocabulary development and instruction. In D. D. Dickinson & S. B. Neuman (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 41-51). New York: Guilford.

⁶ National Scientific Council, Center on the Developing Child at Harvard University. (2007). *The Science of Early Childhood Development: Closing the Gap Between What We Know and What We Do*. Cambridge, MA.

⁷ McKinsey & Company (April 2009). *The Economic Impact of the Achievement Gap in America's schools*. Washington, D.C.

⁸ National Information Center for Children and Youth with Disabilities. (1998). *Children with reading disability*. Washington, D.C.: Robert Bock.

⁹ Cushman, K. (1998). Democracy and equity: CES's tenth common principal. *Horace*, *14*(3).

Low-Income Communities and Access to Books

Poverty is the single best predictor of a child's failure to achieve in school.¹ The achievement gap – between poor and non-poor children – begins early and persists.²

Of the 19.6 million children in the country under the age of six, 43% live in poverty.³ Nearly half of these children from low-income communities start first grade up to two years behind their peers.⁴

Children from low-income families are at greater risk for entering school unprepared

According to a national longitudinal analysis by the U.S. Department of Health and Human Services (HHS), economically disadvantaged children may know only one or two letters of the alphabet when entering kindergarten, while children in the middle class will know all 26. Only half of the children from low-income families can write their own name, while more than 75 percent of children from higher income families can do so. Researchers also estimate that before ever entering kindergarten, cognitive scores for children of low-income families are likely to average 60 percent lower than those in the highest socioeconomic groups, something that remains true through high school.⁵

Children from lower-income families are at greater risk of having smaller vocabularies than other children. One study of the actual vocabulary of first-graders found that those from high-income families had double the vocabulary of those from lower-income families.⁶

Unfortunately, children in low-income families lack essential one-on-one reading time. A recent report by the Packard and MacArthur Foundations found that the average child growing up in a middle class family has been exposed to 1,000 to 1,700 hours of one-on-one picture book reading. The average child growing up in a low-income family, in contrast, has only been exposed to 25 hours of one-on-one reading.⁷

Children from lower-income homes have limited access to books

According to Dr. Berk and Dr. Neuman, access to age appropriate books and early education programs is at the core of the issue. Preschoolers from low-income families have fewer home and preschool language and literacy opportunities than children from economically advantaged backgrounds – a major reason that they lag behind in reading achievement throughout the school years.⁸

In fact, 61 percent of low-income families have no age-appropriate books at all in their homes for their children.⁹ Early literacy expert Jeff McQuillan's belief is that the only behavior measure that correlates significantly with reading scores is the number of books in the home. An analysis of a national data set of nearly 100,000 United States school children found that access to printed materials is the "critical variable affecting reading acquisition."¹⁰

In their book *The Patterns of Book Ownership and Reading to Young Children*, authors Dina Feitelson and Zahava Goldstein found that 60 percent of the kindergartners in neighborhoods where children did poorly in school did not own a single book.

Susan Neuman, Jumpstart board member and author of the book *Handbook of Early Literacy Research*, found that in middle class neighborhoods there were about thirteen book titles for every child. By contrast, in neighborhoods of lower socioeconomic status, Neuman found that there was only one book title for every 300 children.¹¹

Given the limited access to books at home, libraries are especially important in poor communities, as they are the single source of literacy for many people. But even here, differences in the numbers of books vary strikingly with an average of four books available per child in middle-income neighborhoods compared to two books per child for the poor. In dangerous neighborhoods, libraries don't even have evening or Saturday hours that make it possible for working parents to come in with their children.¹²

Simply stated, the most successful way to improve the reading achievement of low-income children is to increase their access to print. Communities ranking high in achievement tests have several factors in common: an abundance of books in public libraries, easy access to books in the community at large and a large number of textbooks per student.¹³

¹ Brizius, J. A., & Foster, S. A. (1993). *Generation to Generation: Realizing the Promise of Family Literacy*. High/Scope Press.

² Lee, V. E., & Burkham, D. T. (2002). *Inequality at the Starting Gate: Social Background Differences in Achievement as Children Begin School*. Washington, D.C.: Economic Policy Institute.

³ Douglas-Hall, A. & Chau, H. (October, 2008). *Basic Facts about Low-income Children: Birth to Age 6*. New York: National Center for Children in Poverty, Columbia University, Mailman School of Public Health.

⁴ Brizius, J. A., & Foster S. A. (1993). *Generation to Generation: Realizing the Promise of Family Literacy*. High/Scope Press.

⁵ Lee, V. E. & Burkam, D. T. (2002). *Inequality at the starting gate: Social background differences in achievement as children begin school*. Washington, D.C.: Economic Policy Institute.

⁶ Fight Crime: Invest in Kids. (2000). *America's Child Care Crisis: A Crime Prevention Tragedy* (2nd ed.). Washington, D.C.: Newman, S., et al.

⁷ McQuillan, J. (1998). *The Literacy Crisis: False Claims, Real Solutions*. Heinemann.

⁸ Berk, L. E. (2009) *Child Development* (8th ed.). Pearson Education, Inc

⁹ Reading Literacy in the United States: Findings from the IEA Reading Literacy Study. (1996).

¹⁰ JMcQuillan, J. (1998). *The Literacy Crisis: False Claims, Real Solutions*. Heinemann.

¹¹ Neuman, S., & Dickinson, D. (Eds.). (2006) *Handbook of Early Literacy Research* (Vol. 2). The Guilford Press.

¹² Neuman, S. (2009) *Changing the Odds for Children at Risk: Seven Essential Principles of Educational Programs that Break the Cycle of Poverty*. Praeger Publishers.

¹³ Fight Crime: Invest in Kids. (2000). *America's Child Care Crisis: A Crime Prevention Tragedy* (2nd ed.). Washington, D.C.: Newman, S., et al.

Benefits of Intervening Early

For low-income children, intervening early is essential. Without the necessary pre-K literacy resources, children start down the slippery slope of non-achievement before they even have a chance to compete.

Jumpstart trains adults to work with preschool children from low-income communities for a full school year using a unique, focused curriculum created with leading early childhood education experts and Pearson, one of the world's largest textbook publishers. These trained college students and community volunteers (Corps members), dedicate on average 6-8 hours of time, each week, to read to children and do social activities that develop essential language, literacy, social and initiative skills.

A team of researchers at Illinois State University confirm effectiveness of Jumpstart

Beginning in 2008, a team of researchers from Illinois State University conducted an experimental, randomized study of 62 4-year-olds enrolled in child care or preschool programs in Illinois. In the fall of the school year, 31 children were assigned to the following groups:

- Group 1. Jumpstart literacy intervention delivered by college student Corps Members
- Group 2. Same-age, same-gender, same-classroom comparison children who did not receive the Jumpstart intervention.

A school psychology graduate student, blind to the purposes of the study and to children's group assignment, administered the following measures in both fall and spring, as pre- and posttests:

Bracken School Readiness Assessment
Test of Early Reading Ability (TERA-3)
Get It Got It Go Reading Assessment

At pre-test, the two groups showed no significant differences on any of the above measures.

At the end of the school year, Jumpstart children (Group 1) exceeded comparison children (Group 2) in gains in school readiness and literacy skills (Bracken, Get It Got It Go, Test of Early Reading Ability).

Effect sizes (which measure the strength, or size, of these group differences) were medium to large, indicating impressive growth in program-targeted outcomes as a result of Jumpstart. On average, Jumpstart children showed fall-to-spring gains that were from 2 to 3 times larger than the gain of same-classroom comparison children.

Among the literacy measures, Jumpstart children's fall-to-spring growth was especially great in vocabulary and phonological awareness. The latter measure, in particular, is a well-documented, strong predictor of reading progress in the primary grades.

After intervention, Jumpstart children's school readiness (Bracken) and reading scores (TERA-3) were close to or slightly above average for same-age children in general (e.g., Bracken School Readiness = 102.1; Test of Early Reading Ability = 97.4).

In sum, this rigorously designed, small-scale study suggests that the combination of Jumpstart's focused, intensive intervention and well-articulated, research-based early literacy curriculum is highly successful in achieving its targeted, end-of-year goals of improving the literacy skills and overall school readiness of low-income children prior to school entry.



