



# Literacy Learning in the Wild

A fact sheet:

*What the research indicates are effective (and ineffective) strategies  
for enhancing early literacy.*

# Forward

## How to use this fact sheet

This pamphlet serves as a guide to decision makers and persons interested in early literacy. It provides a broad overview and identifies references so readers interested in greater detail can follow up. It is a concise way to put relevant information in front of decision makers.

## Format

**The information within is entirely quotes or abbreviated quotations of the references cited without added editorial comment.** This serves the purpose of identifying the direct reference to the authoritative and primary sources. The headings were designed in a common format utilized for policy making: definition of the problem; the current states of affairs; what the research says; how this translates into actionable principles; and policy recommendations. **Bolded passages are added emphasis.**

## Information sources

This pamphlet used as a primary resource a review article written by language and literacy researchers Justin Harris, Roberta Golinkoff and Kathy Hirsh-Pasek<sup>1</sup>. Additional sources were utilized and are identified through endnotes. If an endnote is not listed, assume the quoted text is from Harris et al. (2010).

## Role of the Evolution Institute (EI)

The Evolution Institute was founded by scientists who saw a need to include scientific knowledge and processes as a means to effectively address today's most pressing social problems. The EI began exploring education in 2008 and has held multiple conferences on education, ranging in scope from early childhood through adulthood. Conferences were held at the University of Miami (2008), the University of Arizona (2010), and, most recently with sponsorship of the American Education Research Association, in the Washington DC area (2013). Some of the materials presented at those conferences led to a special section in the *Journal of Developmental Psychology* (2012, 48:3) and a book is planned for 2015, to be edited by Daniel Berch and David Geary. In addition, the EI developed and implemented a school-based pilot

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<sup>1</sup>Harris, J., Golinkoff, R.M., Hirsh-Pasek, K., (2010). Lessons from the Crib for the Classroom: How Children Really Learn Vocabulary In S. B. Neuman & D. K. Dickinson (Eds.) *Handbook of Early Literacy Research*, NY: Guilford Press.

program in (Binghamton, NY) for failing high school students with Nobel Laureate Elinor Ostrom and leading practitioners in prevention science. Students who had failed at least three core courses were randomly assigned to the pilot program or a conventional classroom. By the end of the year, students in the pilot program had achieved parity with their district-wide grade cohort on the state assessment exams, while no change was reported for the students in the conventional class.

The EI is headquartered in Florida, with projects and partners around the world. The EI is working with a community partner in East Tampa who is developing an early child care center.

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## Special thanks

We extend our thanks and appreciation to the scientists around the world who have participated in our education conferences and initiatives.

In particular, we are most grateful to Kathy Hirsh-Pasek and Roberta Golinkoff for their input on this pamphlet. They are representative of the passionate, knowledgeable, and generous scientists that drive the work at the EI.

# A Very Brief Summary

Children are born to learn and will do so much more effectively if developmentally appropriate and research-based practices are utilized.

1. Learning language is a long-term process and requires exposure. One of the most consistent differences in literacy skills among children is exposure to words and language from a diversity of sources.
2. The commonly used classroom memorization methods and popular media efforts to teach learning are generally ineffective and may even delay learning. Back-to-basics strategies have little evidence of effectiveness.
3. Children want to learn meaning, not just words. Explain things.
4. Peer play is a very important avenue for literacy learning. It provides an opportunity to create different contexts for children to practice their verbal skills.
5. When adults are involved, literacy learning is most effective when the engagement is interactive, not didactic. However, reading should not be turned into an extended lesson and peer play should not be substituted for adult-child interactions.
6. Children will lose attention in the classroom after a while and will be more attentive after recess.
7. Play and recess are strongly recommended and the research supports it as critical to effective strategies to enhance children's cognitive, social, and emotional development, including literacy skills.
8. Guided play in centers is one way to incorporate developmental science into practice.

For a community to improve childhood literacy, strategies should be developed in at least two areas: developmental and community engagement.

## **Developmental**

1. Provide parents the tools and knowledge to engage their children in learning literacy.
2. Provide professional development to those who work with children.

## **Community Engagement**

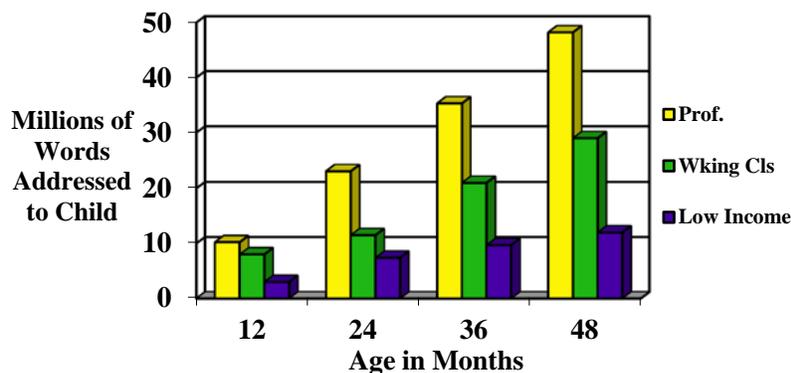
1. Developing the infrastructure needed to get the message out as well as provide easy access to information. The best developmental strategies are ineffective if not utilized.

# Literacy Research Findings

**(M)emorization of ... facts is not enough. To claim that children *really* know a word, we must show that they have not only acquired a minimal grasp of the word, but can *transfer* the word to new contexts, and *retain* the word and its meaning over time.<sup>i</sup>**

## I. Defining the issue

Hart and Risley (1995) report that by age 3, children from disadvantaged homes hear roughly 25% of the words that pass the ears of their more advantaged peers. And this lack of input has consequences both for processing language quickly...and for trajectories of language and literacy acquisition (Dickinson, Golinkoff, & Hirsh-Pasek, under review; Dickinson & Freiberg, in press; NICHD ECCRN, 2005) through elementary school<sup>ii</sup>.



As Hoff (2009) indicated, “A difference in vocabulary size is the most reliably observed SES-related difference in children’s language skills (see Hoff, 2006a, 2006b for reviews).” Therefore, to the extent that we understand the processes that contribute to vocabulary learning, the more effective will be our interventions for children who lag behind. Ironically, while the research shows that word learning takes place best in meaningful and playful contexts where child engagement is high, the educational system appears to be moving in the opposite direction, increasing the amount of definition memorization required of children.<sup>iii</sup>

## II. State of affairs: An overview of current practices

It appears that traditional means of teaching early literacy are relatively ineffective at best and harmful at worst.

- a. **The (vast majority of current classroom) methods used to increase the vocabulary of these young children, however, are antithetical to 40 years of research on early word learning.<sup>iv</sup>**
- b. Highly academic environments have little benefit for children's academic skills, may dampen creative expression, and may create some anxiety.<sup>v</sup>

- c. There was no evidence that poor children did better in back-to-basics programs (see also, Peisner-Feinberg, 1999).<sup>vi</sup>
- d. The federal effort to bolster emergent literacy skills has yielded some improvement in preschoolers' knowledge of letters and understanding of print concepts, **but has had little effect on other skills deemed critical precursors to reading.**<sup>vii</sup>
- e. [A meta-analysis of literacy instruction studies covering 8,468 participants]: **(any) effects were no longer apparent 2 to 12 months later. No effects were found for phonological awareness or spelling outcomes at either immediate or follow-up assessment, nor did initial effects on alphabet outcomes persist.**<sup>viii</sup>
- f. No studies to date have demonstrated benefits associated with early infant TV viewing. The preponderance of existing evidence suggests the potential for harm. Parents should exercise due caution in exposing infants to excessive media.<sup>ix</sup>
- g. ...the research team found that with every hour per day spent watching baby DVDs and videos, infants learned six to eight fewer new vocabulary words than babies who never watched the videos. These products had the strongest detrimental effect on babies 8 to 16 months old, the age at which language skills are starting to form. "The more videos they watched, the fewer words they knew," says Christakis. "These babies scored about 10% lower on language skills than infants who had not watched these videos."<sup>x</sup>

### III. What the research says: how language is learned 'in the wild'

Learning the **meaning** of words is a lengthy process.

- a. Infants and toddlers learn vocabulary not from explicit instruction, but rather in the course of their everyday interactions with parents and caregivers.<sup>xi</sup>
- b. Enormous differences in vocabulary have their roots partly in the non-verbal *gestural* interactions that take place between babies and their mothers as early as 14 months of age. More maternal gestures predicts to more gestures by children which in turn **is a predictor of children's vocabulary at school entry at 54 months of age** (Rowe & Goldin-Meadow, 2009; Rowe, Ozcaliskan, & Goldin-Meadow, 2008).<sup>xii</sup>
- c. Children want information about what the object is used for and where it is found (e.g., "It's a toaster – a kind of machine that cooks our bread"). As Kemler-Nelson et al. write, "...when young children ask, 'What is it?' ... they are more concerned with knowing what kind of thing it is—that is, what its intended function is—than what it is called" (p. 388)...from the child's perspective, vocabulary learning is not about learning words in isolation but about acquiring the *concepts* that the words stand for.<sup>xiii</sup>
- d. Frequency matters: Children learn the words that they hear the most.<sup>xiv</sup>

- e. A significant body of research...attests to the fact that parents who talk about what children are looking at have more advanced vocabularies (Akhtar, Dunham & Dunham, 1991; Masur, 1982; Tomasello & Farrar, 1986). A corollary finding is that parents who try to redirect children's attention and label objects not of interest have children who learn fewer words (e.g., Dunham, Dunham & Curwin, 1993; Hollich et al., 2000; Golinkoff, 1981).<sup>xv</sup>
- f. Dickinson (2001a) noted that the amount of time 3-year-olds spent talking with peers while pretending was positively associated with the size of their vocabularies two years later, when they had begun kindergarten.
- g. Children who, at recess, chose to interact with peers instead of with adults showed better social and cognitive development.<sup>xvi</sup>
- h. Nicolopoulou, McDowell and Brockmeyer (2006) also find that children who engage in sociodramatic play build the language skills required for literacy. As in other areas of pedagogy, piquing a child's interest in language through activities that are playful increases attention, motivation and real learning (Hirsh-Pasek & Golinkoff, 2003; Singer, Golinkoff, & Hirsh-Pasek, 2006; Hirsh-Pasek, Golinkoff, Berk & Singer, 2009).<sup>xvii</sup>
- i. An analysis of early education settings across 10 countries found that small group free play at age four was positively associated with multiple measures of oral language ability at age seven (Montie, Xiang, & Schweinhart, 2006).<sup>xviii</sup>
- j. Children's language skills are strongly related to proximal measures of quality in parent-child interaction such as sensitivity, cooperation, acceptance and responsiveness (Landry, Smith, Swank, Assel, & Vellet, 2001; Wakschlag & Hans, 1999; Tamis-LeMonda & Bornstein, 2002; Hirsh-Pasek & Burchinal, 2005)...This link has been observed in childcare homes and relative care as well as in center care (Kontos, Howes, Shinn, & Galinsky, 1997; NICHD ECCRN, 1998; Clarke Stewart, Lowe Vandell, Burchinal, O'Brien, & McCartney, 2002).<sup>xix</sup>
- k. Vocabulary learning and grammatical development are reciprocal processes. vocabulary and grammar are not divorced. They feed one another. Dixon and Marchman (2007), for example, argue from a large sample of children ages 16-30 months (N=1461) that words and grammar are "developing in synchrony across the first few years of life" (p. 209).<sup>xx</sup>

#### IV. Actionable principles: what we need to incorporate in learning strategies

- a. **Children learn the words that they hear most.**<sup>xxi</sup>
- b. **Children learn words best in meaningful contexts.** New research by Han, Moore, and Buell (in press) finds that children who are given an opportunity to use vocabulary in a playful context learn it better than those who learn only under explicit instruction...**it is crucial to understand the guided play contexts that**

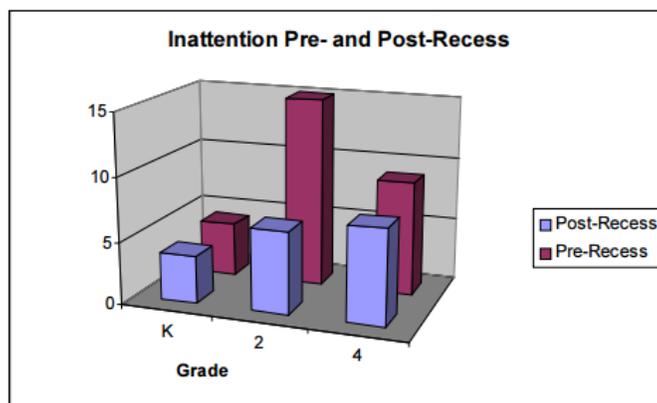
**support parents and teachers in the production of new words for children** (Christie & Roskos, 2006; Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, in press).<sup>xxii</sup>

- c. **...guided play approaches promote superior learning, retention and academic achievement compared to direct instruction or mixed method practices** (Burts et al., 1990; Burts et al., 1992; Hirsh-Pasek et al., 1991; Lillard & Else-Quest, 2006; Love, Ryer, & Faddeis, 1992; Marcon, 1993, 1999; Schweinhart & Weikart, 1988; Schweinhart, Weikart, & Larner, 1986; Roskos, Tabors & Lenhart, 2004, 2009). In guided play contexts, educators structure an environment around a general curricular goal by encouraging children's natural curiosity, exploration, and play with learning-oriented objects/materials (Fein & Rivkin, 1986; Hirsh-Pasek et al., 2009; Marcon, 2002; Schweinhart, 2004).<sup>xxiii</sup>
- d. Be clear: **Children need clear information about word meaning.** Fast mapping is not the same as more in-depth understanding and ability to use vocabulary correctly.<sup>xxiv</sup>
- e. **Reading builds vocabulary most when it is "dialogic"** (e.g., Zevenbergen, Whitehurst, & Zevenbergen, 2003). Dialogic reading occurs when adults prompt children with questions, evaluate and expand upon children's verbalizations, and reward children's efforts to tell the story and label objects in the book.<sup>xxv</sup>
- f. ...studies with diverse populations have found that engaging with an adult in dialogic reading causes children to use more words, speak in longer sentences, score higher on vocabulary tests, and demonstrate overall improvement in expressive language skills (Doyle & Bramwell, 2006; Hargrave & Senechal, 2000; Heubner, 2000a, 2000b; Heubner & Meltzoff, 2005).<sup>xxvi</sup>

## V. Effective strategies include...

- a. **...telling children the definitions of words consistently increases word learning substantially** (Biemiller, 2006; Biemiller & Boote, 2006; Brabham & Lynch Brown, 2002; Elley, 1989; Penno, Wilkinson, & Moore, 2002). Children with weaker language skills seem to be especially likely to benefit from such explicit information (Penno et al., 2002),... *If book reading devolves into an extended vocabulary lesson, the highly explicit teaching that results in the greatest gains in short-term interventions with older children could paradoxically have a negative long-term impact on children's enjoyment of books and teacher's use of books to deepen comprehension....* providing definitions to 3-year-olds about what one can *do* with an object or action promotes better vocabulary learning than providing static, non-causal definitions.<sup>xxvii</sup>
- b. **Diverse strategies that combine play and more structured efforts are effective accelerators of children's readiness for school and long-term development.** Apparently, just as children need intentionality in their exposure to all dimensions of development, so too may they need exposure to play-based and child-initiated as well as teacher-directed pedagogical strategies. Clearly, no single strategy can be expected to work for all children, all the time.<sup>xxviii</sup>

- c. Children's interactions with peers during playful interaction, relative to interactions with adults, are cognitively and socially more demanding. A number of studies have demonstrated that, when given free choice in a play environment, **children who choose to interact with peers, relative to adults, are more sophisticated on a number of social cognitive dimensions** (e.g., Harper & Huie, 1985; Pellegrini, 1984; Wright, 1980). Children's recess behavior as kindergarteners was a significant predictor of their 1<sup>st</sup> grade academic achievement, (Pelligrini, 1992)<sup>xxix</sup>
- d. **Note that at each grade level the children were more inattentive before than after recess.**<sup>xxx</sup>



## VI. Policy Recommendations

Three steps that can strengthen play's status in this era of early childhood standards: a shift toward 'blended' curricula that integrate direct instruction with educational play activities, improved teacher education, and increased play advocacy.<sup>xxxi</sup>

a. **Blended early literacy programs** – We need to move away from the old 'either/or' mentality that separates play from academic instruction. Kagan and Lowenstein (2004) conclude:

The literature is clear:

Design features of blended programs include large-group shared reading, small-group instruction, and content-rich language experiences to model, demonstrate, clarify, and apply core literacy skills. Theme-related dramatic play centers, linked conceptually to language and literacy content, allow more reading and writing, listening and talking that help establish new concepts and skills in action. Time, play props, materials and equipment are organized to help children grasp and practice early literacy skills on a developmental basis and are highly supportive of learning-through-doing. Shared reading, small-group instruction, and content-rich

language experiences to model, demonstrate, clarify, and apply core literacy skills. Theme-related dramatic play centers, linked conceptually to language and literacy content, allow more reading and writing, listening and talking that help establish new concepts and skills in action. Time, play props, materials and equipment are organized to help children grasp and practice early literacy skills on a developmental basis and are highly supportive of learning-through-doing.

- b. These findings indicate a need for **early childhood teacher education programs and professional development efforts** to focus on increasing early childhood teachers' knowledge of the connections between play, early literacy learning, and pre-K academic standards. In addition, teachers need to learn how to plan and implement play experiences that will help children learn core academic content. Play needs to be used in a thoughtful, intentional teaching strategy
- c. **Increased Play Advocacy** –early childhood educators and play researchers need to be more vigorous advocates for educational play (Hewit, 2001). This advocacy needs to occur at home, local school and national level.

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- <sup>i</sup> Harris, J., Golinkoff, R.M., Hirsh-Pasek, K., (2010). Lessons from the Crib for the Classroom: How Children Really Learn Vocabulary, in S. B. Neuman & D. K. Dickinson (Eds.), **Handbook of Early Literacy Research**, NY: Guilford Press.
- <sup>ii</sup> Harris et al. 2010
- <sup>iii</sup> Harris et al. 2010
- <sup>iv</sup> Harris et al. 2010
- <sup>v</sup> Hirsh-Pasek, K., (1991). Pressure or challenge in preschool? How academic environments affect children. **New Directions for Child and Adolescent Development** 53, 39-46.
- <sup>vi</sup> Golinkoff, R. M., Hirsh, Pasek, K., Singer, D., (2006). **Play=Learning: A challenge for parents and educators**. In D. G. Singer, R.M. Golinkoff, & K Hirsh-Pasek, (Eds.) *Play=Learning*, Oxford University Press, New York.
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- <sup>ix</sup> Christakis, DA, (2009). The effects of infant media usage: what do we know and what should we learn? **Acta Paediatr.**98 (1): 8-16. doi: 10.1111/j.1651-2227.2008.01027.x. Epub 2008
- <sup>x</sup> Park, A. (Aug 6, 2007). Baby Einstein's: Not so smart after all. **Time** Aug 6, 2007. Retrieved 9/26/2014 <http://content.time.com/time/health/article/0,8599,1650352,00.html>
- <sup>xi</sup> Harris, et al. 2010
- <sup>xii</sup> Harris, et al. 2010
- <sup>xiii</sup> Harris, et al. 2010
- <sup>xiv</sup> Harris, et al. 2010
- <sup>xv</sup> Harris, et al. 2010
- <sup>xvi</sup> Pellegrini, A., Holmes, R., (2006) The Role of Recess in Primary School, in D. G. Singer, R.M. Golinkoff, & K Hirsh-Pasek, (Eds.,) **Play=Learning**, Oxford University Press, New York.
- <sup>xvii</sup> Harris, et al. 2010
- <sup>xviii</sup> Harris, et al. 2010
- <sup>xix</sup> Harris, et al. 2010
- <sup>xx</sup> Harris, et al. 2010
- <sup>xxi</sup> Hirsh-Pasek, K. (No date). Language for Reading: Lessons from the Crib for the Classroom Table Discussion Guide to Generate Public Policy Ideas, Birth to Five Policy Alliance.
- <sup>xxii</sup> Harris, et al. 2010
- <sup>xxiii</sup> Harris, et al. 2010
- <sup>xxiv</sup> Harris, et al. 2010
- <sup>xxv</sup> Harris, et al. 2010
- <sup>xxvi</sup> Harris, et al. 2010
- <sup>xxvii</sup> Harris, et al. 2010
- <sup>xxviii</sup> Christie, J., Roskos, K., (2006). Standards, Science, and the Role of Play in Early Literacy Education, in D. G. Singer, R.M. Golinkoff, & K Hirsh-Pasek, (Eds.,) **Play=Learning**, Oxford University Press, New York.
- <sup>xxix</sup> Pelligrini & Holmes, 2006
- <sup>xxx</sup> Pelligrini & Holmes, 2006.
- <sup>xxxi</sup> The recommendations are taken from Christie & Roskos, 2006.



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