Evidence-Based Strategies for Improving Children's Vocabulary Knowledge

by Dr. Laura Justice

Professor in the School of Teaching and Learning, The Ohio State University

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Improving children's vocabulary knowledge is an important goal of early education. Vocabulary knowledge is foundational to numerous academic achievements, including reading for meaning and reading across the content areas. Importantly, there are several well-researched strategies that can be used to improve children's vocabulary knowledge within the early education classroom. The white paper is organized to provide an overview of vocabulary development, followed by a discussion of risk factors in that development. The paper concludes by discussing two specific strategies that can be used to enhance children's vocabulary development within the early education settings.

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the individual meanings of words (Perfetti, 2007). Vocabulary knowledge should thus be conceived as an oral-language skill that is critically important to reading achievement (Perfetti, 2007). Researchers who design and test vocabulary instruction do so not only to improve children's breadth and depth of vocabulary knowledge in its own right, but also as a potential mechanism for improving reading comprehension across the content areas (Beck, Perfetti & McKeown, 1982; Williams, Hall & Lauer, 2004; Williams, Stafford, Lauer, Hall & Pollini, 2009).

Risk Factors and Vocabulary Development

ingrained capacity to acquire new words makes use of the linguistically enriched environment to do so with little overt effort. One study, for instance, showed that young children are as adept at acquiring novel words that they overhear in a conversation between two adults as they are when those words are spoken directly to them in a conversation (Akhtar, 2005). Put simply, it is important that young children spend time in linguistically rich environments, such as homes and classrooms, but these contexts do not necessarily need to feature explicit vocabulary instruction for them to be profitable for children's vocabulary growth.

A common approach to assessing the linguistic enrichment of an environment or instructional context is to calculate the number of different words (NDWs) that occur, referred to as a measure of *lexical diversity*. To illustrate, here are two snippets of an infant/toddler teacher talking to a child in her care; both snippets are captured when the child is being bundled up to go outside on a walk.

Snippet 1	Snippet 2
Let's put your jacket and shoes on so we can head outside. It's cold outside, so we need to really bundle up. *OK, I've got your foot in my hand, and I'm pulling on your shoe. Your sock is so pretty! I bet it keeps you warm. OK, got both shoes on and now it's jacket time. Let's put this on really tight so we can stay warm.* **q §ªy x§-¦¬ 46** **h-¥wzª §{ y {{zªz¦¬ ¯§ªy« 22**	*Let's get this jacket on. Get it on. OK, we got your jacket on. It's on good. OK, let's get your shoes on. Put your shoes on. We got your shoes on. OK, let's go.* **q §ªy x§-¦¬ 13** **h-¥wzª §{ y {{zªz¦¬ ¯§ªy« 3**

Assuming that each of these snippets represents about one minute of adult-child interaction, the number of different words (44 and 15, respectively, for Snippets 1 and 2) shows that the nature of the linguistic environment differs significantly in the two scenarios. The child in Snippet 1 was exposed to three times the number of different words as the child in Snippet 2, and considerable evidence suggests that such variances are important to children's development: the number of different words that children hear in their language-learning environments is associated with the number of words they use and understand (Hoff, 2003). Although the two snippets presented here show only modest differences in children's exposure to different words, it is important to consider these differences as they unfold across days, weeks, and months. If we extrapolate from these 1-minute interactions to eight hours per day x five days per week x 52 weeks, assuming they

represent an infant's time in a day-care center, the difference in vocabulary exposure for Snippet 1 versus Snippet 2 is on the magnitude of nearly 4,000,000 words.

One risk factor that is cited often for its harmful effects on children's vocabulary development is poverty. In the United States today, almost one-half of children (44%) live in low-income (near-poor) households, and more than one in five (22%) live in poverty (Jiang, Ekono & Skinner, 2015). The impact of poverty on children's language development must be understood within the broader context of the impact of poverty on a household. As Jiang and colleagues aptly state, poverty "does not happen by chance." (p. 1) In most low-income homes and poor, there is a single head of household, typically a mother, and this head of household is likely to have only a

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1. Read-alouds are repeated. n~z ªz¨ªz«z¦¬u¬ §¦ §{ u ¦§®z£ ¯§ªy ¯ ¬~ ¦ §¦z̀« £z° x§¦℻«-x~ u«

actively in read-aloud sessions (Whitehurst et al., 1988). In this study, researchers examined the effects of dialogic reading on young children's vocabulary skills. In the dialogic reading sessions, parents employed a variety of strategies to involve their children as active participants in the reading session (e.g., open-ended questions, prompts). The researchers speculated that active involvement and engagement in read-alouds would provide an important mechanism by which to stimulate children's vocabulary skills. Indeed, children whose parents used a dialogic reading style for four weeks significantly improved their vocabulary skills compared to a control group.

The term *d*

There have been a number of studies in recent years designed to provide children with the opportunity to learn more about these words in read-aloud contexts. When adults read a storybook with children and arrive at one of these all-purpose academic words, they are encouraged to pause at the end of the page on which the word occurs and have an explicit conversation about it. For instance, work by Coyne and his colleagues involves teachers following a scripted approach to discuss the meaning of all-purpose academic words when they occur in a text. First, the teacher identifies a small set of words for children to listen for as they are read to; children are asked to raise their hand when they hear one of the words. Second, when children identify one of the target words, the teacher asks the children to say the word aloud. Third, the teacher re-reads the sentence aloud, emphasizing the target word. Fourth, the teacher provides a child-friendly definition of the word (e.g., "To *examine* something means to study it very closely."). Further discussion of the word ensues until the teacher and children returned to the text of the book and continued to read (Coyne et al., 2010). Studies consistently show that these elaborate discussions of words, embedded within read-aloud discussions, deepen children's knowledge of the target words (Coyne, McCoach & Kapp, 2007; Coyne et al., 2010). Consequently, when teachers read aloud books to children in their classrooms, they are encouraged to embed explicit discussions of all-purpose academic words in the interactive reading experience.

Conversations

Vocabulary development occurs not only in the context of read-alouds, but also in the context of everyday conversations that children have with one another as well as with adults. In fact, the sheer velocity and size of children's early vocabulary trajectories indicate that they are acquiring many words from their conversations across the day (Zimmerman et al., 2009). Studies that have carefully documented the number of conversations in which children are engaged within the home environment show that these are positive, unique predictors of vocabulary growth over time (see Zimmerman et al., 2009).

What is a conversation? A conversation involves the back-and-forth exchange of ideas between two or more people. By definition, a conversation involves two people (at a minimum) each taking one turn on a given topic. For instance:

> **Mother:** How was school today? Did you learn anything interesting?
>
> **Child:** Nope.

Technically, this is a conversation as there are two participants and each takes a turn. Obviously, this is a very short conversation. Conversations can be much longer, involving many turns across the conversational participants.

For young children, conversations with adults provide perhaps the most crucial mechanism for advancing their vocabulary knowledge. Within a conversation, children have the opportunity to hear a novel (new, unknown) word, potentially several times, and within the conversation acquire more detailed information about that word so as to deepen its representation. As an example:

nzux~z^{a} This is a blueprint. *(holds up the blueprint)* A blueprint lays out the look of a building. This is actually the blueprint of our school.

\~£y That our school? *(points to the blueprint)*

> **nzux~z^{a}** Yes, Juan, this blueprint shows what our school looks like on paper. Here is our room. And here is the door into our room, and the hallway right outside.

This is a conversation a preschool teacher is having with her children as they begin a project focused on the architecture of their school. This conversation is, for most children, the first exposure to the novel word *blueprint*. In the context of this conversation, they have many opportunities to develop a relatively deep representation of this term that includes information about the meaning of the word (i.e., a blueprint is something on paper, and it involves rooms and doors and hallways ...), how it sounds (given that the teacher repeats it several times), as well as its syntactic form (given that the teacher uses it in the noun slot of several sentences, with the article helping to convey its nominal form: “This is a blueprint.”).

When they hear a novel word within a conversation, children are incredibly adept at using the information provided within the sentence to develop a representation of that word. For instance, consider a toddler being pushed by her father in a stroller who participates in this brief conversation:

> **]uy** Look, that’s a bird. *(points up in sky to bird)*
>
> **\~£y** Bird. *(points to bird; both dad and child are looking at bird as it flies away)*
>
> **]uy**

whereas the other half were shorter conversations (lasting only two or three turns). This study showed that teachers who used two strategies—conversational elicitation and conversational extensions—tended to engage in longer conversations with their children.

Conversational elicitations are strategies that teachers use to engage or entice children into a conversation. The most commonly studied elicitation is using an open-ended question, in which teachers pose a question to which an adequate response would be at least two or more words. Examples of open-ended questions include: *What did you do last night?, What did you think about the book we just read?,* and *Why did you choose this one?* Non open-ended questions, also called close-ended questions, include: *How old are you?, Which one do you want?,* and *What's this called?* It is important to point out that not all *wh-* questions (who, what, where, when, why) are open-ended questions, as the non-examples show. An open-ended question is best defined as a question that is designed to solicit a long response. In this regard, open-ended questions tend to elicit conversations from children.

Conversational extensions are strategies that teachers use to keep children in conversations once they have begun. According to Cabell et al. (2015), extensions follow a child's utterance and build upon what the child is saying or doing to provide additional information. These extensions work in tandem with elicitations to build multi-turn conversations in preschool settings, as in the following:

Teacher: What do you think will happen when I drop this in? (elicitation)

Child: It'll go to the bottom.

Teacher: Because it sinks. Sinks to the bottom. (extension)

Child: Yeah. Like that thing did.

Teacher: You mean like the anchors did? You're right, those did sink.

(extension) **Child:** That anchor went right down!

Teacher: Yes it did, because it was so heavy. (extension)

This conversation continues for some time, largely as a result of the teacher's ongoing use of extensions following the initial elicitation for a conversation. Note that the extensions are not questions; in general, conversational extensions are statements that serve to expand upon the child's contribution. In early education classrooms in which teachers are observed to use a large volume of conversational elicitations and extensions, teacher-child conversations tend to be much longer and to occur more often than in classrooms in which teachers seldom use elicitations and extensions (Cabell et al., 2015). Importantly, children's participation in multi-turn conversations in the preschool classroom is positively associated with their vocabulary growth over time. Consequently, early childhood educators are encouraged to establish classroom routines that support conversational exchanges and to use strategies that keep the conversation going beyond only one or two turns.

Conclusions

To summarize, children's vocabulary acquisition is one of the most intriguing and commonly studied aspects of early learning and development. In part, this is due to the sheer velocity of growth observed from the toddler years into the primary grades, with children acquiring up to ten new words per day, on average, during this time. However, there is considerable variability among children in both the velocity of their vocabulary development and the size of their vocabularies; in part, this variability reflects differences among children in the quality of the environment in which they are developing their language skills. One goal of early-education programming is to try to mitigate this vocabulary gap, so as to increase the vocabulary skills of children whose home environment may not sufficiently support their vocabulary-development potential.

This white paper identifies two strategies that early educators can use to enhance vocabulary development of children in their classrooms: interactive read-alouds and quality conversations featuring elicitations and extensions. The available evidence suggests that such strategies should lead to significant and meaningful improvements in children's vocabulary knowledge (Marulis & Neuman, 2010).

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