Preschool Vocabulary Learning and Instruction

by Theresa A. Roberts

Children's preschool years are important for establishing a strong foundation for reading success. Three- and four-year-old children's attention, math, fine motor, literacy, and language competencies are associated with reading and language performance throughout schooling (Duncan et al., 2007; Grissmer, Grimm, Aiyer, Murrah, & Steele, 2010) and life success is influenced by being able to read proficiently (National Center for Education Statistics, 2006). Vocabulary is a component of language competence that is particularly significant for reading and school achievement. It is also important for establishing and maintaining relationships and contributing to self-regulation (Baumeister & Vohs, 2004). The focus of this chapter is the vocabulary acquisition of children who are learning English as a second language (dual language learners or DLLs) and children from low socioeconomic status (SES) families.

Current State of the Evidence on How to Build Preschool Children's Vocabulary

Interest in increasing young children's English vocabulary is intense. Policy, funding priorities, research agendas, and educational programs recognize the significance of early vocabulary development. Vocabulary research with DLLs and children from low SES families is burgeoning. This research indicates that it is possible to improve the vocabulary of these children through intervention with the strongest evidence for the value of storybook reading (e.g., Collins, 2010; Roberts & Neal, 2004). But at the same time, extensive evidence also suggests that making these improvements is challenging. Studies have shown that 1) well-designed curricula accompanied by professional development have not increased children's overall vocabulary (Preschool Curriculum Evaluation Research (PCER) Consortium, 2008); 2) interventions are fairly successful in ensuring children learn vocabulary targeted in the intervention but less successful in improving overall vocabulary (Marulis & Neuman, 2010); and 3) improvements in teacher's vocabulary-supporting practices can be documented, but this improvement does not typically translate into children's vocabulary growth (Cabell, Justice, McGinty, DeCoster, & Forston, 2015). Knowledge is increasing about the qualities of teacher talk to children that is associated with how much children talk and their vocabulary acquisition. Taken together, the findings from current research identify practices to help children learn vocabulary in preschool settings, but more knowledge and more effective instruction is needed.

Vocabulary size differences between DLL children and children from low income families and their more economically advantaged counterparts indicates that vocabulary learning for these two groups of children must be accelerated if they are to achieve the levels of English vocabulary necessary to meet school academic expectations. Very focused, intensive, and sustained efforts, including professional development and vocabulary supporting instruction, used throughout the preschool day are therefore needed. Features of effective classroom instruction and learning experiences are detailed later in this article. Home language practices, an underdeveloped potential resource (Roberts, 2008; Roberts, 2009), are also considered. Teacher knowledge of how children learn words and how to support and promote word learning are important foundations for effective and intensive vocabulary learning. The next two sections explain how children learn words and present general practices associated with vocabulary growth.

How Children Learn Words

The following simple equation represents how children learn language, including vocabulary:

Input (language models) + Intake (child) + Output (child) = Language Learning

This basic process is essentially the same across languages, is dependent on social interaction, and is enhanced in the presence of warm emotional conditions (Hoff, 2006b).

Vocabulary *input* is the words provided by a language model. In group settings for young children, teachers are the most advanced language model. A language model might be a teacher's own words during large group instruction, meal time, or conversation. A language model might be the language a teacher provides via storybook reading, a classroom curriculum, digital media, or a program of vocabulary instruction. A study of 56 classrooms serving children from low income families found that teacher language modeling was of high quality in only 4% of the classrooms (Justice, Mashburn, Hamre, & Pianta, 2008), which makes improving the quality of teacher modeling, or input, a priority.

The language models providing vocabulary input in children's homes will likely be more varied than in classrooms. Parents or primary caregivers will of course be among the important sources of vocabulary input. Siblings, neighbors, and extended family may also be significant sources of input. A landmark study in which the language development of English-first-language children was followed in homes from infancy to age 3 found two features of the language input were most influential on vocabulary size at age 3 and for later school achievement (Hart & Risley, 1995). The total number of words that children heard and the number of different words children heard were these two formative features. The teaching implication is straightforward. Provide children a large amount of varied word input.

Children must also *intake* the vocabulary that they hear. Words encountered in input must become represented in children's minds. The representation includes a pronunciation for the word and some symbolic form of the meaning.

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To accomplish this intake, children must pay attention to the words and have some capacity to understand and remember the new words they are exposed to. High-quality instruction will help children to focus on and understand new words and to retain this understanding.

The *output* component of the word learning process refers to children using vocabulary. Spoken language is the most obvious evidence of output in young children. The kind of language production that leads to word learning is not simply repetition of what adults say, although this may be an initial part of it. High-quality language production experiences engage children's interest and are accompanied with true opportunities to communicate with classroom language models.

The degree to which output is important for word learning has been the most controversial component of the word learning model presented here, particularly with respect to young DLLs (Swain, 2005). Recent educational practice has relied on the idea that a typical feature of second language acquisition is a silent stage that may last months, and that children are engaged in active language learning during this silent stage (National Association of the Education of Young Children (NAEYC), 1995; Tabors & Snow, 2001). A recent review of all of the evidence from studies of the silent stage in young children (Roberts, 2014) led to the conclusion that there was little evidence for a silent stage. Seven of the total twelve studies were of one child with less than 100 total children studied. Most were seriously flawed on several dimensions of research quality. Teachers need not fear that encouraging DLLs' production will derail vocabulary acquisition by interfering with benefits of a silent stage.

The research on *input* discussed above indicates that an important and sensitive issue for the early childhood field is how to ensure that teachers have sufficient vocabulary to provide high-quality input. The importance of ensuring that children *intake* the input that is provided highlights the significance of children's attention and motivation during vocabulary learning opportunities. Good management, monitoring of children's attention, and engaging and interesting instruction will support children's intake of new vocabulary. The research on *output* reveals the importance of crafting classroom experiences sensitive to children's interests and that ensure and inspire children's oral production during emotionally safe vocabulary learning opportunities. Choral responding, partner responding, and small groups that enable all children to participate are examples of practices to support language production of children more reticent to talk.

Another important idea about how children learn words is that they *fast-map* new words (Carey, 1978). *Fast-mapping* means that children can quickly link a new word and what it refers to, perhaps with a single exposure. This idea has long held an influential position in word acquisition theory and research. Recent theory and evidence challenges the idea of fast-mapping (McMurray, Horst, & Samuelson, 2012) and posits that word learning develops over multiple exposures of associating word labels and what they refer to. The important teaching implication is that review and use of new words in multiple contexts over many occasions is an essential part of an effective vocabulary teaching program. The finding that children can form initial understandings of words from overhearing others suggests that small group conversations may be useful for word learning (Akhtar, Jipson, & Callanan, 2001). Children rely on and benefit from a myriad of social cues such as eye gaze, gestures, actions, illustrations, and seeing what the word refers to while they are learning new words (Houston-Price, Plunkett, & Duffy, 2006). The value of these cues can be seen in studies where their presence improves word learning.

General Features of Vocabulary Instruction Leading to Children's Learning

Much has been said about children's amazing capacity to learn language rapidly and easily given sufficient verbal input. Recent evidence from home and school-based interventions tell us that vocabulary learning is an effortful process and certain features of instruction in group settings add to children's vocabulary learning. In addition, it is estimated that 4 to 7 years are needed to achieve second language proficiency (Hakuta, Butler, & Witt, 2000) so patience and multi-year vocabulary development programs are needed for DLLs.

Explicit instruction of vocabulary wherein specific words are introduced, defined, and accompanied by other carefully planned activities focusing on words leads to better vocabulary learning than implicit practices such as simple exposure to words during an interactive storybook reading without direct teaching of word meaning (Marulis & Newman, 2010). Increasing teacher's understanding and support of the value of explicit vocabulary instruction is a priority given research revealing that preschool teachers report they utilize and prefer practices that are less explicit (Hawken, Johnston, & McDonnell, 2005; Lee & Ginsburg, 2007).

The most effective vocabulary instruction goes beyond giving definitions and connecting new words to previous knowledge. It contains interactive talk between teachers and children. It also includes experiences requiring children to think and to reflect upon words. Examples of experiences to promote thinking and focus on words include generating antonyms and synonyms, comparing words, using words in sentences, and attending to the spoken and written features of words. The use of gesture, illustrations, demonstrations, and acting out are features of instruction that help DLLs learn vocabulary in both storybook reading (Roberts & Neal, 2004; Silverman, 2007) and non-storybook reading contexts (Silverman & Crandall, 2010). Details of effective vocabulary instruction with respect to the language of instruction, storybook reading, conversation, learning centers, and family collaboration are presented in the next five sections.

Instruction in English and the First Language

Programs for young children and their families have long been encouraged to support children's first language (e.g.,

National Association for the Education of Young Children, 1995). Evidence from classrooms that include dual-language instruction (instruction in both children's first language and English) has shown that children in these programs learn English just as well as DLLs in English-only programs. This finding goes against the logic that more English means better English. In addition, children in dual language programs garner the benefit of doing better on measures of first language than similar children in English-only programs (Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Durán, Roseth, & Hoffman, 2010; Lugo-Neris, Jackson, & Goldstein, 2010). Importantly, this pattern has been found for children with very low initial English vocabulary and in classrooms where there were low levels of instructional support (Burchinal, Field, López, Howes, & Pianta, 2012). Other benefits to cognitive development associated with bilingualism include greater control and flexibility of thinking processes and more advanced processing abilities with grammar and word forms such as detecting ungrammatical sentences. Extensive use of the first language in preschool classrooms does not interfere with learning second language vocabulary; it supports the first language and it is associated with cognitive benefits. The instructional implication is straightforward. Incorporate meaningful support of children's first language development and of bilingualism in classrooms to provide a strong foundation for English vocabulary learning.

Storybook Reading

The most successful preschool vocabulary interventions feature storybook reading (National Early Literacy Panel [NELP], 2008; Swanson et al., 2011). Knowledge of the characteristics of storybook reading that render it effective is growing. Talk between readers and children that becomes more complex across repeated readings (Blewitt, Rump, Shealy, & Cook, 2009), interaction between reader and children (Swanson et al., 2011), use of labeling questions that require children's oral participation (Sénéchal, 1997), frequent and repeated reading (Biemiller & Boote, 2006; Zucker, Cabell, Justice, Pentimonti, & Kaderavek, 2013), and prereading in the home language (Roberts, 2008) have all been demonstrated to be beneficial. Reading both information books and books that tell a story can help children learn new vocabulary (Mol & Neuman, 2014; Price et al., 2009). Information books may be a particularly good source of words that will provide the academic language needed to learn a variety of subject areas including math, science, and social studies. A very practical and perhaps surprising finding was reported in a recent review of the vocabulary outcomes of storybook reading in at-risk children (Swanson et al., 2011), although surprisingly few studies of DLLs were captured in the definition of *at-risk*. Large group learning experiences were just as effective as small group or individual experiences. Another review that examined a wider range of practices to improve vocabulary led to the same conclusion (Marulis & Neuman, 2010).

Conversation

Conversation involves two or more speakers taking turns in talk that shares meanings between the speakers. Both the frequency and quality of the conversations between English-only speaking children and their teachers are associated with vocabulary acquisition (Cabell et al., 2015; Zucker et al., 2013). Two of the most powerful teacher techniques are 1) supporting children in initiating and participating in conversation and 2) extending and elaborating children's talk during conversation. When teachers successfully elicit output, help children to produce output, extend what children say and take turns talking, children talk more in dyads and small-group interactions (Girolametto, Weitzman, & Greenberg, 2003; Cabell et al., 2011). Consistent with the findings from Hart and Risley (1995), both the quantity and quality of teacher talk is related to the extent of children's vocabulary learning (Cabell et al., 2015). While these results are based mostly on English-only children, they seem particularly important to test with DLLs whose classroom participation may require extra effort.

Conversations appear to hold promise for improving children's vocabulary. Significant challenges for improving teacher-child conversations in preschool classrooms can be identified. Research on professional development has had limited success in getting high-quality vocabulary supporting practices such as conversation into classrooms (Piasta et al., 2012) and teachers are often distracted from conversation with management demands (Dickinson, Darrow, & Tinubu, 2008). Constraints on the amount of time teachers have to engage in conversations are another challenge. If teachers were to spend all 210 minutes of the typical 3.5 hour preschool day in individual conversations, each child would receive about 10 minutes. A parent might capture 10 minutes for conversation on a drive to the grocery store. Determining how to implement effective adult-child conversation into groups of various sizes should be valuable.

Learning Centers

Learning centers are a cherished and strongly emphasized feature of preschool classroom activity (NAEYC, 2009). A learning center is a theme-, subject-, or curricular-related activity setting that typically accommodates small groups of children. They are designed to afford child-directed participation, including play, and active learning scaffolded by the availability of rich, concrete materials. A center may be available to children on a child-choice or rotational basis. Rigorous research is limited on the effectiveness of these types of classroom centers for language development; however, there is evidence that the presence of clearly identifiable centers stocked with literacy materials lead to increased literacy behaviors such as writing and pretend reading (Morrow & Schickedanz, 2006).

Perhaps the most important finding regarding typical center activities is that the presence of adults who expand and stimulate language, using strategies such as those discussed in the sections on storybook reading and conversation, contributes to word learning (Weisberg, Zosh, Hirsh-Pasek, & Golinkoff, 2013). Additional judiciously used teacher strategies that can be effective are helping children expand dramatic and imaginary play themes and integrating children into roles within multi-player activities (Mages, 2008). For example, upon observation that children playing in the farm center are at a verbal lull, the teacher may comment, "Oh my, a big storm is coming,

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what should we do?" Another child might be integrated by the teacher commenting, "What could Daniel do on the farm?" Adults that are disengaged or take over center activities do not foster vocabulary growth to the same extent. Descriptive studies of teacher language in different center settings reveal that the kinds of talk most likely to increase vocabulary are not frequent and may vary by the type of center (Dickinson et al., 2008; Kontos, 1999; Meacham, Vukelich, Han, & Buell, 2014).

Incorporating specific vocabulary learning activities into centers is another practice that can contribute to word learning (Silverman, 2007). Carefully selected materials such as pictures, objects, models, maps, and books related to target vocabulary can extend, deepen, and review word learning by promoting intake and output. Recent reviews of pretend play (Lillard et al., 2013) and dramatic enactment (Mages, 2008) indicate that contrary to what many preschool educators believe, the evidence for the benefits of these two practices for vocabulary acquisition is inconsistent. Benefits are dependent on specific features of children's play such as the extent of imagination, thematic development, and symbolism. Simple availability of a well-stocked house center where children play on their own is unlikely to provide optimally enriched vocabulary learning opportunities.

Several processes by which centers *may* improve language can be identified for further research. Centers may

- be a source of high-quality input;
- support children's intake of new vocabulary via engagement and enriched contexts for word learning;
- encourage complex and expressive language output through peer interaction;
- provide extended interaction with peers and teachers; and
- increase the variety and abstractness of expressive language use via affordances to take on multiple social roles and pretending (Mages, 2008).

Family Collaboration

Children from low income families and DLLs would benefit from more language development than can occur during a school day and the quality of home language matters a great deal (Hart & Risley, 1995). Hart and Risley found striking differences in input (total number of words and the variety of words children heard) between lower and higher SES families. Children in low-income families heard about 25% of the words heard by children from higher income families. Other studies have shown that variation in the quality of mother's speech (amount, variability, and complexity of talk) is substantially responsible for the relationship between SES and language acquisition (Hoff, 2006a). Mol and Neuman (2014) similarly reported that accounting for variation in adult responsiveness to children's talk and access to books in the home cancelled out part of the effect of SES. Marulis and Neuman (2010) found that overall, children whose parents participated in a program to learn how to support language development scored about 26% higher on measures of vocabulary than did children whose parents did not participate in a program. This group of findings engenders optimism for the possibility that helping parents implement a circumscribed set of language interaction practices and gain access to books may mitigate the language and achievement risk for children from low SES families.

Educators may wonder about the ability of families who do not have strong English language models in the home to implement these practices. Families can be encouraged to enact home language-building practices in the language they speak best with confidence that first language competence is related to later English acquisition in preschool children (Winsler, Kim, & Richard, 2014). A recent example of how to involve families of DLLs and evidence of its effectiveness was demonstrated in a recent study (Roberts, 2008). Storybooks in children's first language or English and parent training in interactive reading were provided for home reading. An 80% family participation rate was achieved by program implementers who did not speak the children's first languages. Following the home reading experience, English storybook reading and vocabulary instruction was provided in the classroom. Improvements in the book vocabulary, tested in English, occurred after reading the books in children's home language, English, and in the classroom with the teacher. Evidence that children's overall English vocabulary measured by a standardized test improved was a particularly persuasive finding for the program's effectiveness.

Two Big Challenges for Improving Children's Vocabulary

One of the most pressing issues is how to ensure teachers have the knowledge, skills, and motivation to implement effective vocabulary-building classrooms practices, and that they do so regularly and intensively across multiple classroom contexts (storybook reading, centers, choice time, conversation, transitions) and multiple social interactional settings (large group, small group, individual). The strong evidence that the amount, quality, and complexity of the input are key features supporting language acquisition, including vocabulary, draws attention to the importance of ensuring that preschool teachers have the vocabulary competence to provide the necessary high-quality input. Most professional development is grounded in the assumption that it is a matter of knowledge and skill regarding effective instruction and ensuring its classroom implementation that is the key for teachers to capitalize on their language modeling capabilities. Recall that research indicates professional development has not led to robust vocabulary learning by children. I suggest that it may be time to consider strategies for helping teachers build their vocabularies. Professional development activities such as teacher book clubs, utilization of online vocabulary building games and exercises, and instruction in language pronunciation are examples of what may be helpful. Such a focus introduces emotions and thoughts associated with culture, language, and adult learning that must be handled very sensitively.

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Teachers Who Build Children's Vocabulary…

1. Explicitly plan for vocabulary development in
    - all domains (physical, social emotional, cognitive)
    - all activity settings (large and small groups, choice, centers)
    - all subject areas (language and literacy, math, science, art, social studies)
2. Provide rich input from personal and expanded sources, ensure intake, and plan for, expect, and inspire spoken output
3. Engage in turn-taking talk with children
    - Follow children's interest, elicit oral participation, expand and extend language
4. Carefully plan and deliver storybook reading every day
    - Use repeated readings
    - Include narrative and informational text
    - Select and teach useful, important, and challenging specific vocabulary words
    - Plan questions and activities before, after and during reading that elicit children's participation, expand their thinking, and engage their interest
5. Elicit oral participation from all children and use scaffolding measures to help all children orally participate
    - Ask questions that vary amounts of production
    - Allow children to respond differently at the same time (e.g., Who was your favorite character?)
    - Use "tell your partner" activities
6. Plan lessons that help children to focus on, understand, and remember new words
7. Use gestures, acting out, demonstrations, pictures, and digital media to teach words
8. Provide review and repeated opportunities to use and extend meanings of new vocabulary
9. Create motivating classroom experiences that will inspire children to use new vocabulary and communicate with adults and other children
10. Collaborate with families to expand vocabulary-building opportunities in the home, using the language/s families know best
11. Incorporate children's first language into the classroom via personal and community language resources
12. Plan interest centers with an adult present who facilitates and gently guides language use
13. Plan interest centers that contain materials to help children learn words
14. Plan interest centers with prompts to engage children in shared dramatic play and to help children use and extend target vocabulary
15. Participate in practices such as reading regularly, working crossword puzzles, playing online vocabulary building games, practicing pronunciation, and engaging in regular writing to strengthen their own vocabulary

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A second important issue is recent evidence that children spend on average between 33% and 44% of the preschool day "unoccupied" or in "no learning activity" (including art, fine motor, and gross motor activities) (Early et al., 2010, Winsler & Carlton, 2003). Approximately 34% of the day is spent in meals, routines, and transitions during which children spend 88% of the time in no learning activity (Early et al., 2010). Capturing more of the available minutes for meaningful learning, including vocabulary learning, is a priority.

Conclusions

Children from low income families and children learning English as a second language continue to need greater opportunity to participate extensively in classroom experiences that effectively build vocabulary. This need is underscored 1) by the evidence of schools' persistent lack of success in ensuring children from low income families and who are learning English as a second language acquire the strong vocabulary skills necessary for academic achievement and 2) by the growing socioeconomic challenges experienced by many children and their families in the United States. There is a fair amount of evidence on the classroom features associated with robust vocabulary learning. Some evidence indicates that teachers can improve their use of these features and particular practices can cause increases in vocabulary learning—with the strongest evidence supporting storybook reading. It must be noted that the causal effects are often modest, constrained to the specific vocabulary included in learning experiences, and do not typically lead to the vocabulary acceleration needed by DLLs and children from low SES families.

To amass the aggregate level of vocabulary *input, intake,* and *output* needed to create substantial levels of vocabulary competence and to accelerate the vocabulary growth of young DLLs and children from low SES families, an emphasis on vocabulary must be present across the entire instructional program. It must also be delivered by teachers with knowledge on how children learn vocabulary and how to promote it and who have the skills and dedication to plan and activate instructional practices that ensure it. Finally, preschool programs are typically half day, leaving most of the time available for language development to home resources. Serious efforts are recommended to apply the evidence on how to help families support their children's vocabulary development, in the home language or English, through expanded collaborations with children's families.

There is greater understanding than ever before regarding the importance of pre-kindergarten vocabulary development, there is greater knowledge than ever before about vocabulary learning of young children and practices to increase it, and there are more resources than ever before dedicated to professional development to increase children's vocabulary. This growing understanding and practical support indicates that these efforts hold promise for increasing the vocabulary of dual language learners and children from low SES families. There are children from these two groups that are at-risk for dyslexia. Insufficient vocabulary likely contributes to the comprehension difficulties characteristic of the specific reading comprehension deficit subgroup of dyslexic children. Success in promoting vocabulary learning in preschool may be one type of early intervention to limit the incidence or severity of this subtype of dyslexia. The time is right to capitalize further on the available knowledge and opportunity and implement vocabulary programs leading to demonstrable vocabulary gains in DLL and children from low SES. These interventions may be valuable for children within these two groups who are at risk for developing dyslexia distinguished by comprehension difficulties.

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