

# Re-examining Core Vocabulary for Children that Require AAC: A Developmental Perspective

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## Background

- Many individuals with complex communication needs (CCN) are beginning communicators; that is, their use of symbols is emerging or new (Holyfield, Caron, Drager & Light, 2018). This stage of development occurs between approximately 12-24 months of age in typically developing children, but individuals with CCN may remain beginning communicators into adolescence and adulthood.
- For individuals in the emerging symbolic stage of language learning, one challenge is that of vocabulary development.
- Early vocabulary development serves as a foundation for further vocabulary development and for development of semantic relations and syntax (Ambridge & Lieven, 2011). Additionally, early vocabulary predicts later communication, academic and literacy outcomes (McKeown, Beck & Sandora, 2012).
- For both typically developing individuals (Hopman & MacDonald, 2018) and those with CCN (Romski et al., 2010), opportunities for production in addition to input seem to be important for language learning; thus, to maximize vocabulary development for beginning communicators with CCN who require augmentative and alternative communication (AAC), care must be taken to ensure that learners can easily access developmentally appropriate vocabulary.
- To help select words for AAC systems and determine instructional priorities, one possible strategy is to reference published lists of "core" vocabulary words (Thistle & Wilkinson, 2015).

## Purpose

The purpose of this paper is to explore the appropriateness of taking a core vocabulary approach when designing AAC systems and instructional programs for beginning communicators with CCN who require AAC.

For the purpose of this analysis, only core word lists published in peer-reviewed journals and relevant to beginning communicators were considered. Lists that include text-based sources and non-English speaking participants were excluded.

## Core Word Lists for Young Children

- Five lists located
  - Four developed by analyzing spoken language samples from typically developing participants (Beukelman et al., 1989; Marvin et al., 1994; Trembath et al., 2007; Banajee et al., 2003)
  - One based on both informant report and language samples of typically developing children (Fried-Oken & More, 1992)
- No lists included participants under the age of 24 months
- No lists included language samples from participants with CCN

## How do Typically Developing Children "Choose" their Early Words?

The words in early expressive lexicons:

- Typically reflect an individual's interests, experiences, and routines (Owens, 2005)
- Represent the people, objects, actions and events that are most salient and motivating to the individual (Bochner & Jones, 2003)
- Cannot be predicted simply based on which words children hear most often. Rather, children produce the words that they want to use (Lieven, 2010)

## Which Words do Typically Developing Children Use in Early Expressive Language?

- First 50 words (Owens, 2005):
  - Nouns (60-65%)
  - Action words (14-19%)
  - Modifiers and personal/social words (20%)
  - Function words (0-4%)
- Early vocabularies also contain sound effects, animal sounds, and words related to social routines (Fenson et al., 2007)
  - Choo choo, woof
- Early word combinations usually involve two words that are related to the same topic, and are often content words representing agents, actions, and objects (Bochner & Jones, 2003). Later, modifiers (e.g., more, big, little, this, that, my) are added.

Two-word semantic rules (adapted from Owens, 2005).

Semantic-syntactic rule	Examples
Attributive + entity	Big doggy
Possessor + possession	Daddy shoe
Recurrent + X	More up
Nonexistence or disappearance	No juice
Rejection (of proposal)	No bed
Denial (of statement)	No baby
Demonstrative (this/that) + entity	This cup
X + locative	Doggie bed
X + dative	Give mommy
Agent + action	Daddy eat
Action + object	Eat cookie
Agent + object	Daddy cookie
	Mommy ball

## How are Core Words Identified?

Core words are determined primarily by frequency and/or commonality in spoken language samples

- Words occurring with a frequency of at least 0.5/1000 (Beukelman et al., 1989; Marvin et al., 1994)
- Words occurring with a frequency of at least 0.5/1000 AND used by at least half of the participants (Trembath et al., 2007)
- Words used across at least 4/6 sampling contexts (Banajee et al., 2003)

Fried-Oken and More (1992) also considered words that informants described as important

## Which Words are Considered "Core?"

- Lists vary considerably
- Core words depend on population, context, and criteria for defining core
- If we list the top 100 words on all of the ranked core word lists and compare them across lists, less than one third of the words appear on 3 or more lists.
- Approximately half of the words appear on only one list.
- On ranked lists, function words tend to be more "core" and content words tend to be less "core."

Words appearing within the top 100 on all four lists that ranked words in order from more to less "core." All words also appeared on the list that did not present words in rank order. (Marvin et al., 1994).

I	My	Go	Here
You	That	Is	Want
No	On	What	Out
It	In	Yes	Off

References:



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## What can Typically Developing Children Say with Core Words?

Selected utterances of a typically developing child between the ages of 36-48 months (adapted from Chapman, 1983). Words considered "core" for young children age 24-36 months (Banajee et al., 2003), the youngest age for which core words have been determined, are in bold.

Function	Vocalization	Gloss
Request for food	More	I want some more
	cake	I want some cake
Request for specific objects or entertainment	ball	I want my ball
	Dvorak	I want the Dvorak record on
	fish	I want to be lifted up to where the fish picture is
Specific requests for activity	book	Let's look at a book
	lunch	Come for lunch
Request for permission	stick-hole	Can I put my stick in that hole?
Greeting person	/alouha/	Hello
Seeking person	Anna?	Where are you?
Finding person	Anna	There you are
Initiating routines	Devil	You say, "oh you are a devil"
Response to "where" question	/be/	There it is
Comment on appearance of object	star	That's a star
Comment on disappearance	No more	The star has gone
Pleasure	/ay/	That's nice
Warning	/i:/	Careful, it's sharp
Complaint	/i:/ he/	I'm fed up
Pretend play	/a:oo/	Roar; let's pretend to be a lion
Jingles	Cockadoodadoo	
Rhymes	(supplies final word)	

## Discussion and Implications

- The core word lists reviewed primarily reflect the expressive language of typically developing children with more advanced language skills than would be expected of a beginning communicator, either with or without CCN.
- These lists tend to privilege function words while placing less of an emphasis on personally relevant content words; this is not consistent with the makeup of early expressive vocabularies in typically developing children, which contain a high proportion of content words (e.g., nouns, action words, descriptors) as well as sound effects, animal sounds, and social/routine words (e.g., uh oh, shh, bye bye), and a lower proportion of function words.
- With the exception of the Fried-Oken & More (1992) list, core words are primarily based on frequency and/or commonality of occurrence in speech; in contrast, the early words that typically developing children "choose" to produce reflect the specific items, people and events that interest them and capture their attention.
- Prioritizing use of core words for emerging and early symbolic communicators disrupts the typical language development process with unknown effects. This practice may be detrimental if it results in an expressive vocabulary lacking in the meaningful and personally relevant content words that form the foundation for early semantic relations and future syntactic development.
- Vocabulary selection and instruction for beginning communicators with CCN should consider what is known about early expressive language, as well as the individual child's interests, rather than relying on existing core word lists.

## Acknowledgements

This research was supported in part by funding received by the first author from the Penn State AAC Doctoral Leadership grant from the U.S. Department of Education (grant #H325D170024). The contents do not necessarily represent the policy of the U.S. Department of Education and you should not assume endorsement.