

# Intervention Activities and Strategies for Promoting Academic Language in Preschoolers and Kindergartners

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Received: September 29, 2014; Accepted: December 22, 2014; Published: December 29, 2014

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## Abstract

Teaching academic language has recently become a separate focus from teaching subject content for school-aged children, but it is rarely considered with preschoolers and kindergartners. The critical importance of fostering academic language before children enter elementary school has recently been posited and supported by various strands of research, and the term academic talk has been used to capture the fact that early exposure to and use of this register is in the oral modality only. There is a pressing need for an early focus on this register for children with language impairments, given that their language weaknesses often foreshadow academic difficulties. In this article, an integrative framework of academic talk developed by van Kleeck is used to discuss concrete ways in which professionals can foster the social-interactive and cognitive features of academic talk among young prereading children. A focus on these social-interactive and cognitive features, which provide a coherent and accessible conceptual framework for the interventionist, automatically recruits the many specific linguistic features that have been found to be characteristic of academic language. Previous research has directly or indirectly shown that preschool and kindergarten children's exposure individually to each of these features is associated with future academic success. However, this previous research has not provided a construct for considering the full constellation of features that combine to create the academic talk register. This article provides ideas for approaching these features individually at first, but then posits the need to gradually combine a focus on more and more features simultaneously to more completely reflect the nature of the academic talk register.

**Keywords:** Language; Preschool; Academic readiness; Intervention

## Introduction

In research syntheses emerging since the year 2000, many scholars have discussed the critical importance of academic language for school success among school-aged children, and have distinguished this pattern of language use (or register) from one used for everyday social purposes [1-6]. Reflecting this growing emphasis, explicitly teaching academic language is a central focus of the Common Core State Standards (<http://www.corestandards.org>). More recently, van Kleeck made the claim that it is imperative not to wait until children are school-aged to begin thinking about the academic language register; professionals working with children who are typically developing and those with Language Impairments (LI) need to begin fostering academic language during the preschool years [1,2]. Furthermore, she noted that for children with language impairment whose parents have lower education levels, which includes many from culturally (economically, racially, & ethnically) and linguistically diverse backgrounds, this need can be even more pressing, because these children often get much less exposure to academic language in their homes than do children from mainstream backgrounds. This is because parents with far less experience with AT themselves due to less years of schooling will not be able to naturally transmit this register to the next generation. In contrast, parents with higher education levels will very often use AT in their daily interactions with their children.

The term language impairment is intended to include both children with specific language impairments that occur in the absence of other disabilities and children with secondary language impairments that

occur with disabilities (such as hearing impairment, autism, and cognitive delay).

The strong association/correlation of income and education levels with race and ethnicity has been a persistent pattern in American society. As an example, according to the Economic Policy Institute (<http://www.epi.org>), in 2010, the median income was \$97,000 for Whites, \$40,705 for Latinos, and \$39,715 for Blacks. The strong relationship between income with education level is found in their 2007 data showing that for the group with the bottom 5<sup>th</sup> of income, 30.4% have less than a high school education and 1.8% have an advanced degree (beyond college). For the top 5<sup>th</sup> income group, 1.2% has less than a high school education and 36.9% have an advanced degree.

Van Kleeck synthesized scholarship from a wide variety of disciplines into a comprehensive framework of social-interactive and cognitive features that distinguish between the two broad registers of oral language that she referred to as Academic Talk (AT) and everyday Casual Talk (CT) [2]. Building on Halliday's systemic functional linguistic theory [7,8], she proposed that these social-interactive and cognitive features automatically shape the numerous co-occurring linguistic features more prevalent in each register. In other words, it is the purposes to which language is put that determine the nature of language used. As such, the linguistic features of AT will be employed naturally when the interventionist focuses efforts on promoting the social-interactive and cognitive features of the register.

The goal of this article is to use the van Kleeck framework to propose intervention activities and strategies for fostering the use of AT register in preschoolers and kindergartners with Language

Impairment (LI), although they are also appropriate for any preschooler less familiar with this register. Many of these activities and strategies allow the simultaneous integration of a number of social-interactive and cognitive features, and as such they also promote the use of many co-occurring linguistic features of the AT register.

Registers, or sets of co-occurring features of language, exist to support different functions of language. Van Kleeck [1,2] notes that the broad function of the casual talk register, or CT, is to get material things accomplished in everyday life (the business of daily living) and to have relationships with significant people in our lives. Academic talk serves the broad function of furthering one's knowledge about the world. As such, it is the register of teaching and learning and is used primarily for transmitting, acquiring, and displaying knowledge. With preschoolers and kindergartners, assuming children who are not yet reading and writing independently, the academic register is used only orally, hence the use here of the term academic talk.

The overall framework for distinguishing the CT and AT registers consists broadly of social-interactive and cognitive features. The social-interactive features include the rules for participation in the talk and the degree of formality. The rules for participation have three

subcategories, including the degree of autonomy encouraged, the nature of verbal display, and the nature of topic participation. The cognitive features include seven subcategories: the degree of support of the context, the generality of information, the precision of concepts, the type of reasoning, the level of reasoning, the use of "meta-" skills, and the degree of confidence in the information conveyed [2].

In the following, the ways in which these features characteristically manifest in the CT versus the AT register will be discussed. For each feature, ideas for activities and strategies for promoting children's familiarity with how these features manifest in the AT register will be offered. The ways in which numerous features can often be simultaneously focused upon will also be illuminated. For discussion regarding how these social-interactive and cognitive feature differences necessitate linguistic differences between the two registers, the reader is referred to van Kleeck [2]. Table 1 provides a summary of how the social-interactive and cognitive features combine to influence the language used in each register along the broad dimensions of (a) explicitness and precision, (b) formality, and (c) abstractness. For each of these dimensions, it sorts how language manifests differently in these two registers at the lexical, sentence, and/or text levels.

Dimensions & Characteristics		Linguistic Features More Prevalent in Casual Talk	Linguistic Features More Prevalent in Academic Talk
<b>EXPLICITNESS &amp; PRECISION</b>			
<b>Lexical Level</b>	<b>Diversity</b>	Lower [9]*	Higher [9]*
		More indefinite & demonstrative pronoun usage; more proverb DO usage [10]*	Less indefinite and demonstrative pronoun usage [10]*
	<b>Density</b>	Sparse [4]*	High proportion of content words [6,11]
	<b>Precision</b>	"Fuzzy" terms (sort of, something like) [6]	Precise terms [6]; Specific, technical terms [4]*; Specific academic vocabulary [11]
	<b>Explicitness</b>	Exophoric reference–referents for pronouns found in physical context [6]	Endophoric reference–referent for pronouns found earlier in the linguistic context [6]
<b>Sentence Level</b>	<b>Complexity</b>	Fewer relative clauses & prepositional phrase sequences [4,9]*	More relative clauses [10]*; more prepositional phrase sequences [9]*; more complex embedding [12]
	<b>Length</b>	Shorter [9]*	Longer [9]*
	<b>Subjects</b>	Pronominal, present or known participants [4]*	Nominalizations and expanded noun phrases [4]*
<b>FORMALITY</b>			
<b>Lexical Level</b>	<b>General vocabulary</b>	More colloquial vocabulary [9]*	More literary vocabulary [9]*
		More simple, common, high-frequency, familiar words [13]	More unfamiliar words [13]
		More Germanic words [14]* (eat, hand)	More Latin & Greek words [14]* (dine, manual)
		Shorter words [10]*	Longer words [10]*
	<b>Use of contractions</b>	More contractions [9]*	Fewer contractions [9]*
	<b>Personal pronouns</b>	More personal pronouns, particularly more 1 <sup>st</sup> person [9]*	Fewer personal pronouns, particularly fewer 1 <sup>st</sup> person, more 3 <sup>rd</sup> person [9]*
	<b>Appreciative markers</b>	Contains appreciative markers (sure) that convey attitude interest, values [12] and involvement (you tell me!) [6]	Leaves out appreciative markers [12]
<b>Sentence Level</b>	<b>Sentence mood</b>	Variety of moods (declarative, interrogative, imperative) [4]*	Mainly declarative [4]*

	<b>Sentence voice</b>	More active sentences [9,10]*	More passives [9,10]*
<b>Text Level</b>	<b>Narrative structure</b>	Topic associative organization; chaining of ideas or anecdotes [13]	Topic-centered organization; explicit, linear description of a single event [13]
	<b>Conjunctive relations</b>	A few commonly used conjunctions serve variety of discourse functions [4]* (and, so, and then, but)	More varied set of conjunctions used in more restrictive ways [4]* (however, therefore, nevertheless)
<b>ABSTRACTNESS</b>			
<b>Lexical Level</b>	<b>Adverb types</b>	More temporal & spatial adverbials indicating involvement with concrete reality [9]*	Less temporal & spatial adverbials [9,10]*
	<b>Verb types</b>	More activity verbs [10]*	Less activity verbs [10]*
		Verbs represent actions; and identifiable agents (e.g., people) perform actions [11]	Abstract concepts can 'perform' actions" [11]
		Less mental state talk [15]*	More mental state talk [15]*
	<b>Noun types</b>	Nouns more frequently represent persons, places, and things [11]	More nominalization (e.g., turning verbs to nouns with -tion, -ment, -ness, etc., as in development); more abstract subjects (this suggestion); more abstract nouns [10]*
	<b>Expressions of certainty</b>	Fewer probability words [9]*	More modulation of certainty using modals or adjuncts such as might, could, probably, obviously & likely [9,15]*
	<b>Level of labels</b>	Level of labels: Less superordinate (animal) & subordinate (tabby) category labeling [16]*	Level of labels: More superordinate & subordinate category labeling [16]*
<b>Morpho-logical complexity</b>	Morphologically simple words [17,18]*	Morphologically complex words [17,18]*	

**Table 1:** Linguistic features of casual and academic talk. \*Characteristics supported by empirical research conducted with adults or children.

As noted earlier, children from mainstream culture backgrounds, because their parents have higher education levels, are often exposed to a great deal of AT in their homes during the years before they enter formal schooling. Being more educated, these parents had more exposure to and success with the academic language register themselves, and as such appear to use it rather naturally in day to day interactions with their young children in the home [1]. That is, these parents tend to combine the functions of both registers—using communication to get through the business of daily life and expanding their child’s knowledge about the world. In families from mainstream culture backgrounds, then, the features of the AT register are often as prevalent at home as they are in schools. However, when preschoolers have Language Impairments (LI), by definition they have weak language skills regardless of the register. It is important, then, to be consciously fostering both CT and AT in these children from our earliest interventions with them.

Parents with lower education levels, which tends to be the case for many from Culturally and Linguistically Diverse (CLD) backgrounds, will often be less familiar with the AT register. Before assuming this is the case, however, professionals need to learn about the specific parent-child interaction patterns in any family, including those with higher education levels. To this end, Van Kleeck [19] offers suggestions for nonjudgmental ways of conducting interviews with families to determine typical parent-child interactions in a variety of daily living contexts.

In cases where it is determined that parents are using very few features of AT with their children in the home, professionals should inform parents about the importance of this pattern of language use to their child’s later school success. Parents may then opt to be coached

in using AT themselves (although they may prefer to constrain this to selective activities and/or contexts), or they may opt to have the professional work directly with their child to foster skill with the AT register. Either or both of these routes should help pave the way for the child to have a successful transition to the way language is often used in school.

## Social-Interactive Features

### Rules for participating in the interaction

**Degree of autonomy encouraged:** Mainstream culture families and institutions (such as schools) in the United States tend to share the values of individualist cultures, including independence, personal achievement, and self-determination. These values combine to encourage the child’s autonomy or independence as a separate person with separate opinions, likes and dislikes. Parent’s encouragement of their preschooler’s autonomy predicts the child’s future academic success [20]. Culturally and Linguistically Diverse (CLD) groups in the United States will often tend toward more collectivist values [19], and in their everyday Casual Talk (CT) with their preschooler, they will likely place more emphasis on encouraging their children’s obedience and interdependence with others. These kinds of values are why some parents may not wish to learn to use the AT register with their child themselves, or they may wish to have their use of the register restricted.

Strategies for encouraging a child’s autonomy can be easily embedded into just about any activity. It simply involves giving the child choices, and hence a sense of control, by asking her or him to

express their opinions or likes and dislikes. So, a child can be asked to select between two or more choices of which outfit to wear to school, which book they would like the adult to read and discuss with them, what type of sandwich they would like to take to school, and so forth. Even “directives” from the adult can be couched as a choice. A child might be asked, “Which would you like to do first, put on your shirt or put on your pants?” In an intervention context, the child could be asked to choose from one of two or more activities planned for the session. Children can also be asked their opinions about all matter of things, such as asking, “Did you like the story I just read?”

**Requests for verbal display:** Children from mainstream culture families in the U.S. are often called upon to display skills they are in the process of learning. This casts them into what anthropologists have referred to as an exhibitionist role [21]. Schools, being mainstream institutions, operate similarly regarding this exhibitionist role. More collectivist cultures expect children to learn more by observing, and cast them into more of a spectator role [22]. One particular type of display children from mainstream culture backgrounds are often called upon to engage in by adults has been referred to as verbal display [21]. That is, they are requested to answer many questions in which the goal is to show what they know, and not to provide information that is unknown to the person asking the question, as is typical in the CT register. Educators have referred to these kinds of questions in a number of ways, with examples including known information questions [23], questions with known answers [24], and test questions [25].

Van Kleeck and Schwarz [26] suggested another type of verbal display that requests that children display what they are thinking rather than what they already know. As such, they distinguished requests for verbal display of already acquired knowledge from requests for verbal display of thinking. In school [27] and often in mainstream culture homes, children are very frequently called upon to verbally display what they know. Ideally, they are also frequently called upon to verbally display what they are thinking, because their exposure to these more challenging kinds of questions predicts their later language and literacy skills [28]. Verbal display of thinking relates conceptually to what educators have referred to variously as progressive discourse [29,30], instructional conversation [31], learning talk [32,33], and accountable talk [34].

Not all children get extensive experience responding to requests for verbal display in their homes. Professionals need to be certain that children with LI, and in particular children with LI from CLD backgrounds where AT is often much less frequently used, understand what their role is when such questions are asked. This may be particularly necessary because at least a small amount of evidence indicates that children from some backgrounds may be discouraged from answering such questions [35], or they may be used to tease or chastise in their cultural groups [36,37].






Van Kleeck and Schwarz [26] came up with scripts to suggest ways in which a teacher, for example, might explain to a group of children the nature of the kinds of questions that are often posed to them in school and the protocol for responding to them. In explaining requests for verbal display of knowledge, the teacher might say something along the lines of the following: “Because we are in school, I’m going to ask you and the other children questions I already know the answer to. . . . That helps me know if I’m doing a good job teaching you. If you don’t know the answer, that’s okay, too. Maybe another child or I will give the answer” [26].

To explain requests for verbal display of thinking, the teacher might say, “Sometimes, you might not know the answer to questions I ask, but you can think about what the answer might be, and you can tell us what you are thinking.” The teacher might then model such a request, and a possible response to it, and introduce this by saying, “Let me show you what I mean.” She or he could then follow up with, “I wonder who this book is going to be about? I haven’t read this book before, so I don’t know for sure who it is about. But I can use hints from the cover to guess who the book might be about.” The teacher or clinician could then pause and ask the class if they see any hints on the cover that help them guess who the book is about. Likely some children will come up with viable answers, but if not, the teacher could continue, “There is a picture of a bear and a bird on the cover, so maybe the book is about the bird or the bear, or maybe about both. But, I’d have to read the book to find out if I made a good guess or not” [26].

**Nature of topic participation:** The third area considered under Rules for Participation in the Interaction is topic participation. In everyday Casual Talk (CT), the participants in the interaction often equally control the topics discussed, contributions are spontaneous, and the length of contributions made by various participants tend to be more or less balanced. When the AT register is used in school, the teacher typically controls the topic, the teacher most often either elicits contributions to the topic or manages spontaneous contributions by requiring some kind of request for permission to speak by the child (typically by raising a hand), and the teacher dominates the talk by engaging in a fair amount of monologue.

Effective teachers will make rules for participation in any activity in the classroom explicit to children; that is, they directly teach children how to behave in different classroom situations or activities as well as during major transitions [38-42]. Teaching children the rules that specify the teacher’s behavioral expectations sets the stage for student success [39,40,43-46]. In contrast, poor behavior management in classrooms can lead to negative academic outcomes [47,48]. Although this research on classroom management has not directly measured an impact on children’s language skills, it does demonstrate the power of explicitly teaching children the rules for participation in any given activity.

One frequently used evidence-based approach to classroom management, CHAMPs, provides a set of strategies for supporting positive behavior in the classroom [49]. It might also be able to be used effectively in small group therapy sessions with children with language impairments. The acronym CHAMPs specifies five categories in which expectations for student behavior should be explicitly taught—Conversation (Can students talk to each other during this activity?), Help (How do students get the teacher’s attention and their questions answered?), Activity (What is the task or objective? What is the end product?), Movement (Can students move about during this activity?) and Participation (How do students show they are fully participating? What does work behavior look or sound like?). The subset of these rules that focus on conversation and participation provide an example of how the rules for participation in the AT register in one particular activity might be conveyed to young children. Examples of rules for all aspects of the CHAMPs acronym that might be used during classroom story time are given in Figure 1.

<b>Example Rules for Each Part of CHAMPs Acronym During Reading Circle</b>	<b>Simple Reminder Illustrations of Each Rule</b>
<b>C=Conversation:</b> NO TALKING with your neighbor. Take your turn talking about the story and pictures when the teacher calls on you.	
<b>H=Help:</b> Raise your hand if you have a question for the teacher.	
<b>A=Activity:</b> The teacher will read a story and show you the pictures, and ask the class questions about the story. Your job is to listen carefully and be ready to answer questions.	
<b>M=Movement:</b> Stay quietly in your special spot on the story time rug until story time is over.	
<b>P=Participation:</b> Listen carefully. Keep your eyes on the teacher and the book. Raise your hand to answer or ask a question.	

**Figure 1:** An example of employing the CHAMPs approach to classroom management to story time in a preschool or kindergarten classroom.

**Degree of formality:** Casual Talk (CT) tends to be less formal than AT. In CT a speaker is more likely to use vocabulary that is colloquial (e.g., kids vs. children) and familiar (building vs. edifice), and to interject what are called appreciative markers (e.g., wow, awesome, cool). Given their level of language development, preschoolers and kindergartners are not likely to be exposed to AT that is very formal, but it may still be possible to introduce them to the idea that language

can be more casual or more formal. A way we might do this is via a game. The game could be initiated by having the child chose a picture of one bear dressed in more fancy or formal clothes and another bear dressed in casual play clothes. Giving the child the choice among several pictures of casually and more formally dressed bears is a way to encourage the child's autonomy, something we want to do often when the activity allows it.

After the child has chosen two bears, one fancy and one dressed more casually, tell her or him the gist of the game: The bear with the play clothes on uses regular words. He/she says “kids,” but not the fancier word “children.” He/she also says “happy,” but not the fancier word “delighted.” So when I say regular words, you point to the play clothes bear. I’ll show you and then you can show me. The teacher or clinician should stop at this point and repeat the word “kids” and point to the bear with the play clothes on, and then say the word “happy” and point to the play clothes bear again. Then the child can take a turn pointing to the bear in the play clothes when each of those words is repeated. The bear with the fancy clothes uses fancy words. When he/she says “children” and “delighted,” you’ll point to the fancy bear. I’ll show you and then you can show me. The teacher or clinician should stop at this point and repeat the word “children” and point to the bear with the fancy clothes on, and then say the word “delighted” and point to the fancy clothes bear again. Then the child can take a turn pointing to the bear in the fancy clothes when each of those words is repeated.

Sometimes the whole sentence is plainer or fancier, even though it means the same thing. The fancy bear might say, “At what time shall we dine? So I’ll point to him/her.” Stop and point to the fancy bear, repeat the sentence and have the child do so as well. The bear in the play clothes might say, “When are we going to eat? So I’ll point to him/her. Stop and point to the bear in the play clothes, repeat the sentence and have the child do so as well. Both sentences mean the same thing, but one is with fancy words and the other is with regular, plain words.

First just listen to both words, then I will repeat one of them, and you point to the bear that would probably say that word. So after I repeat the fancy sentence, “At what time shall we dine?” you would point to the fancy bear. And after I repeat, “When are we going to eat?” you would point to the play clothes bear. In school, we sometimes use fancy talk and as you get older, you will use more and more fancy talk in school.

Many additional basically synonymous sentence or phrase pairs (e.g., a bunch of happy kids vs. several delighted children) could be generated for the child to judge as fancy or not fancy. You could also play this game with individual words pairs that are synonyms, with one that is more frequently used and familiar than the other “fancier” word. Some examples might include: rain vs. precipitation, baby vs. infant, girl vs. female, boy vs. male, fall vs. autumn, watch vs. observe, show vs. demonstrate, and calm vs. tranquil.

To my knowledge, the formal aspect of AT has not been addressed in previous research with preschool and kindergarten children. However, the importance of vocabulary development to later school success is very well established [50,51], and the game suggested here could certainly help to grow a child’s vocabulary.

### Cognitive Features

The cognitive features of CT and AT tend to differ along a number of dimensions, including the degree of support from the context, the generality of information, the degree of precision of concepts, the type of reasoning, the level of reasoning, the degree of use of “meta-“ skills, and the degree of confidence in the information conveyed. Each of these areas is discussed in this section. In Table 2, the manifestations of these cognitive features in the AT register are listed.

Less Support from Physical and Social Context
General Information
More Precise Concepts
Logical, Linear Reasoning
More Inferential Reasoning
Use of “Meta-“ Skills
Convey Degree of Confidence in Information

**Table 2:** Cognitive features of AT.

### Degree of support from the context

The meaning of messages in CT tends to be more supported by the physical and social context than it is in AT. In terms of support from the physical context, CT can often be focused on the business of daily living, and hence the things one is talking about may be available in the context (e.g., Pass me the salt, please). Also, in everyday life, we often talk with people with whom we have shared many experiences, thereby providing social support to bolster the meaning conveyed in the linguistic messages.

By contrast, scholars often discuss the “decontextualized” nature of the language often used in school, meaning that it tends to be removed from the support to meaning provided by people with whom we have many shared experiences and it also lacks information being conveyed by the immediate physical context. This makes AT often more challenging than CT, because meaning has to be derived from just the language that is used. This puts heavier linguistic demands on speakers when using the AT register because more information must be explicitly stated, and on listeners because information must be derived from linguistic messages alone. Note that “decontextualized” is in quotations. This is because language used in school is also tied to a social context that is just different from, and generally more complex than, the intimate social and physical context that often supports CT.

Exposing children as young as preschoolers to decontextualized language is important to their later academic success [52-56]. To foster the decontextualized aspect of AT, language use with young children needs to be removed from discussing things that are going on in the immediate physical context. Discussing past, future, or imaginary events would all fit this bill. Past events the child participated in might be the easiest of these three, particularly if the past event is one the child has experienced numerous times. Using child-generated photographs might support the discussion of such an event, or even better yet, using several photos sequenced in the same order as the activities that comprised the event (as will be noted later, this will also support children’s ability to tell logically sequenced narratives). Future events and imaginary events might be more difficult.

Sharing storybooks with children is a widely used method of introducing them to decontextualized language, because the pictures and text in a book are removed from the “here and now” (i.e., removed from the reality provided by the current physical context). The literature abounds with examples and research regarding strategies for sharing storybooks with young pre-readers, so here the focus will specifically be on how one might help a child transition toward greater and greater degrees of decontextualized language.

The example above would perhaps provide a good first step—creating a book about a past event in which the child has frequently personally participated. This might be, for example, a photo-illustrated story about the child taking the bus to school. One might later share a published story of a fictional child taking the bus to school, as this would be a bit more decontextualized. Next a published story of a bear taking the bus to school would add an imaginary component, moving even a bit further along the continuum toward greater decontextualization (or, one could move to a story about an event the child had not personally experienced as a way to provide somewhat less contextual support). Finally, an information (or expository) book about buses in general would take decontextualization a step further, and also leads to the next cognitive feature discussed in the van Kleeck framework—generality of information.

A different way in which language can be decontextualized is to talk about unobservable mental states instead of observable activities. Such words can refer to beliefs, perceptions, desires, likes and dislikes, or emotions [15]. This kind of language orients children toward knowledge about cognitive phenomena, or meta-cognitive understanding. This will be discussed later in the Use of “Meta-” Skills section, when it will also be tied to the concept of theory of mind.

### Generality of information

Because CT is communication that functions to support our ability to get things accomplished that are necessary to everyday life and to help us maintain our relationships with important people in our lives, it often focused on personally relevant, familiar, and specific objects, people, animals, places, and events. AT serves to further our scientific understanding of the world, and our store of certain kinds of information typically shared by members of the educated culture (e.g., the wars our country has engaged in, who the major leaders in our country are and have been).

In expanding their scientific knowledge, children learn about the world on a more general level. That is, they learn about the characteristics of categories of objects, people, animals, places, and events. Children also begin to learn superordinate and subordinate categories for these things, and as such begin to hierarchically classify the world. So, a child might learn general information about bears, general information about a superordinate category to which bears belong (mammals), and general information about a subordinate category to which bears can belong (e.g., polar bears).

When we learn about specific things in school, it will be the kinds of information that is generally known by the wider educated public. Also, the specific things we learn about in school are usually different from the specific things one discusses in everyday life. In school, the specific things discussed are often not personally familiar (e.g., learning about the President of the U.S), or they may be very much at a remove from the present time (e.g., learning about historical events and figures, previous geological events such as the ice age, or extinct species such as mastodons) or the present place (e.g., learning about ice caps, deep sea creatures).

In working with preschoolers and kindergartners, moving toward generality in the AT register can be achieved in a variety of ways. Show and tell, for example, has long been studied as a vehicle for shifting children into the kinds of language used in school. Van Kleeck [2] provided a quote from Reid in which he stated that, “Show-and-tell is an instructional vehicle that allows students to learn what scientific concepts are, to recognize that the scientific concepts register is

privileged in school, and to adopt the new form of language usage that the teachers so carefully scaffold” [27].

Van Kleeck [2] discussed how we might directly inform a child regarding the educational goal of show and tell by using the example of a child who brought a piece of lava rock to school that was discussed by Wertsch [57]. Van Kleeck suggested the following script as an example, “When you talk about your special rock in school, you may quickly tell us why it is special to you, but then we also want to talk together about what kind of rock it is. That way, we can use your special rock to learn about lots of rocks. I’ll help you by asking you some questions as you tell us about your special rock. And we really appreciate that you brought your rock to school to help us learn more about all kinds of rocks.”

Storybooks can often be used as a bridge to more general types of information. For example, a published story book appropriate for preschoolers and kindergartners entitled *Mooncake* [58], is about a bear and his friend who is a little bird. At one point in the story as colder weather arrives, the little bird says he has to fly south with his friends, and somewhat after this, the bear falls asleep for a very long time. Nothing more is said in the text about these specific events that occur with these specific characters. After two or more readings of this book, however, these specific events can be used to segue into general information about birds and bears, namely migration and hibernation.

This might first be approached with a fictional story more specifically focused on bird migration, *Welcome, Brown Bird* [59]. This is the story of one bird’s long migration between New England and Central American and the two boys, one at each end, who share a fondness for him. Getting more general, the adult could then introduce, for example, an information or expository book that is more generally about migration and covers ten kinds of animals. It is entitled: *Going home: The mystery of animal migration* [60]. In addition to providing direct factual information typical of expository books, this book also has rhyming verses, which make this a book that can also be used for the metalinguistic skill of phonological awareness to be discussed later.

### Degree of precision of concepts

The CT register often allows “fuzzy” or indistinct and vague terminology, including words and phrases such as *stuff*, *thing*, *kind of*, *sort of like*, *I mean like*, and *or whatever*. In contrast, the AT register requires the use of increasingly precise concepts as children go through their academic careers.

In the last section, the general nature of the information conveyed in AT was discussed. However, general information involves precise concepts. Migration, for example, provides general information not only about an entire category of animal (e.g., all monarch butterflies), but also about all of the animals in many different categories (the book mentioned earlier discusses monarch butterflies, manatees, ruby-throated hummingbirds, Pacific salmon, Canadian geese, gray whales, caribou, loggerhead turtles, Arctic tern, Emperor penguins). However, migration is also a precise concept. It is not simply about animals’ general movement from one place to another. The precision comes from specifying when, where, why and how the different types of animals are moving. So, the AT register facilitates general knowledge, and this goes hand-in-hand with facilitating more precise concepts.

This greater precision relates to the third tier in a vocabulary system developed by Beck and her colleagues [61,62]. The first tier, Tier I, consists of words from everyday speech and would correspond to CT

register vocabulary (or the words considered being less “fancy” when language formality was discussed earlier). The second and third tiers, Tiers II and III, consist of vocabulary more frequently found in the AT register. The second tier consists of general academic words used across different school subjects, and would include such words as demonstrate, justify, sequence, directions, explore, measure, problem, disadvantages and characteristics.

The third tier consists of highly specialized, subject-specific words that occur relatively infrequently. This more precise vocabulary is essential to building conceptual understanding in specific content areas such as mathematics (e.g., circumference, perpendicular), science (e.g., chrysalis, meteorite), history (e.g., abolitionist, Crusades), social studies (e.g., anarchy, democracy), and language arts (e.g., alliteration, onomatopoeia). Some words, although precise, would certainly be in the purview of preschool and kindergarten children if handled with the right kind of support. They might learn about hibernation and migration, as mentioned earlier, but they could also learn about such processes and forces as erosion, evaporation, gravity, and magnetism, and kinds of land formations such as peninsulas, mesas, deltas, and volcanoes.

### Type of reasoning

Casual Talk (CT) allows speakers in casual contexts to use informal reasoning, and to convey beliefs that do not need justification via careful logic. As such, vague relationships can abound [12], and alternative arguments are often not considered [63]. Information can be conveyed via an organization that is locally coherent, which allows the speaker to make associative shifts into related topics. This results in what has been referred to as a topic-associative narrative structure [13].

In the AT register, by contrast, reasoning that follows step-wise linear logic is valued, and speakers are called upon to consider alternative perspectives [64]. Academic Talk (AT) requires that information be conveyed via a logical organization that is globally coherent [65], which is sometimes referred to as a topic-centered narrative structure [13]. In other words, one is required to “stick to the topic.” It is well established that learning to produce such narratives is predictive of later reading comprehension and school success [66-70].

Young children’s nascent ability to produce coherent, logically sequenced, topic-centered narratives can be nurtured in a number of ways. First of all, questions posed and comments made while discussing books read aloud to young children can purposefully focus on the elements of story grammar that make Western culture stories logically cohere [71]. They are called a grammar because they extract the commonalities that occur across stories with very different specific content, such as the fact that most stories have a setting (they occur in a specific place & time, and happen to specific characters); an initiating event (the event, often a problem, that sets the story in motion); responses, plans, and various actions taken in response to the initiating event; reactions to those plans and actions; and finally, some kind of resolution. Ways to embed story grammar elements into story discussions have been examined elsewhere [72].

Children can also be asked to produce topic-centered narratives. For example, after a favorite book has been shared with a child a few times, the adult might ask the child to retell the story. This might initially best be accomplished by creating a somewhat realistic pragmatic need for the story to be retold. The examiner might have a stuffed animal that fell asleep as the adult read and discussed the story,

and then have the animal wake up and want to hear the child tell the story. Van Kleeck used a bear named By Myself Bear effectively to this end [73]. This bear was so named because he liked children to do things by themselves, without help from adults, and he “fell” asleep while the adult was sharing the story.

As discussed in the section on Degree of Support from the Context, past real life events can also be used to help children construct logically sequenced narratives. This might be supported with photos depicting the various steps or activities in the event. This could transition to activities in which the child did not participate, thereby increasing the demand of producing the narrative. In the discipline of speech-language pathology, sequencing cards have long been used for this purpose, although personally developed cards from photos the child took him or she would likely be much more motivating. Sequencing cards are a series of cards, each depicting one step in a logical sequence of events. So, for example, in following a recipe we might (a) look at all of the ingredients, and figure out which ones we already have at home, and which ones we need to go purchase at the market, (b) go to the market purchase those ingredients we don’t already, (c) gather our ingredients on the counter top and turn on the oven to heat up, (d) add and combine the ingredients in the order on the recipe(e) bake the cake, (f) let it cool, and (g) finally enjoy eating it! Many of these steps can also be broken down into a variety of sub-steps.

### Level of reasoning

People certainly engage in both lower and higher level reasoning in everyday contexts when using CT. Across time, higher-level thinking becomes more and more critical, and prevalent, in school and hence in the AT register. Scholars have discussed the need to engage children as young as preschool-age in higher-level thinking [72], and have found that doing so enhances their later language and literacy skills [28]. Higher-level thinking requires the use of inferential language.

Inferential language is often defined in part by distinguishing it from literal language. Language is considered literal when it focuses on information that is immediately available in either the physical or linguistic context. At the literal level, a child might name or describe an object in the room, a picture in a book that is being read to him or her, or repeat something that was just said to her or him. In contrast to literal language, inferential language involves going beyond what is directly given, either linguistically or non-linguistically. Examples would include such things as explaining, defining, justifying, predicting, summarizing, and providing examples. Talking about these processes is also fostering Tier II vocabulary (using the words explain, define, and so forth).

Earlier in this article, requests for verbal display of knowledge and thinking were discussed. These requests relate to the level of thinking. Requests to verbally display what the child already knows are quite often literal questions. In contrast, requests for a child to verbally display his or her thinking requires higher-level reasoning and the use of inferential language (e.g., who do you think this book might be about? when introducing a new picture book to read and discuss with the child). An example of a literal question would be to ask the child the color of the bear on the cover of the book.

Of course, books are certainly not the only context for engaging children in higher-level reasoning and asking questions is not the only way to foster higher-level thinking. Professionals working with young children can be using language reflecting higher-level thinking during everyday contexts that are going on in the nonlinguistic context, and



are encouraged to do so. While making a smoothie with milk with a young child, for example, one could ask the child to predict, "What do you think might happen if we forgot to put the top on the blender?" Another example might be to ask, "What color do you think the smoothie will turn out to be if we put blueberries in it?" This could be followed up with asking, "Why do you think so?" and then further followed up with, "What color do you think it would be if we instead just put a banana in it?"

Beyond the use of questions, the adult has an important role in modeling higher-level thinking, a strategy that has long been called a "think aloud" in literature on older children's reading comprehension [74]. In the Requests for Verbal Display section of this paper a suggestion was offered for how an adult might explain the protocol for answering verbal display of thinking questions in school. In doing so, the adult provided a model of how to think through making such a response. This description of the thought process one might go through in attempting to answer such a question is an example of a "think aloud." It allows the child to eavesdrop on how the adult would approach thinking through the information that would help in answering the question. "Think alouds" will also employ frequent use of modeling the level of confidence one has in the information being conveyed, which is discussed in a separate section.

### Use of "meta-" skills

The school context, and hence AT, abound with "meta-" skills that are basically nonexistent in the everyday CT register. A "meta-" orientation occurs whenever one engages in a conscious focus on either cognitive processes (e.g., remembering, comprehension, and learning) of on language or one of its components (e.g., phonology, morphology, grammar).

A child's budding conscious awareness of the phonological component language becomes of significant interest beginning in the late preschool years because of how important this awareness is to learning to break the code in learning to read an alphabetic script such as English. That is, the child needs to become aware that spoken words consist of individual sounds, and to eventually tie knowledge that alphabet letters represent these sounds within words. This has been an area of active intervention research for many years, with enough studies for there to be meta-analyses of them that provide strong support for effectiveness of teaching these skills [75,76]. Given both their prevalence in the literature and in educational practice, these interventions will not be discussed here.

In the process of learning to read, children are also learning meta-language vocabulary such as sound, letter, page, and word. Professionals should not assume children come to school with knowledge of this seemingly very basic vocabulary, and bet sure to teach it to children who do not already know it. As children learn to write, this vocabulary will also include words such as spelling, punctuation, and paragraph. As children move forward in reading, spelling, and vocabulary acquisition, their conscious knowledge of derivational morphology becomes increasingly important [77]. Learning the meaning of prefixes such as a-, dis-, en-, in-, and re- and suffixes such as -able, -ful, -en, -ify, -ize, and -ment will greatly expand a child's understanding of many root words. Here again, a meta-analysis of many studies demonstrates the positive impact of interventions that have been developed [78].

The "meta-" skills focused on such things as memory and comprehension are also important to model for young children. For

metamemory skills, for example, after sharing the book *Mooncake* with a child at least once, the adult might ask, "Do you remember that this story is about?" The adult could also ask, "What might help us remember the story? Maybe if we look at the pictures, it will help us remember?"

As mentioned in the section on the degree of support from the context, modeling the use of language referring to mental states can also foster a metacognitive orientation [15,79,80]. Degotardi and Torr categorized mental state into those focused on beliefs (knowing, thinking and other symbolic activities such as pretending) and those focused on non-beliefs (perceptions, desires, and emotions). Some examples of these various categories include beliefs (guess, know, pretend, think, remember, wonder), desires (dream, hope, like, need, want, wish), perception (hear, look, see, show, watch), and emotions (worry, thrill). These kinds of terms overlap with those in the next section on the Degree of Confidence in Information Conveyed. These terms share common ground with research on theory of mind (the ability to attribute mental states to oneself and others and to know that the intentions, beliefs and desires of others are different from one's own) which has been linked to later reading comprehension [81,82]. Research has shown that children's story books contain a high rate of reference to mental states, so they provide an activity for exposing children to an understanding of mind [83].

Another important "meta-" skill is metacomprehension. It involves monitoring one's own comprehension so that you know when you know, or perhaps more importantly, you know when you do not know. Although such comprehensions monitoring has rarely been studied in preschoolers, research nonetheless shows that children as young as preschool-aged are capable of engaging in it [84,85]. One idea for fostering metacomprehension in young children is to build on the formal versus informal language game that was suggested earlier. The child could be asked to listen for "fancy" words in a story read aloud to him or her, and to hold up the picture of the bear in the fancy clothes when one is detected. A discussion of the meaning of the word, especially by comparing it to a synonym that is not as fancy, could ensue.

### Degree of confidence in information conveyed

Aligning with the idea expressed earlier that CT allows informal reasoning, and speakers are not required to provided justification via careful, it is also true that less accountability is required in terms of explicitly stating one's degree of confidence in the information being conveyed. The opposite is true in AT, and one is eventually obligated to express the credibility of information conveyed [6]. Professionals working with young children can foster this orientation by being sure to model their own degree of confidence in information they are providing.

This will often involve expressions of degree of certainty, possibility, or probability. One might do this by using adverbs such as probably, definitely, or maybe; modal auxiliaries with verbs such as could or might; verbs such as know, guess, suppose, or believe; nouns such as guess or possibility; or adjectives such as positive, likely or definitely. Phrases can also sometimes express this degree of confidence, including such things as fairly certain, pretty sure, remains to be seen, I could be wrong but, and so forth. These expressions belong to a category often referred to as expressions of mental state, which in a sense are a type of decontextualized language, because one cannot see mental states. This topic, as the last, overlaps with the theory of mind construct that has been widely studied.

The “think alouds” provided by adults to young children that were mentioned earlier should abound with words containing such expressions. So when earlier discussing how to model responding to requests for verbal display of thinking, the following was suggested, but this time, the expressions reflecting the adult’s degree of confidence in the information are bolded. “I **wonder** who this book is going to be about. I haven’t read this book before, so I **don’t know for sure** who it is about. But I can use **hints** from the cover to **guess** who

the book **might** be about. There is a picture of a bear and a bird on the cover, so **maybe** the book is about the bird or the bear, or maybe about both. But, I’d have to read the book to find out if I made a good **guess** or not.”

The numerous ways in which the cognitive features of the AT register might be fostered that were discussed in this section are summarized in Figure 2.

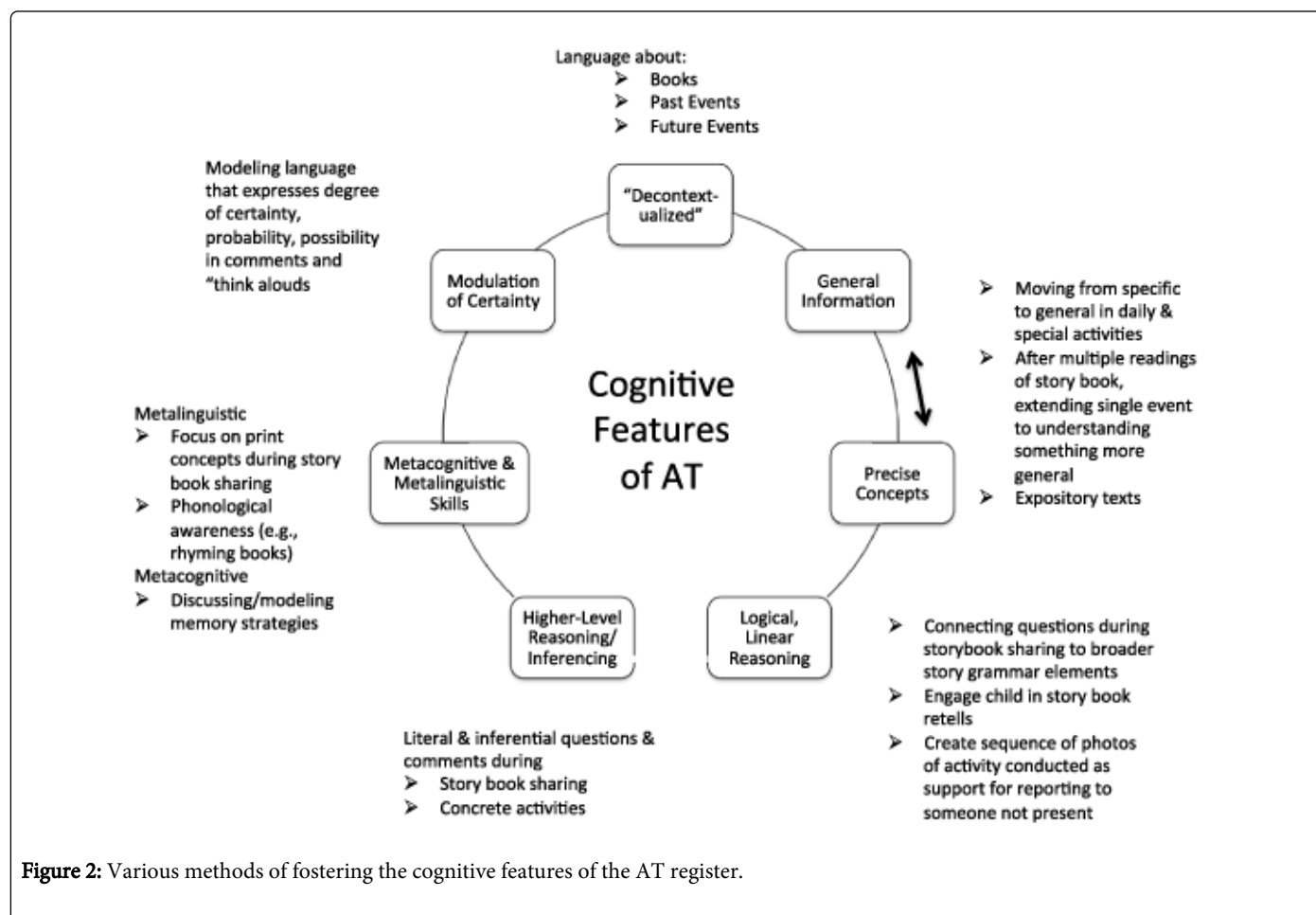


Figure 2: Various methods of fostering the cognitive features of the AT register.

### Making AT Easier or Harder: Managing the Number of Features of AT in an Activity

As professionals gradually introduce the AT register to children who have not had much home experience with it, they can use the van Kleeck [2] framework presented in this article to consciously manipulate the number of features of AT targeted in any particular activity. So, for example, when initially supporting a child in using inferential language, the professional could do so regarding an activity that is ongoing in the physical context, and as such has contextual support (the example with the smoothie given earlier would be of this nature). To add more challenge, a child could be supported in answering an inferential question about a specific character in a story (e.g., what do you think the Bear might try to do with that bow and arrow?). Gradually, one would move to using inference regarding general information. Asking inferential questions while sharing the information or expository books about migration mentioned earlier would be at this level of generality.

These manipulations to create harder and easier tasks could work with any of the features discussed in this article. Initially, the professional might want to keep most of the features more characteristic of what they would be in the CT register, while using only one feature in a manner characteristic of the AT register. Eventually, many features of the AT register could be employed at the same time. One could ask an inferential (e.g., higher level reasoning) question (requesting verbal display) about something in a book (decontextualized) that is focused on and aspect of story grammar (logical, linear reasoning regarding story structure) and involves think alouds when the adult offers a suggested response (modeling modulation of certainty). As another example, one could have a child engage in retelling (logical, linear reasoning) information learned from an information or expository book (general information; decontextualized) that discussed migration (a precise concept).

## Conclusions

Professionals working with preschool and kindergarten children with language impairment and/or with low parent education levels can be playful in approaching the introduction of a number of social-interactive and cognitive features of the academic talk register. This article offered a plethora of specific ideas regarding how this might be accomplished. Furthermore, the framework can be used to initially target various features individually, and then gradually increasing the level of challenge by targeting two or more features simultaneously.

Although research exists on the importance of several of the individual features of AT discussed here to later reading comprehension and/or academic success more broadly, future research is needed to confirm the efficacy of targeting numerous co-occurring features of the AT simultaneously to foster later reading comprehension. Researchers should also focus on the feasibility of teaching the AT register to parents and teachers who may be less familiar with it or less inclined to use it. The long term impact of changing the language patterns of the adults who interact with them on the children's language and academic outcomes would also be important to determine.

## Financial Support Acknowledgement

Partial support for this work was provided by the Callier Research Scholar fund, provided to the author by the University of Texas at Dallas.

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