

Assessing Expository Discourse Abilities Across Elementary, Middle, and High School

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For academic success, it is increasingly important that students of all ages can produce and comprehend expository discourse. This article provides guidance to clinicians and educators on using language sample analysis (LSA) to assess the expository language abilities of students across grades. Focusing on microstructural and macrostructural characteristics and comparing with grade-level standards, clinicians can use LSA to assess a student's production and comprehension of academic language and to guide intervention planning. Example discourse samples are included, along with a brief discussion of how the LSA results for these samples can be used for intervention planning. Using curriculum-based materials, LSA in expository contexts can lead to improved identification of students who struggle with the complex language of the classroom. Educator–clinician collaboration to identify and address these struggles can lead to improved student success at school and beyond. **Key words:** *adolescents, children, Common Core State Standards, discourse, expository, language sample analysis*

THE COMMON CORE STATE STANDARDS (CCSS) were launched in 2010 with the goal of establishing a consistent set of academic standards to guide education within American public schools across all grade levels (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). At the time of this publication, the CCSS are active in 41 states and the District of Columbia. Relevant to clinicians and educators who work with school-

age individuals, the CCSS promote advanced language and literacy skills across all grades and all tiers of the Response to Intervention (RtI) framework portion of a Multi-Tiered System of Supports (MTSS) that might be implemented at the school or district level.

With the development of the CCSS, one prominent change to English Language Arts standards involves the increasing emphasis on nonfiction texts in the curriculum. The English Language Arts standards of the CCSS recognize that students must be able to read and comprehend a broad range of increasingly challenging nonfiction and fiction texts as a foundation for college and career readiness. Expository discourse is the genre students encounter when reading nonfiction texts or watching documentaries, for example. Although students must demonstrate proficiency in reading and writing narrative, expository, and persuasive texts, the CCSS require a student to be proficient in speaking and listening within these different genres (National Governors Association Center

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for Best Practices & Council of Chief State School Officers, 2010). In expository contexts, students may be required to write a report describing the life of a historical figure or give a presentation proposing and explaining possible solutions for climate change; therefore, students must understand how expository discourse differs from the familiar discourse of narrative storytelling and persuasive discourse.

As early as kindergarten, students are expected to use drawing, verbal explanation, and writing to compose nonfiction passages in which they name the topic about which they are communicating and supply some factual information about the topic. As an example, a kindergartner produced an expository “book” about bees toward the end of the academic year. One page of the book states (spelling and capitalization as produced by the student): “The sitge **stinger** prtese the Bee fame Pretos.” (The strong stinger protects the bee from predators.) The author highlights important vocabulary (*stinger*) using a different color pencil and illustrates this specific vocabulary with a close-up drawing. In addition, appropriate use of the word “predators” indicates that the author understands the relationship between a bee’s stinger and other animals who might want to do the bee harm and how to refer to this relationship using more sophisticated vocabulary. Although the young author probably received guidance to complete this exercise, this example illustrates how kindergarten instructors explicitly begin to teach expository-specific text characteristics, consistent with the CCSS.

A student’s ability to produce and comprehend expository passages becomes increasingly important as he or she progresses through his or her educational career. The CCSS aim to shift the ratio of expository and fictional texts from 50:50 in elementary school to 60:40 in middle school and 75:25 in high school (Roseberry-McKibbin, 2015). Thus, to ensure academic success, teachers must explicitly teach the features that distinguish exposition from other discourse

genres and students must have the underlying language and cognitive skills to produce and comprehend expository discourse as they progress through school. Foundational cognitive communication skills will be particularly crucial for later success as students move into middle and high schools and their interaction with expository discourse increases. This article seeks to improve school professionals’ understanding of how to assess the oral and written expository language production and comprehension of students across grade levels using language sample analysis (LSA) specifically.

IDENTIFYING STUDENTS WHO STRUGGLE WITH EXPOSITORY DISCOURSE

Expository discourse places different cognitive and language demands on students than does typical narrative or conversational discourse (Nippold & Scott, 2010; Snyder & Caccamise, 2010). For students with typical development, the reciprocal relationship between oral and written language means that growth in one modality is usually associated with growth in the other (Shanahan, 2006). Similarly, students who have difficulties with syntax, vocabulary, and/or morphology in one modality often struggle in the other modality (Joffe & Nippold, 2012). Students who experience language and learning problems or disabilities may not have the foundational skills or knowledge to keep pace with the expanding use of expository materials in their classrooms. As a further challenge, students who struggle with the language of the curriculum may not be identified as language impaired, because norm-referenced tests do not adequately assess a student’s ability to produce or comprehend expository discourse (Joffe & Black, 2012; Scott, 2010). As young children with language weaknesses enter adolescence and later adulthood, they exhibit persistent challenges with vocabulary and literacy (that may be compounded by the spiraling demands of

expository discourse in later grades) and attain less social, emotional, and vocational success than their peers with typically developing language abilities (Conti-Ramsden & Durkin, 2008, 2012; Lindsay & Dockrell, 2012). Therefore, it is essential that educators and clinicians identify students who struggle with language difficulties generally and expository tasks specifically as early as possible so that appropriate intervention is provided to improve their chances of academic and later vocational success.

Standardized and norm-referenced assessments

The changes in curriculum standards put forward by the CCSS make it imperative to pay attention to the expository discourse abilities of all students. If a student is not able to comprehend or produce expository passages effectively, it will be very difficult for that student to be successful in school. Unfortunately, educators and clinicians have minimal evidence-based guidance to help determine whether a student is able to competently produce and comprehend expository discourse in particular.

Currently, very few norm-referenced tests of language production or comprehension include an evaluation of expository discourse abilities (Scott, 2010). As an example, included passages in the Understanding Spoken Paragraphs subtest of the Clinical Evaluation of Language Fundamentals-5 (CELF-5; Wiig, Semel, & Secord, 2013) are primarily narrative in structure. Only one of four passages used to assess an adolescent's ability to answer questions about material read aloud to him or her is expository in nature, and this is only for students who are between the ages of 13 and 21 years. Thus, on this subtest, 75% of paragraphs read to high school students are narrative in structure, flipping the ratio expected in the CCSS, which recommends 75% of text exposure to be expository. For tools such as the Expository Scoring Scheme included in the Systematic Analysis of Language Transcripts (SALT; Miller

& Iglesias, 2010), only one type of expository structure (procedural) is available to allow comparison with a student's discourse sample despite the fact that expository discourse has many other types of structures that are more commonly encountered in the curriculum (e.g., cause-effect, compare-contrast, descriptive/enumerative). Studies that have examined expository production in children with typical development and those with language learning disorders (e.g., Heilmann & Malone, 2014; Nippold, Hesketh, Duthie, & Mansfield, 2005; Nippold, Mansfield, Billow, & Tomblin, 2008; Scott & Windsor, 2000) may serve as a criterion reference upon which to compare a student's discourse abilities, though limitations exist if the student is not assessed using the same elicitation procedure. Thus, it remains difficult for educators and clinicians to determine which students might benefit from support in this form of discourse.

Language sample analysis

Language sample analysis is a tool that could make an important contribution to the assessment of expository discourse. It has greater ecological validity than standardized testing because it allows a professional to examine a student's actual language use in a connected discourse sample that is relevant to the curriculum (Nippold, 2014b). Unfortunately, current research indicates that LSA is underutilized by school clinicians. In a survey of 847 school-based speech-language pathologists (SLPs), 56% of respondents reported analyzing between zero and 10 language samples during the 2012–2013 school year (Pavelko, Owens, Ireland, & Hahs-Vaughn, 2016). Across all age and grade groupings (birth to high school), SLPs reported soliciting language samples most frequently during conversational tasks and least often during expository discourse contexts. More concerning, SLPs working with high school students were no more likely to collect expository language samples than those working in preschool, elementary, or middle school

settings (Pavelko et al., 2016). The high reported rate of conversation and picture description elicitation tasks for students in middle and high schools raises concerns about whether students are being engaged in discourse tasks that push them to use their most complex language abilities. Educators and clinicians must be strategic with the types of language samples they elicit and analyze, and if expository discourse is not included, they may miss the opportunity to identify students who struggle to produce or comprehend the language of the classroom.

Language sample analysis addresses other weaknesses inherent to standardized testing. Although helpful in identifying breakdown in language form and content, standardized tests often do not fully characterize a student's difficulties in oral and written discourse in a manner that is relevant to the academic curriculum. Furthermore, standardized tests do not support frequent progress monitoring for intervention planning (Power-deFur & Flynn, 2012; Price & Jackson, 2015). Written and oral LSA, on the other hand, allow clinicians to assess aspects of expository discourse production and comprehension using criterion-based measures. An SLP, for example, can collect expository language samples as often as needed to monitor progress. Using classroom materials as stimuli for expressive expository samples or as content to assess informational comprehension is consistent with principles of curriculum-based language assessment (and intervention; Nelson, 2005; Nelson & Van Meter, 2002), where, for example, the SLP is focused on determining whether the student has the language skills necessary to learn the curriculum. Nelson (2005) recommends using actual materials from the curriculum to ask the following: "(1) What does the curricular task require? (2) What does the student currently do when attempting to perform the task independently? (3) What might the student learn to do differently? and (4) How should the task be modified or mediated to enhance the likelihood of future success?" (p. 327). Working together, an educator and a clinician could

answer all of the aforementioned questions by assessing a student's discourse abilities in expository contexts.

ASSESSING EXPOSITORY LANGUAGE

In the current educational system, even if a school's student learning standards are not aligned with the CCSS, it is imperative that educators and clinicians are aware of the important role expository discourse comprehension and production, and the evaluation of each, plays in the academic careers of students. Specifics of evidence-based collection procedures are not addressed here, as they have been covered elsewhere (e.g., Miller, Andriacchi, & Nockerts, 2016; Pavelko et al., 2016; Price & Jackson, 2015) and are beyond the scope of this article.

Clinicians can assess both the microstructure and macrostructure of a student's expository passage using LSA (Price & Jackson, 2015). Microstructural analyses typically examine variables such as productivity, syntactic complexity, grammatical accuracy, and, as appropriate, writing mechanics (e.g., spelling, capitalization). Macrostructural analyses consider the audience, purpose, and overall gist of the written or verbal sample. This article focuses on manual techniques for assessing expository discourse, but it is important to note that there are several computer-aided techniques (e.g., SALT, Child Language Analysis [CLAN], Coh-Metrix) that may be useful to clinicians who have access to these tools and prefer the specifics of these analyses. Price and Jackson (2015) summarize ways to utilize manual coding and computer programs to analyze some of the variables discussed in this article. Although their tutorial focuses on writing, recommendations can be extended to oral productions.

Eliciting expository language samples

Educators or clinicians can elicit an oral or written expository discourse sample from a student by referring to the CCSS for a particular grade level and identifying tasks that

are relevant to the student's specific curriculum. Although verbal/written prompts (e.g., "Tell me how to play your favorite game" and "Give your thoughts on the topic of conflict between people") and retelling tasks are the most commonly reported methods of eliciting a discourse sample from a student (e.g., Berman & Nir-Sagiv, 2007; Heilmann & Malone, 2014; Nippold, Mansfield, & Billow, 2007), summarizing is an additional elicitation method that educators and clinicians should consider. Lundine, Harnish, McCauley, Blackett et al. (2018) proposed that summarizing allows for the assessment of a student's ability to "use an appropriate organizational structure, inhibit irrelevant details, and manipulate newly learned information within the working memory system to combine more specific facts under more general categories" (p. 554). In addition, in many academic tasks, students do not retell information verbatim but rather they must integrate newly learned information with previous knowledge to demonstrate a growing understanding of a given topic. Importantly, summarizing also offers a means of assessing how well a student comprehends the vocabulary and idea propositions within a passage. To elicit an expository passage, a clinician could ask a student to read a section from a textbook and then summarize the material in his or her own words (either orally or in writing). Alternatively, the clinician could examine a piece of expository writing the student produced for a class assignment, as long as the conditions during which the written text was produced are known.

Vocabulary

A strong vocabulary is an essential foundation for comprehension, reading fluency, written expression, and overall academic achievement (e.g., Quinn, Wagner, Petscher, & Lopez, 2015; Rowe, Raudenbush, & Goldin-Meadow, 2012). Verbal and written expository passages often include low-frequency vocabulary that relate to abstract or unfamiliar concepts (Nippold, 2014a; Snyder & Caccamise, 2010). To promote success of a

student in the classroom, it is essential that educators and clinicians can assess a student's expressive and receptive vocabulary used in relevant academic activities so that intervention is provided when necessary. The CCSS suggest a focus on general academic and domain-specific words and phrases appropriate to each student's grade level, roughly equivalent to words categorized as Tier 2 and Tier 3 vocabulary in the three-tier hierarchy described by Beck, McKeown, and Kucan (2008, 2013). Tier 2 vocabulary represents a more sophisticated and precise way of saying something the child already understands (e.g., "ancient" is a more precise way of saying "really old"). Tier 2 verbs such as "hypothesize," "discuss," "analyze," "evaluate," and "calculate" or adjectives such as "antique," "novel," "unique," "brilliant," and "devastated" would be general academic terms used across disciplines. Tier 3 vocabulary represents more domain-specific terminology that may have limited usage outside a given discipline. For example, "evaporation" and "precipitation" are vocabulary words a student may encounter in science class when learning about the water cycle, but these terms are not common to other academic subjects.

When a student produces a verbal or written expository passage, a clinician can evaluate the student's use of vocabulary appropriate to the topic and student's grade level. Does the student use any Tier 2 or 3 vocabulary? If not, what Tier 1 words could be replaced with more sophisticated Tier 2 vocabulary if the student were given explicit instruction? Can the student note words within the passage that are most relevant to the information presented? Does the student's use of key vocabulary indicate appropriate understanding of the terminology or is it simply a verbatim, nonanalytic repetition of what the student heard or read? Can the student use the vocabulary in another context or clearly define the term using examples? Analyzing the vocabulary that a student uses in an expository language sample will help identify whether the student might benefit from explicit vocabulary instruction (e.g., Beck et al.,

2008, 2013; Murza, Malani, & Hahs-Vaughn, 2014).

Morphology

Morphemes are the smallest meaningful units of language. Free morphemes are those units of language that can stand alone and cannot be divided into smaller units of meaning (e.g., *dog*, *sad*, *is*). Bound morphemes are prefixes (e.g., *hyper-*, *un-*, *pre-*) and suffixes (e.g., *-s*, *-ing*, *-ment*, *-tion*) that cannot stand alone but can be added to free morphemes to modify the meaning of the root word, its syntactic function, or both (Nippold & Sun, 2008). A student's awareness of and ability to use morphological markers appropriately significantly contribute to his or her literacy success (Jarmulowicz, Taran, & Hay, 2007; Wolter & Pike, 2015). Expository discourse tends to contain more morphologically complex words than other discourse genres (Nagy & Townsend, 2012), reinforcing the importance of mastery for students.

Nominalization is one morphological feature common to expository discourse that contributes to making it more complex for students to produce and comprehend than narrative and conversational discourse (Scott & Balthazar, 2010). Nominalization is a process by which a noun is formed when a derivational morpheme is added to a commonly used verb or adjective. Derivational morphemes are prefixes and suffixes that change word class (Owens, 2016). For example, the verb "agree" becomes a noun when the suffix *-ment* is added ("agreement") or the adjective "important" becomes a noun when the suffix *-ant* is changed to *-ance* ("importance"). As students develop more sophisticated language use and comprehension across grade levels, they must know the meaning behind commonly used prefixes and suffixes and how the addition, modification, or removal of these bound morphemes changes the root word. Students should demonstrate the ability to use more morphologically complex words during expository discourse production and comprehend the use of these forms during listening

and reading. Understanding and use of these morphemes expand a student's vocabulary and add cohesion to a discourse sample, as lexical items link sentences together. For example, a student may use the verb "pollute" in a topic sentence, connecting that idea to subsequent sentences using the noun "pollution" or the adjective "polluting." Speech-language pathologists should expect morphological growth across the school-age years and be able to determine when a student is struggling with this aspect of discourse production or comprehension.

When assessing a student's expository discourse, the SLP should consider how the student is able to use different prefixes and suffixes to modify vocabulary (e.g., "evaporate" → "evaporation"; "reduce" → "reduction"). Once a topic is introduced, the student should be able to use appropriate morphological markings throughout the language sample to assist in connecting one sentence to the next. For example, in a discussion about the water cycle, a student might say or write the following: "Heat from the sun helps water *evaporate* from the lake, turning it into a gas or vapor. This *evaporation* enters the atmosphere and returns to the earth as rain." Use of the nominalized word "evaporation" helps connect the second sentence to the verb in the first sentence and indicates that the student comprehends the manner in which the suffix *-tion* changes a verb into a noun. Analyzing the morphological markers a student includes in an expository passage, or whether the student is able to differentiate the meaning between root words with different prefixes and suffixes (e.g., "adapt" vs. "adaptation" or "maladapted"), can help establish whether a student might benefit from specific intervention related to morphology.

Syntax

Earlier research on expository discourse found that students produced sentences with greater syntactic complexity in expository contexts than conversation and narrative, in both oral (Nippold et al., 2008; Scott & Windsor, 2000) and written (Berman &

Nir-Sagiv, 2007; Scott & Windsor, 2000) modalities. But recent studies have found that syntactic complexity may vary on the basis of the elicitation method (e.g., retelling vs. summary), the structural type of expository text produced (e.g., compare-contrast vs. cause-effect), and the measure of syntactic complexity employed (e.g., mean length of utterance vs. clause density; see, for example, Lundine & Barron, 2019; Lundine, Harnish, McCauley, Blackett et al., 2018). As students advance to higher grades, the CCSS expect that seventh-grade students can write simple, complex, compound, and compound-complex sentences and that 9th- and 10th-grade students can use varied sentence structures to create cohesion among different sections of written text (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). As Scott (2010) explains, when assessing the syntactic complexity of a discourse sample, the following sentence-level components

should be evaluated: (1) noun and verb phrases; (2) types and order of clausal elements (e.g., subject-verb-object); and (3) clause combinations within complex sentences.

Consistent with the idea that students are learning to produce more complex sentences in oral and then written forms, educators and clinicians should expect the syntactic complexity of expository productions to increase over the school-age years (Nippold et al., 2007). With increasingly complex sentences, students should also be producing different types of clauses within their sentences (nominal and adverbial, followed by relative; Nippold et al., 2005). Table 1 shows verbal summaries produced by first-, third-, and sixth-grade students after they viewed a cause-effect expository presentation about an imaginary country. The growth in sentence complexity is evident across these three examples. The first-grade student primarily produced simple sentences, and one

Table 1. Examples of a verbal cause-effect summary (based on a lecture about an imaginary country named “Malka”) produced by students with typical development

Cause-effect lecture: Main idea—Malka was more advanced than other countries in the 1500s. The lecture presents three main causative relationships describing how the advancements in Malka in three important areas (roads, education, and health care) made life better than in other countries.

Summary from a 7-year-old, first-grade student

Malkians had the best healthcare. There was a lot of roads. Malkians traveled a lot because of the roads, and they washed their hands. Malkians went to school up to eighth grade. They learned to read and write.

Summary from an 8-year-old, third-grade student

Malka was found by a explorer. He discovered the island. And they brought fresh produce to the north from the south, and people used the fresh produce. They washed them. And also doctors used to help kids that needed help. And Malkians had a lot of fresh produce like the fruit and vegetables I talked about, and so they needed that to survive. And a lot of Malkians sometimes got hurt, and only womens helped them because they were trained.

Summary from an 11-year-old, sixth-grade student

Malka was a very up to date country. Other explorers who came to visit Malka were very surprised at what they had. They had roads which made it very easy to travel and to have food come and go, and they had transportation for roads. They were on the coast, so seafood swept up on to shores. And the kids all knew how to write, read, and spell, because they were required to go to school until eighth grade. And all the adults were going to a science and technology class every three years to keep them up to date, and so they could learn new ways to improve their country.

Note. Mazes and incomplete/unanalyzed utterances removed for the purposes of these examples. (From an unpublished study by Lundine.)

instance of a compound sentence using earlier developing conjunctions “and” and “because.” The sixth-grade student, on the other hand, used mostly complex sentences with different types of clauses, including all three of the major types of subordinate clauses (relative, adverbial, and object complements).

As students enter the later grades, they should be able to produce sentences of varied structure and length in verbal and written expository passages. It should not be surprising if a student in the first grade produces only simple sentences with little to no clausal embedding, but this should be a red flag for students in late elementary grades, and especially for students in middle or high school. In addition, students must be able to comprehend the complex sentences common to expository texts, keeping appropriate track of referents and modifiers so that they correctly comprehend the information conveyed in the text. Asking students questions about the material covered in a text could help reveal difficulties resulting from poor comprehension of complex syntactical structures, especially if the student demonstrates appropriate comprehension of the vocabulary within the text. Not only should students produce sentences with increased complexity and variety over the school-age years, but also correct application of grammatical rules is necessary, especially in written passages. As a measure of assessment (or progress during intervention), a passage might be scored on the basis of the number of grammatical errors present in a passage or the percentage of utterances that are grammatically correct. Alternatively, a passage could be assessed using a measure of syntactic complexity, such as mean length of utterance in words or the subordination index, to determine the average number of words per utterance and the average number of clauses per utterance (i.e., independent + accompanying dependent clauses), respectively.

Discourse-level characteristics

Language sample analysis allows for the evaluation of the discourse-level macrostruc-

ture of a passage in a way that other types of assessments that examine only word- or sentence-level language features do not. Expository discourse should present a logical arrangement of facts or information. This is contrary to typical narrative structure, which proceeds chronologically (Mandler & Johnson, 1977). The organizational structure of an expository passage varies on the basis of the purpose of the passage. The most commonly discussed types of exposition are descriptive, procedural, enumerative, cause-effect, compare-contrast, and problem-solution (Nippold & Scott, 2010). A student's recognition of these different structures can improve comprehension of the material (Montgomery, 2013), so it is important that students can identify the global purpose of a verbal or written expository sample. Furthermore, recognition of these different structures is essential for competent production of both oral and written expository discourse. For example, if a student writes to explain the steps of a certain process, such as photosynthesis, he or she must understand the structure of a procedural expository passage. Likewise, the student must understand how to properly structure a compare-contrast writing sample if the assignment requires comparing and contrasting mammals that live on the grassy plains and those that live in the forest. A student's ability to produce one type of expository structure (e.g., cause-effect) cannot be assumed to indicate competent performance with another type of expository structure (e.g., problem-solution). Similarly, a student's ability to comprehend one type of expository structure does not indicate successful comprehension of a different one. Although this may seem to make the process of assessment appear more cumbersome, it is crucial that educators and clinicians understand the multiple structural layers within the expository discourse genre. Then, identifying the specific types of curricular tasks and associated text structures with which a student is struggling can help determine where intervention might be necessary.

Certain types of exposition are more common to one discipline than to another (see Fang, 2012; Ward-Lonergan & Duthie, 2013, for example). Thus, students challenged by a specific discipline may be struggling to produce or comprehend the associated expository structures necessary to communicate adequately in that discipline. There is now sufficient evidence to indicate that educators and clinicians should consider each of these different types of exposition as distinct (Lundine, Harnish, McCauley, Blackett et al., 2018; Lundine, Harnish, McCauley, Zezinka et al., 2018; Nippold et al., 2007; Ward-Lonergan, Liles, & Anderson, 1999). Although we need to understand better if there are unique language or cognitive requirements for each type of exposition, it should not be surprising if a student is able to produce a compare-contrast text but struggles with a different type of exposition. Educators and clinicians should not limit assessments to one specific structure but should examine a student's ability to produce multiple-text structures that are needed to succeed in the grade-appropriate curriculum (see the grade-specific CCSS that stipulate introduction of different types of exposition at different grades).

As students grow older, their ability to organize expository discourse should improve. Initially, students in early elementary school arrange sentences more like a list, using few (if any) cohesive tools (i.e., lexical cohesion, conjunction, or ellipsis; see Scott, 2005, 2010). But as students become more sophisticated in their language comprehension and production, they are better able to structure their expository discourse according to the appropriate purpose. Students must use the appropriate lexical markers that help indicate the purpose of their discourse (e.g., "as a result," "because," "therefore," and "in order to" are common terms indicating cause-effect). Eventually, the most competent language users are able to concisely state the main thesis of their exposition and provide the appropriate supporting details to relay the necessary information to their listener

or reader. Similarly, across the school years, students must learn how to identify the main points within a passage and incorporate those facts into their prior knowledge to expand their learning. Graphic organizers not only are often used as an intervention tool for students of all ages in many academic domains and with many academic tasks (Culatta, Hall-Kenyon, & Black, 2010; Westby, Culatta, Lawrence, & Hall-Kenyon, 2010) but also can be used to assess a student's ability to map ideas from an expository passage onto the associated text structure. Then, students who struggle in oral and written exposition can be taught to use graphic organizers to assist with oral or written project demands.

Discourse research often examines productivity, or the amount of language in a sample (measured in words, utterances, or sentences), as a means to assess discourse production and fluency. In addition to or as an alternative to commonly used productivity measures, clinicians should consider assessing the content included in a passage as a means to examine the macrostructural characteristics of the discourse produced. Although children with developmental language delays often produce significantly fewer utterances in a discourse sample than children with typical language development (e.g., Scott & Windsor, 2000), findings have not been consistent in populations with more subtle discourse difficulties, such as those with traumatic brain injury (Lundine & Barron, 2019; Lundine, Harnish, McCauley, Zezinka et al., 2018). As discourse research includes more work in the expository genre, the mixed productivity results across populations indicate that simply counting the number of language units in a passage may not be a meaningful measure. In addition, it is likely impossible to establish age-based norms for productivity, given the confounds related to how the discourse is elicited (i.e., spontaneous generation following a prompt, retell, picture description, summary) and each student's background knowledge and level of interest in a given topic (Best, Floyd, &

McNamara, 2008; Nippold, 2009; Wolfe & Woodwyk, 2010).

Rather, the important question is whether the amount and quality of the language produced are sufficient to achieve the goal of the exposition. As students become better writers and speakers, their language should become more precise and succinct. Thus, *more language* may not always be *better*. As discussed previously, older students should use more sophisticated vocabulary, advanced morphological markers, and complex and varied sentence structures to express their ideas. But this does not mean that they should necessarily be producing more words or sentences to express those ideas. For example, a student's oral or written expository sample could be assessed on the basis of the total number of key points expressed

(e.g., Puranik, Lombardino, & Altmann, 2008) or the inclusion of main idea and key details (e.g., Spigel & Delaney, 2016; Wolfe & Mienko, 2007). Holistic scoring rubrics are often used in academic settings (Koutsoftas & Gray, 2012; Westby et al., 2010) and can aid in assessing all levels of a student's discourse, including genre-specific macrostructural components and content (Hall-Mills & Apel, 2013; Lundine, Harnish, McCauley, Blackett et al., 2018).

Examples of discourse assessment using LSA

Tables 2 and 3 provide examples of summaries produced by two 12th-grade students after they listened to a brief expository lecture with cause-effect structure (further described in Lundine, Harnish, McCauley,

Table 2. Example and assessment of a verbal cause-effect summary (based on a lecture about an imaginary country named Lifeland) produced by an 18-year-old, female, 12th grader with typical language development

<p><i>Cause-effect lecture:</i> Main idea—Lifeland led the world in inventions during the 600–700s. The lecture presents four main causative relationships describing how the inventions in Lifeland affected other nations in four important areas: early inventions, shipbuilding, written language, and architecture.</p>
<p>Summary from an 18-year-old female with typical development</p> <p>Lifeland is this ancient society and they were very advanced for the time. They have a lot of really advanced inventions, and, as a result, they were very admired by other societies. They did a lot of traveling, like trading by the sea, and other societies were always really excited for them to come. One of the most important things was that they had a written language which has probably influenced written languages today. So, they were admired then and they're still admired now today. People still go visit the ruins of Lifeland. As well as being advanced in language and inventions, they were also advanced in their architecture. So they had these pyramids that were really elaborate, that are still standing today, that people visit.</p>
<p>Discourse assessment</p> <p><i>Vocabulary:</i> Uses many Tier 2 vocabulary words (ancient, society, advanced, admired, influenced, ruins, inventions, architecture, elaborate)</p> <p><i>Morphology:</i> Nominalization (traveling, trading)</p> <p><i>Syntax:</i> Several sentences that include multiple clauses and reflect complex syntax. Analyzed utterances = 12; mean length of utterance in words = 10.6; clause density = 1.4.</p> <p><i>Text-level characteristics:</i> Markers of cause-effect structure included (e.g., as a result, which has, so); captures main idea ("... they were very advanced for the time"), with at least three of the four main causative details included (and a reference to trading by sea); includes cohesive markers ("As well as being advanced in language and inventions...").</p>

Note. Mazes and incomplete/unanalyzed utterances removed for the purposes of this example. (From a study described in Lundine, Harnish, McCauley, Blackett et al., 2018; Lundine, Harnish, McCauley, Zezinka et al., 2018.)

Table 3. Example and assessment of a verbal cause–effect summary (based on a lecture about an imaginary country named Lifeland) produced by an 18-year-old, female, 12th grader who had experienced a traumatic brain injury four years prior

Cause–effect lecture: Main idea—Lifeland led the world in inventions during the 600-700s. The lecture presents four main causative relationships describing how the inventions in Lifeland affected other nations in four important areas: early inventions, shipbuilding, written language, and architecture.

Summary from an 18-year-old female with traumatic brain injury

The story was about a summary or that a young woman made. It was about the sun and everything like that, about more like the weather and telling about how they used the strings and everything. She was telling a lot about how the strings hooked on to what and why and where was what she was really telling me.

Discourse assessment

Vocabulary: No Tier 2 vocabulary used. Vague, nonspecific language (e.g., “and everything like that,” “strings and everything”). Nonspecific pronoun usage (“they used the strings”).

Morphology: Lack of age-appropriate morphological markers.

Syntax: Two utterances include multiple clauses but do not reflect complex usage. Analyzed utterances = 5; mean length of utterance in words = 12.2; clause density = 1.4.

Text-level characteristics: Lacks identification of main idea and all important details; includes incorrect details not discussed in the passage; does not reflect cause–effect structure; lacks cohesion.

Note. Mazes and incomplete/unanalyzed utterances removed for the purposes of this example. (From a study described in Lundine, Harnish, McCauley, Blackett et al., 2018; Lundine, Harnish, McCauley, Zezinka et al., 2018.)

Blackett et al., 2018; Lundine, Harnish, McCauley, Zezinka et al., 2018). One student (Table 2) had typically developing language and cognition, whereas the other (Table 3) experienced a traumatic brain injury 4 years before participating in the research study. It is important to note that these samples were collected as part of a research protocol, and students only listened to the lecture one time before being asked to summarize it. Because these were verbal summaries, students did not have the opportunity to review their summaries for grammatical errors or to make any modifications. Each of the major categories discussed earlier is briefly assessed for the two summaries.

The student with typical development uses many Tier 2 vocabulary words (e.g., “ancient,” “society,” “advanced”) and demonstrates appropriate use of nominalization (i.e., “traveling,” “trading”). She also uses other morphological markers appropriately. The student includes several types of clauses in her sentences, and her sentences demon-

strate accurate use of compound and complex sentence structure. She includes markers of cause–effect text structure, including words/phrases such as “as a result,” “which has,” and “so.” She also includes cohesive markers to help tie sentences together. For example, she states, “As well as being advanced in language and inventions, they were also advanced in their architecture.” She reminds the listener that two key areas of advancement in Lifeland were language and inventions, as discussed previously in her summary. Regarding content, she appropriately relays the main idea of the passage (“...they were very advanced for the time”), and she also clearly identifies three of the four main causative details (inventions, written language, and architecture), with a reference to shipbuilding when she mentions “trading by sea.” Comparing her performance with the Language Standards in the CCSS for 11th and 12th grades, this student meets expectations for the following standards: (1) demonstrating command

of standard English grammar and usage; (2) varying syntax for effect; (3) identifying and correctly using patterns of word changes that indicate different meanings (i.e., morphology); and (4) using general academic and domain-specific words and phrases appropriately. She summarized the material well, demonstrating her global comprehension of the main idea, key details, and overall purpose of the passage.

The student's discourse sample shown in Table 3 presents a drastically different picture. The vocabulary in this sample is vague and nonspecific. The student uses phrases such as "everything like that" instead of providing actual details from the lecture. She uses pronouns with unclear referents (i.e., "they"). She also fails to use more complex, age-appropriate morphological markers. Overall, vocabulary and morphology are simple and not consistent with expectations for a 12th-grade student. Syntactically, two utterances include multiple clauses, but her sentences do not reflect complex usage or grammatical sophistication. From a passage-level perspective, she does not identify the main idea or any specific, relevant details from the lecture. In fact, she includes details that were not discussed in the passage (i.e., strings, sun). Her summary does not reflect recognition of the cause-effect structure of the stimulus exposition and lacks overall cohesion and coherence. Overall, this student could benefit from explicit intervention focusing on passage-level feature recognition, such as how to identify the structure of a text to determine its purpose and how to identify the main idea and important, relevant details. It is likely that this student's impaired memory impacted her ability to comprehend the verbal passage as she listened to it, negatively affecting her ability to determine the main idea and key supporting details. As an intervention goal, working on macrostructural features would be most important to assist in learning academic material, as well as other strategies to support her memory (e.g., a note taker), which could be followed by explicit vocabulary instruction.

In both Tables 2 and 3, calculations for syntactic complexity are included as comparisons to the descriptions provided earlier. Generally, these two summaries show roughly similar syntactic complexity, if mean length of utterance in words and clause density are used as the only variables assessed. However, as discussed earlier, these two student summaries show very different discourse profiles. Although there may be value in calculating mean length of utterance and clause density as a way to indicate syntactic complexity, it is important to consider that these values compared with an overall assessment of micro- and macrostructural features of the discourse sample. Reinforcing the importance of a manual assessment of expository discourse quality, the vocabulary, morphology, syntax, and overall content of the student summary in Table 3 highlight several areas where this student might benefit from explicit intervention.

TRANSITIONING FROM ASSESSMENT TO INTERVENTION

Addressing the "cognitive and linguistic underpinnings of [the] curriculum for struggling students" (Murza et al., 2014, p. 132) should be the shared responsibility of all educators and school clinicians who interact with students and have the potential to affect the student's ability to access the curriculum. Because it is now well known that vocabulary, syntax, semantics, and pragmatics continue to develop through adolescence and into adulthood (e.g., Nippold, 1998; Nippold, Cramond, & Hayward-Mayhew, 2014; Nippold et al., 2005, 2007), educators and clinicians must be prepared to not only assess more complex language form, content, and use during later school years but also provide intervention when a language-related challenge interferes with a student's ability to interact with the curriculum. As such, working to improve a student's ability to produce or comprehend expository discourse is consistent with principles of curriculum-based intervention: incorporating a clinical or therapeutic goal that is directly relevant to what

a student is trying to learn in the classroom (Ehren, 2000, 2002). Curriculum-based intervention does not require SLPs to become experts in all academic domains, nor classroom teachers to become experts on language development and disorders; rather, teachers and SLPs bring unique but complementary backgrounds to intervention planning and execution and understanding the demands of the general academic curriculum. Teachers have expertise in a particular discipline and in specific teaching methods appropriate to a particular age group. Speech-language pathologists bring their training in language, cognition, and communication and can help deconstruct a specific task for students who struggle with learning (Roth, 2015). For example, a classroom science teacher would be expected to help a student master the concept of photosynthesis. For a student with language or learning challenges, the SLP can, in turn, teach a student specific strategies to identify key vocabulary or main ideas while reading a science book chapter about plants, paraphrase or summarize the material, and use graphic organizers to aid in a writing assignment about the topic.

Using curriculum-based expository written materials helps make intervention immediately relevant to classroom work (PowerdeFur & Flynn, 2012). Identifying the areas where a student is struggling with expository production or comprehension helps pinpoint initial goals for intervention. Intervention should involve principles of dynamic assessment (i.e., test, teach, retest), curriculum-based materials, and observation of student performance during classroom activities. It is likely that intervention services for students who struggle with classroom language may be best provided within the student's classroom, thus maximizing the relevance of the interventions that aim to improve expository discourse abilities in any modality (Roth, 2015) and in all disciplines.

In addition, because time is always at a premium when providing interventions for students, interprofessional collaboration is a critical piece of improving a student's abil-

ity to comprehend and produce academic language effectively (Ehren, 2002). Starling, Munro, Togher, and Arciuli (2012) reported on a randomized controlled trial where SLPs taught secondary school teachers how to modify their language during classroom activities to support students with language impairments. Some strategies included breaking down large amounts of information into smaller segments, adding graphics and visual representations of information, giving directions with explicit (rather than inferential) language, repeating and rephrasing important information, and explicit vocabulary instruction. Results showed that teachers maintained use of these new instructional strategies without additional SLP intervention and that in classes where teachers received training (compared with control classrooms where no teacher training was provided), students with language impairment showed positive benefits in written language and listening comprehension. There are additional resources available to help guide educators and clinicians in collaborative efforts to support language and learning in the classroom (e.g., Ehren, 2000, 2002; Nelson, 2005).

Although relevant to the various topics discussed earlier, it is beyond the scope of this article to expand on specific intervention recommendations. Several key references are included as resources. Intervention work focusing on explicit teaching of vocabulary and complex morphology includes Roseberry-McKibbin (2015), Montgomery (2013), and Lowe, Henry, and Joffe (2019), as well as the two seminal texts by Beck et al. (2008, 2013). There are several articles discussing syntax interventions for school-age children and adolescents (Balthazar & Scott, 2018; Fang, 2008). Nelson and colleagues (Nelson, Bahr, & Van Meter, 2004; Nelson & Van Meter, 2002, 2006) offer evidence from their work using a writing laboratory to improve students' ability to use and understand more complex vocabulary and syntax in curriculum-based activities, as do Cihak and Castle (2011) in a more recent article focusing on middle school

students. A recent research synthesis also discusses reading interventions for elementary students with learning disabilities who struggle with expository materials (Ciullo, Lo, Wanzek, & Reed, 2016). It should be noted that many of the existing research articles do not assess the effectiveness of interventions for students with specific difficulties in expository discourse contexts, so this is an area for future research and clinical practice to explore.

CONCLUSIONS

Even for states that do not currently use the CCSS framework, educators and other practitioners (e.g., SLPs, reading specialists) who work with students should recognize the importance of expository discourse for both academic and future vocational successes. School personnel should consider how to incorporate LSA of expository discourse into their assessments for school-age children who may be struggling with the curriculum. Currently, these students may not qualify for services based on the structure of available standardized test batteries and the predominance of narrative and conversational language sampling in schools and clinics. Using curricular materials, expository LSA will profile the strengths and weaknesses of a student's discourse abilities in relevant, academic tasks. Furthermore, a student's discourse performance can be aligned with the requirements and expectations of the curriculum and the student's particular classroom and also used to plan and monitor intervention efforts. It

is critical that students who struggle with academic discourse are identified as early as possible, so they receive the explicit intervention services that may improve their chances of academic and vocational success (Clegg, Ansorge, Stackhouse, & Donlan, 2012).

Research and clinical evidence must continue to build the foundation for work in expository discourse, but already we have enough knowledge to increase the use of expository LSA to assess the expressive and receptive abilities of students who struggle in the classroom. Because of the many challenges surrounding expository discourse elicitation methods and the way an individual's background knowledge can shape his or her ability to produce or comprehend exposition on a given topic, it is likely unreasonable to expect that research will produce specific normative comparison data. But current evidence already indicates that students should show increases in vocabulary, morphology, and syntactic complexity, along with the ability to produce more organized, logical verbal and written passages of various expository structures throughout childhood and early adulthood. Students who are not able to meet grade-level expectations in these areas should be assessed further to determine whether they might benefit from explicit intervention to aid their production or comprehension of academic discourse. Although additional evidence-based intervention research is needed (Joffe & Nippold, 2012), we cannot and need not wait to address the complex language needs of school-age persons who struggle with the language of the curriculum.

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