



Learning to Collaborate, Collaborating to Learn

SUMMARY

Two speech-language pathologists describe the language interventions they provide to special education students to support academic achievement. Through collaboration with each other and with classroom and special education teachers, speech-language therapy supports classroom instruction and addresses underpinning foundational vocabulary, concepts and grammatical structures that are challenging for many middle school students.

All students should be taught to reach

high academic standards that will prepare them to succeed in college and careers. Many students face particular challenges in accessing the information presented within their content area classes. Fang (2012) describes the varied lexical and grammatical patterns that are typical of the written texts and spoken language students encounter within specific disciplines. For example, the vocabulary and the way language is organized in social studies is different from the language used in science. Social studies often presents history using text structures to describe a sequence of events with words and clauses such as: the following winter, at the turn of the century, etc. Historical events are presented as a point of view within a

larger context or period. Science texts and lectures use distinctive grammatical features to describe methods, procedures, results and findings. Fang describes use of specialized vocabulary, acronyms and extensive use of long noun phrases in scientific research texts.

Students may struggle as academic demands require that they employ increasingly sophisticated and subject-specific language skills. Scott (2014) describes the increasingly sophisticated and complex sentences older students must navigate in their expository texts and the critical need for support and instruction in both decoding and encoding these types of complex sentences. Students with language learning challenges often encounter difficulty with the vocabulary and the sentence structures of academic

Linda Grimes-Picarazzi is a speech language pathologist with the Bethlehem Central School District and a member of the Bethlehem Central Teachers Association. Grimes-Picarazzi has a master's from Northeastern University in speech language pathology and a C.A.S. in literacy teaching and learning from the University at Albany.

Mary Landry is a certified speech-language pathologist at Bethlehem Central Middle School and a member of the Bethlehem Central TA. She has a master's in communication disorders.

Linda Grimes-Picarazzi, Bethlehem Central Teachers Association
Mary Landry, Bethlehem Central Teachers Association

language used in both oral and written texts. These students may have an Individualized Education Plan (IEP) that classifies them as a student with a learning disability (LD) or speech language impairment (SLI) and qualifies them for special education services, including the provision of speech-language therapy.

School-based speech-language pathologists (SLPs) bring a focus and expertise in language acquisition and use to instructional teams (Ehren, Murza, & Malani, 2012). ESSA (2015) describes an increasing role for SLPs in receiving and providing high quality professional development and coordinated involvement in language and literacy initiatives and programs in schools. As SLPs within a middle school, we design language interventions for students in grades six, seven, and eight to support and develop their academic language skills, and provide them with the tools to better comprehend the curriculum. Our speech-language therapy is informed by our knowledge of the curriculum demands and academic content through collaboration with other teachers.

Our students demonstrate improvement in their listening, speaking, reading and writing in a variety of ways including: increased participation in classroom discussions, identifying connections between curriculum content and therapeutic activities, achievement of their IEP goals, and improvement on standardized assessment instruments as well as teacher-designed tests and quizzes.

Objective measures of student achievement include performance measures such as classroom assessments, standardized measures of language knowledge and student progress toward IEP goals. Subjective measures such as improved participation in classroom discussion, self-monitoring of strategy use and reflection on presentations are all indicators of student success.

Additional outcome measures include a reduction in the need for special education support and increased confidence and self-advocacy.

At the beginning of the school year, we review students' IEP goals with them and put the goals into language the students are able to understand. In therapy, students complete a goal log sheet which includes the learning

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activity and goals for each session. At the end of class the students reflect on how well they have met their goal for the day. These self-reflections help the students monitor their progress toward their individual IEP goals.

Language Learning Challenges

Bethlehem Central Middle School is in a suburban district located in the Capital Region of upstate New York with a population of approximately 1,200 students. Two speech-language pathologists provide therapy, consultation and evaluation of students who present with academic challenges. The American Speech-Language-Hearing Association (ASHA) outlines the roles and responsibilities of school-based SLPs, including robust involvement in addressing students' educational achievement by supporting curriculum mastery. Speech-language pathologists work to address what the ASHA (2010) calls "the linguistic and meta-linguistic foundations of curriculum learning for students with disabilities, as well as other learners who are at risk for school failure, or those who struggle in school settings (Providing Unique Contributions to Curriculum, para.1)." Collaboration between SLPs and general education teachers is essential to facilitate student success (ESSA, 2015).

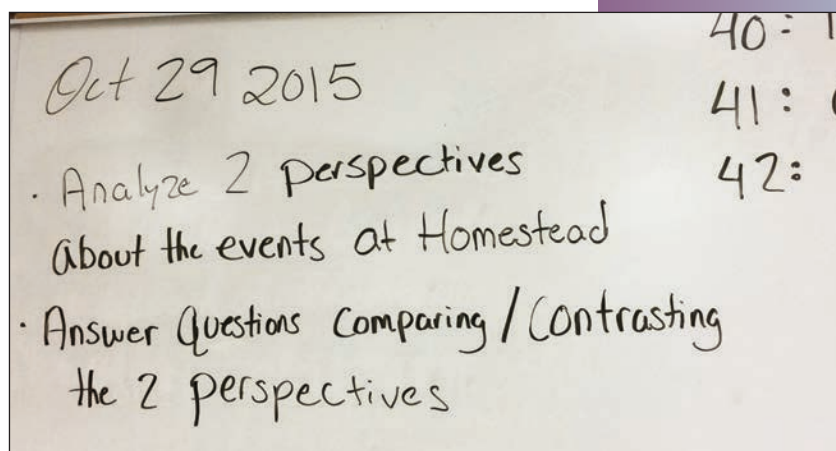
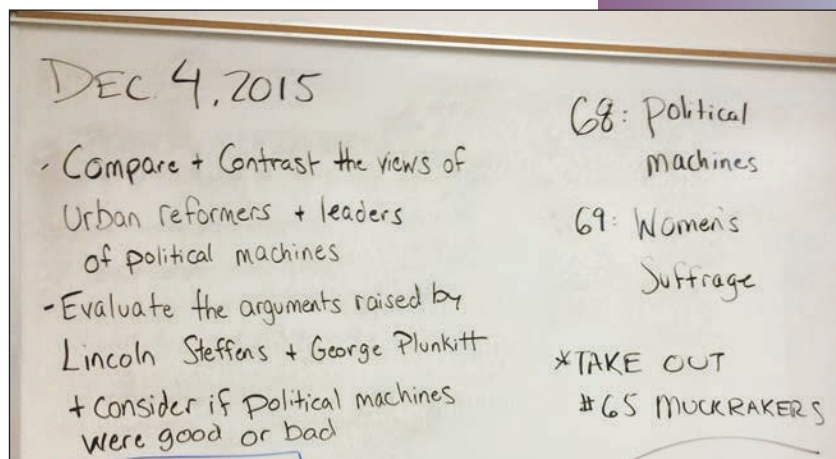
The students described in this article are in general education classes. Some attend resource rooms and some receive speech-language therapy as their only special education service. Our students struggle to comprehend the curriculum for a variety of reasons. The curriculum requires students to understand and use increasingly complex and sophisticated language. Our students demonstrate difficulty making sense of what they hear, read, or watch and need support to discuss, question, explain and write about what they are learning. These students tend to be concrete thinkers with limited vocabularies. They have difficulty understanding and using complex syntactic structures, understanding abstract figurative language and multiple meaning words and explaining relationships. They may lack foundational skills such as questioning, understanding text structures, inferring, and using background knowledge. They often have poorly developed literacy skills.

As speech-language pathologists, we recognized the need for our students with language learning and use challenges to be able to use academic language, the language of the classroom. More than a list of vocabulary words, academic language is how students are taught curriculum content and how students are expected to demonstrate their knowledge. These skills are often assumed or implied, and not explicitly taught.

Academic language includes many verbs that students are expected to understand such as: explain, analyze, compare, describe. As described by Zwiers (2006), academic language is not only the vocabulary words or “bricks” used to describe complex concepts, higher order thinking and abstract ideas, but also includes the “mortar” or smaller connecting words and phrases that link words into sentences (p. 39). It is also, importantly, a particular way of using language, a social register that is familiar for some students and less familiar and perhaps less comfortable for others.

Content area literacy often refers to basic reading comprehension skills and processing strategies such as predicting, summarizing, monitoring comprehension, etc., as well as general learning strategies such as highlighting, note taking and concept mapping (Fang, 2012). These skills and strategies assist students to learn and remember content area information and can be used across a variety of texts, (Jaworski & Coupland, 2006, p .6) including printed material, digital print, graphics, videos, oral discussion, lectures, etc.

Disciplinary literacy encompasses an even broader range of language skills and mastery of specific codes or ways language is used within specific disciplines (Fang, 2012). The challenge of disciplinary literacy includes not only specific vocabulary but also the language patterns. As students progress through



The images above show typical homework or classroom assignments using academic language that students are expected to understand.

school, the language demands become more complex, abstract and specialized. Within specific disciplines, language use and the purpose of language differs. Building foundational as well as sophisticated language skills empowers our students to engage more fully and participate more completely.

Word study programs that explicitly teach students necessary skills while engaging their interest in how words are

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related to each other is described as a vital component of literacy in *Words Their Way* (Bear, Invernizzi, Templeton, & Johnston, 2008). Middle school students benefit from hands-on activities such as word sorts to delve deeply into Latin and Greek root words and word relationships. It is also important to be able to say or pronounce the words in their many derivations e.g. analysis, analyze,

analyst, analytical. The study of morphemic aspects or meaningful word parts such as prefixes, roots and suffixes adds to metalinguistic knowledge and skills. Improvement of these skills can improve understanding of seemingly arbitrary rules of spelling.

Learning to Collaborate

We started collaborating regarding speech-language service delivery, and shared students. We began to talk about our students' needs in the classroom, and how we could best support their language development. Matching therapy activities to the curriculum demands was a top priority. We were afforded opportunities for curriculum development through our school district. We aligned the Common Core requirements with the language based skills the students needed at each grade level. We examined academic vocabulary, cognitive constructs, syntax and classroom discussion skills, and paired them with main themes in science and social studies. Through analysis of grade-level curriculum and text structures, we developed a spiraling curriculum for students receiving speech-language therapy across three grades of middle school.

In addition to the lessons in word study and grammatical structures, students are taught to listen to and acknowledge each other for shared

Scope and Sequence of Speech-Language Curricula for Grades 6, 7, 8

| Grade | Word Work: | Syntax, sentence structures | Academic Conversations: |
|--|--|--|---|
| Expressive language skills | word study skills, parts of speech | complex sentence structures | make relevant contributions to classroom discussions |
| 6th: respond thoughtfully and make relevant comments | geo astro auto cycle cent chron luna sub struct | Compare/contrast "The ___ and ___ are the same/different because..." "The ___ is ___, and/but, however...." Chronology and time related signal words: at first, earlier, before, finally, century, decade | commenting linking to others' comments asking questions |
| 7th: word choices are more nuanced understand and reflect other's perspective | in, a (without) bio archy circu body crat poly sect trans circum | Cause and effect "If.... then...." "Based on ___, I infer that...." Signal words: because of, due to, since, consequently, therefore, as a result, then, lead to.... | thinking critically introducing and acknowledging counterpoints using analogies, metaphors and similes |
| 8th: learning is more self-directed sentences are varied and can be elaborated | tech equi phys post thermo graph/gram mal micro | problem, solution, evaluation Signal words: another possibility, even though, except, as an example, for this reason, on the other hand, in contrast, above all, for instance, including knowledge and use of a variety of grammatical forms including clauses | referencing what has been said to "jump off" or "piggyback" to a new related discussion thread - Using "That reminded me of" or "Now I'm thinking that..." Metacognitive and metalinguistic skill building to notice and name changes in thinking. "I used to think... but now" |

knowledge building. We continue to add to and refine our curriculum throughout the year. The remediation and focused attention provided in the speech language therapy room provides the skill and practice to position students with language learning challenges to participate more fully within their general education classrooms. (See curricula graphic at left.)

Collaborating to learn

Classroom teachers cover the essential vocabulary or “tier three words” (Beck, McKeown, & Kucan, 2002) in class, and the resource room teachers may provide additional practice and review. Tier three words are often subject specific, low frequency and best learned as needed in content area instruction. These terms that are “on the test” may include words such as: mitosis, hieroglyphics, metaphor.

In speech-language therapy we address the underpinning language and the language structures needed to learn and understand these abstract concepts. Therapeutic activities explore the foundational vocabulary and concepts needed for understanding the academic vocabulary. For example, in order to understand mitosis a student needs to know: process, reproduce, copy, align. These foundational or “tier two” words (Beck, McKeown, & Kucan, 2002) are

chosen for their utility and applicability. They are essential parts of the definitions within this subject and are likely to be encountered often.

Teaching foundational concepts and the skills needed to interpret words supports understanding and use of the curriculum content. Morphemic awareness or an understanding of base words and their derivations (e.g. reproduce, reproduced, reproduction) is another critical component of word learning for academic success. These words are taught in a variety of ways all of which emphasize active engagement and challenge students to think about, compare, pronounce, and use the words.

Words may also have subject-specific meanings, for example, “mass” in science is very different than “mass media,” “huddled masses yearning to breathe free,” or Sunday Mass. Similarly, while students may be aware of the noun “mushroom,” they may need explicit instruction and practice to determine what “mushrooming populations” and “mushroom cloud” convey.

An early collaboration was fostered by a summer curriculum development opportunity. Working together with a seventh-grade science teacher, we jointly developed an online vocabulary resource that all students could access for pre-teaching, review or additional support of the specialized curriculum vocabulary.

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The science teacher, Mrs. Lisa Wood, identified critical vocabulary within specific units in her course. Together we also identified the essential information students need to know about the terms and the definitions. For example, within the “Bacteria and Viruses” unit of her Life Science class, terms such as: antibiotic, genetic disease, microorganism, and infectious were defined and flash cards were created using the online resource Quizlet. This collaboration increased awareness of the highly specialized and challenging curriculum content seventh-grade students must navigate. Our work together combined the expertise of both the science specialist and the language specialist.

In speech-language therapy, students explore the use of affixes to find “clues” to word meaning. Words and parts of words, for example, “bio” meaning life (biology, biography, antibiotic, etc.) are investigated. Students sort words, develop lists of related words and practice pronouncing these words and using them in sentences and conversations. Active participation, engaged discussion, and shared knowledge building help students to internalize word features and improve automaticity in their reading, writing, speaking, and spelling. Providing struggling language learners with opportunities to sort, generate and discuss words has practical application back in the classroom, where students

encounter these general knowledge words in all kinds of texts.

Using words from the academic curriculum within speech and language remediation sessions anchors the purpose of our word study activities and illustrates connections between curriculum and therapy. Giving students ownership and practice with a variety of word options, and supported practice in using academic language has a big payoff for academic success (Jacobs, 2013). As students become more adept at these types of discussions, we find them reporting back to us regarding connections between what they are learning in speech, and the language they encounter in the classroom. This provides evidence of improved language awareness and metalinguistic skills.

In speech-language therapy, curriculum-linked texts are examined to identify syntactic structures such as clauses, phrases that signal relationships such as cause and effect, sequence of events, or fact versus opinion. Recognizing and using these types of text structures is a critical skill for students working with readings from their content area teachers. For example, students in eighth-grade social studies classes learn about the chronology of events during the post-Civil War reconstruction period. In speech-language therapy, these same students delve deeply into a text describing the history of candy making

in America. Signal words and phrases such as: “thus,” “finally,” “over the next several decades,” and “at the turn of the century” that indicate the passage of time and sequence of events are noticed, discussed and added to the world wall or chart.

This naming, noticing, and guided practice in using these types of grammatical structures supports students as they independently navigate their assignments from class.

Communication between the speech-language pathologist and both the classroom teacher and resource room teacher reinforces the connections between skills and success as these teachers are able to reference the signal words in class texts and encourage students to use these words in their writing. Collaboration between various teachers can lead to increased recognition of the need for supporting language development of students and demonstrate the connection between language learning and academic success.

In our district’s eighth-grade Direct Consultant Teacher (DCT) program, for example, a special education teacher works within the grade-level, general education content area classes. Collaboration opportunities include in-room speech-language services, when both the speech language pathologist and resource room teacher teach together. Based on the demands

of the curriculum, the resource room teacher, Mr. Robbie Nichols, and the speech-language pathologist decided the students needed to develop better short answer responses. This skill was explicitly taught within the resource room with additional instruction and practice provided in the speech-language therapy room. Some students were able to develop oral responses but required scaffolding to transcribe their ideas into written language. Mr. Nichols was able to support the students’ emerging skills by reminding them to “flip the question” or restate the question stem as part of their answers for classroom assignments. Students complete a rubric to evaluate their short answer responses and to analyze, change, and track their improvement over time.

Weekly check-ins with Mr. Nichols, with teacher Web pages and with the students and their assignment books allow the SLPs to stay informed about instructional units. Mr. Nichols is able to provide specific examples of academic challenges. For example, during an eighth-grade social studies unit on economics, he noticed our students were struggling with understanding many of the foundational concepts. We provided an overview by having the students watch a BrainPop on economics. We brainstormed vocabulary words they encountered and included related words and wrote them on the

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board. Mr. Nichols prompted the discussion and activated prior knowledge, referring back to what the students had discussed in class. The students paired off with iPads and completed a variety of activities for additional practice in using the vernacular of economics.

In a followup speech-language therapy session, we sorted words related to money such as: currency, buck, interest, scarcity, surplus, etc. Mr. Nichols' hands-on experience in the classroom was invaluable in identifying essential curriculum concepts which required more discussion, review and development. With this extra attention to challenging material, the students were able to demonstrate mastery of the curriculum vocabulary and essential concepts on classroom tests, quizzes and on-demand writing tasks.

During the social studies unit on civil rights, we read a play in the resource room about events in the 1960's. The students practiced reading fluently and with frequent pauses for comprehension checks and discussion. During speech-language therapy, the students worked on using target vocabulary as well as words and text structures that signal cause and effect (this led to..., since, caused by, as a result, etc.) The students wrote sentences related to civil rights in their notebooks, using a variety of words to indicate cause and effect relationships. As a group, we read the sentences aloud, revised, and

discussed, leading to more sophisticated and elaborate vocabulary and sentences.

When Mr. Nichols suggests that students need to study for upcoming tests or quizzes, the SLP uses the vocabulary list from Quizlet, and leads activities designed to facilitate connections between the vocabulary words and the major concepts of the unit. These activities are based upon popular games such as *Apples to Apples* or *Pictionary*. Some activities include an art component. For example, in studying for the quiz on Westward Expansion, the students were dealt three cards with a vocabulary word on each one. The "judge" puts out one card and explains the meaning of the word. One at a time, the students present the word they feel "goes with" the target word, and explain why. Another popular activity has the student drawing the vocabulary target word on a white board, with students guessing what the word is. We discuss what details in the picture were important to our understanding, and what could be added to the picture to more effectively convey the idea. In all activities, the students are encouraged to use their target syntactic structures to express the relationships.

Not all collaboration is formal, scheduled, or face to face. A more casual collaboration developed between the eighth-grade social studies teacher,

Mrs. Annie Baker, and SLP Mary Landry, the homeroom teacher in her classroom. Each day, the goal of Mrs. Baker's lesson is written on the board, along with the homework assignments and any upcoming tests or quizzes. Class readings are kept on top of the cabinet with extra copies available for the SLP to take and discuss with shared students later. Mrs. Baker and the SLP frequently talk about the activities they are doing and how to best support shared students. A mutual goal is to provide the students with the skills they need to be more successful accessing the curriculum in the classroom. The combination of skill practice in the therapy room with carryover in the resource room and classroom provides the students with more opportunities to discuss the unit of study using target vocabulary with more grammatically complex language. We often hear our students say "I know it in my head." Our combined efforts give these students time and support to practice putting those thoughts into words.

In addition to word study and syntactic structures, the third piece of our spiraling speech-language curriculum includes practice using the academic language skills in collaborative conversations (Fisher & Frey, 2013). Students with language impairments often have difficulty contributing to academic discussions, lacking vocabulary and/or the syntax to organize their

thinking. To build discourse skills, our students are taught scripts for entering academic discussions, making and linking comments, agreeing and disagreeing with peers, and justifying their thinking with relevant evidence. We use model scripts and sentence starters to develop responses for discussion topics and to respond to peer comments. These sentence starters provide a familiar grammatical

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Academic Conversation Starters

| Grade | Focus |
|---------------|--|
| 6th | I think ____ I believe ____ I notice ____ |
| Commenting | |
| Questioning | I don't understand ____ I wonder ____ Why? |
| Linking | I'm not sure about ____ That reminds me of ____. |
| 7th | I agree with you because ____ I like what you said because ____ I see what you mean. Now I understand your point of view. |
| Agree | |
| Disagree | I disagree with you because ____ I'm not sure I agree with what you said because ____ I have a different point of view. |
| Clarification | Repeat that please. Explain that more. What is your evidence? |
| 8th | I found further evidence of what you said ____ I was thinking about what ____ said, and I was wondering if ____ So what you're saying is ____ What do you think? What if ____? In other words, ____ |
| Extension | |

Speech-language pathologists have a valuable role in developing and supporting the academic language of students. Collaboration with teachers grounds the therapeutic activities in the language used in classrooms and illuminates the language demands of various subject areas.

structure that scaffolds a student's attempt to develop his or her responses. In the safe space and small group configuration of speech language therapy sessions, students practice responding to each other by restating what another student has said and then piggybacking or adding-on their own perspective. Students are provided with their own printed version of the sentence starters. A larger version is posted on the board. The SLP may support students by providing a model to imitate, or by breaking the complex sentence into smaller phrases and clauses. Students are supported through encouragement and restating as they attempt to put their thinking into words. These conversation skills are practiced in the therapy room and put to use in the classroom. Feedback from teachers about student participation and communication skills informs our therapeutic interventions. (See "Academic Conversation Starters" on previous page.)

Conclusion

Many students struggle with the language demands of their academic classes including the vocabulary, text structures and ways of talking that are increasingly important and particularly challenging as students advance through school. Although the speech language remediation we describe was designed for special education students receiving speech-language therapy, the instruction, materials, approach and philosophy can help support all students in their classrooms. Speech-language pathologists have a valuable role in developing and supporting the academic language of students. Collaboration with teachers grounds the therapeutic activities in the language used in classrooms and illuminates the language demands of various subject areas.

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