Beyond Vocabulary Lessons: Improving Academic Vocabulary Equity for Fifth Grade Students with Specific Reading Disabilities Through Sustained Use in Reciprocal Dialogue.

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Beyond Vocabulary Lessons: Improving Academic Vocabulary Equity for Fifth Grade Students with Specific Reading Disabilities Through Sustained Use in Reciprocal Dialogue.

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This dissertation investigates the potential of sustained use of academic vocabulary in reciprocal dialogue to improve educational equity for fifth-grade students with specific reading disabilities. Students with reading disabilities often struggle with acquiring academic vocabulary, which can hinder their overall academic performance and limit their access to educational opportunities. While traditional vocabulary instruction methods exist, they may not effectively address the unique needs of students with reading disabilities.

This improvement project aims to explore the effectiveness of incorporating increased academic vocabulary use in dialogue among fifth-grade students with specific reading disabilities in an inclusive school setting. Reciprocal dialogue is examined as a supplemental approach that emphasizes active engagement, contextualization, and social interaction.

To achieve the objectives, the "Plan, Do, Study, Act" or PDSA improvement model was applied. The participants included all fifth-grade students with specific reading disabilities enrolled in the district's special education reading classroom. Visually simple posters, coteaching and collaboration were introduced to reinforce academic vocabulary use in classroom dialogue. The project was conducted over a period of three months, with regular reciprocal dialogue sessions incorporated into the students' inclusive general education reading curriculum.

The outcomes of the student group's performance on vocabulary questions were compared with the number of times targeted vocabulary terms occurred during observation periods in the

inclusion reading classroom. There was no correlation between the total number of times a vocabulary term was used and the participants' performance on vocabulary questions but there was evidence that sustained use of vocabulary terms in reciprocal dialogue improved group performance. The data collected indicates that vocabulary use in the classroom increased with a combination of approaches.

The findings of this paper will contribute to the existing body of research on vocabulary instruction for students with reading disabilities, highlighting the potential benefits of sustained use of academic vocabulary in reciprocal dialogue. The results will inform educators and curriculum developers on innovative approaches to address academic vocabulary equity for students with specific reading disabilities. This initiative seeks to empower students with reading disabilities by equipping them with the necessary vocabulary skills to succeed academically and participate fully in educational settings.

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Preface

Students with specific reading disabilities have a particularly challenging time learning and applying the meaning of new vocabulary even when presented with a modified curriculum in an inclusive classroom. The current instructional model restricts accessibility to Academic Vocabulary and fails to provide appropriate access to foundational skills in Pennsylvania Core Curriculum materials.

The purpose of this project is to improve accessibility to Academic Vocabulary mastery in fifth-grade students with specific learning disabilities in reading so that they may better access Pennsylvania Common Core Curriculum.

To implement this improvement plan, the "Plan, Do, Study, Act (PDSA)" improvement model was utilized. The core principle driving my change idea predicted that an increase in the usage of academic vocabulary would correlate with an increase in student ability to generalize the academic vocabulary when applied to vocabulary test questions. Data on the usage of eleven academic vocabulary terms was collected over a period of approximately three months and spanned the scope and sequence of four story units from the general education curriculum in the Inclusion Reading classroom during classroom instruction. To assess mastery, students were presented with test questions that applied the terms to leveled reading selections from the special education curriculum. Each story unit was a cycle in the PDSA plan in which the effects of the change idea were closely monitored. With each cycle, modifications were made to maximize effectiveness and minimize unwanted negative impacts to student education.

The primary participants were twelve students with identified disabilities that involved reading and who received instruction in both the general education and learning support reading

classes. The secondary participants were the fifth-grade general education teacher and the fifth-grade special education teacher.

The results found that there was little correlation between the number of times the terms were used and the number of correct responses on the vocabulary test. However, there is indication that this may be a result of regression because over multiple instances the number of students who responded correctly declined when the vocabulary term was no longer observed in use. This suggests that it is more effective to increase the use of academic vocabulary in dialogue over a spread-out period rather than repeatedly in a brief period.

1.0 Broader Problem Statement

My problem of practice identifies inequitable academic vocabulary instructional practices for students with specific learning disabilities in reading. It has been my observation that students with specific reading disabilities have a particularly challenging time learning and applying the meaning of new vocabulary even when presented through the current modified curriculum in an inclusive classroom. This noticing prompted me to conduct a literature review on the topic of academic vocabulary learning with a specific focus on students with language-based disabilities such as specific reading disabilities.

Exposure to language in childhood is vital for vocabulary development (Golinkoff et al., 2019; Greenwood et al., 2011; Purpura, 2019; Romeo et al., 2018). As such, it is crucial that elementary students receive appropriate exposure to vocabulary. (Apthorp et al., 2012; Becket al., 2013). Studies point to the importance of language use in caregiver-child engagement (Durham & Smith, 2006; Ralph et al., 2020). For the purposes of this improvement project, the caregivers are the educators in the school setting. More specifically, upper elementary students with reading disabilities benefit from reciprocal dialogue as a potential mode to bridge this educational inequity (Apthorp et al., 2012; Kennedy et al., 2014; Weiss et al., 2016). Students' experiences in the school setting, and the quality of their education will either fulfill their potential or serve to further oppress them and perpetuate the stigma that they cannot achieve academic success. Therefore, this is a barrier worthy of address.

1.1 Review of Literature

It is well documented that children who lack rich language exposure in early childhood are at an increased risk of falling behind in their vocabulary (Golinkoff, 2019; Greenwood et al., 2011; Purpura, 2019). Studies have shown the importance of a language-rich environment for student learning, including the importance of teaching language in the classroom (Beck et al., 2013). Studies have shown the consequences of less language exposure on children's language and reading development. These studies point to the importance of language use in caregiver-child engagement (Durham & Smith, 2006; Ralph et al., 2020). For the purposes of this improvement project, I consider the teachers as caregivers in the school setting.

I am a fifth-grade learning support teacher at a rural school in Pennsylvania. In my role, I have noticed that students with specific reading disabilities have a particularly challenging time learning and applying the meaning of the new vocabulary even when presented through explicit instruction in an inclusive classroom. Further, when students reach the upper elementary levels, the vocabulary used in Pennsylvania Core Curriculum incorporates a higher level of academic vocabulary. I seek to implement effective academic vocabulary instructional methods for upper-elementary students with specific learning disabilities in reading.

Vocabulary can be categorized into a three-tier framework (Becket al., 2013). Tier-1 vocabulary terms are the most familiar words used in daily conversation (Becket al., 2013). Examples include run, play, house, school, friend, up, behind, soft, colorful, and so on. Tier-2 words are less common but have applications across multiple subject areas (Beck, McKeown, & Kucan, L., 2013). Examples may be compare, contrast, cause, effect, purpose, and so on. Tier-3 words are less commonly used across settings and are specific to topics, professions, or content areas (Becket al., 2013). Examples include geosphere, combustion, idiom, or gerrymander.

To examine practices aimed at improving academic vocabulary for students with specific reading disabilities, the change idea focused on in this improvement project are Tier-2 and Tier-3 Academic Vocabulary terms to improve accessibility to Pennsylvania Core Curriculum. Henceforth, I will refer to the targeted Tier-2 and Tier-3 Academic Vocabulary terms in this improvement project as Academic Vocabulary, or terms.

1.1.1 Questions Guiding My Review of Literature

1. What are prominent perspectives on children's vocabulary development?
2. What are promising effective approaches for supporting vocabulary use in upper elementary children with reading disabilities?

1.1.2 Search Process and Roadmap

To explore my questions, I first made a cursory overview of the debate behind the association between early caregiver Socio-Economic Status (SES), caregiver-child language experiences and children's developing vocabulary knowledge. Then, I examined current research on how linguistic pathways develop in the brain, and I explored implications on future language and vocabulary learning. Moving on from this, I focused a sizable portion of my review on the science of learning and the needs of children with specific learning disabilities in reading. Finally, I examined promising effective vocabulary instructional practices.

1.1.3 Review of Scholarship

I began with the debate surrounding the frequently referenced "30-million-word gap" first coined by Hart and Risley in Meaningful Differences in the Everyday Experience of Young American Children (1995), henceforth Meaningful Differences, in which the authors bring forth a concern about disparities in vocabulary growth between different socioeconomic status (SES) groups. Hart and Risley's (1995) findings have sparked controversy, even as their work continues to be cited in current academic literature. In short, opponents of Hart and Risley's "30-million-word-gap" raise concerns about racial bias, pointing to a crucial design flaw in the selection of participants, the data collection methods, and conclusions (Baugh, 2017; Sperry et al., 2019). I traced prominent concerns below.

1.1.4 Conceptualizing the Word Gap

1.1.4.1 A Word Gap Correlated With SES

In their seminal study, Hart and Risley (1995) coined the term, "the 30-million-word-gap." The study observed the number of words that parents from three different socioeconomic levels spoke to their children. Hart and Risley concluded that children from the lowest SES families heard significantly fewer words than their highest SES counterparts. The findings suggested children from the poorest SES hear, on average, a total of thirty million fewer words than children from the highest SES families over the first four years of life. Their work has inspired practitioners to try to close the word gap through vocabulary instruction.

1.1.4.2 The Real Word-Gap Is Unclear

Recently, Sperry, et al., (2019) published a theoretical reexamination of the 30-million-word gap, questioned the methods, and subsequently tried to replicate the findings. One key argument they made was that Hart and Risley's design did not record conversations between adults that the child may have overheard. Sperry, et al., (2019) pointed to anthropological evidence that demonstrates children from other cultures learn their native language even when the cultural practice is not to speak directly to the child. Conversely, Hart and Risley, too, found that all the children in their study learned to speak, but purported the quantity and quality of the early experiences with language provide a catalyst for future exponential vocabulary growth.

Following the critique, Sperry, et al., (2019) reexamined the relationship between SES and language habits in the family and determined that there was a great variation within each group, and the lowest and middle groups overlapped. Sperry, et al., (2019) concluded that the proverbial "30-million-word gap" was fallacious. However, Golinkoff et al., (2019) pointed out that they failed to replicate the Hart and Risley study because they excluded the highest SES from their participants. Revisiting the data in *Meaningful Differences* with this in mind, Hart and Risley's working-class SES also had the greatest variation and overlapped with the welfare SES to a great degree, but the differences were between the lowest and the highest SES groups (Hart & Risley, 1995).

In another theoretical review, Purpura (2019) questioned the general method of extrapolating the number of words uttered, calling the number of words needed to close the gap, "untenable" in the assumptions that Hart and Risley made from the limited data. According to Purpura, the actual difference in words spoken to children is smaller than thirty million.

Exploring the relationship further with a quantitative observation study, Gilkerson et al. (2017) used the Language Environment Analysis System (LENA) to automatically record conversational turn-taking between adult caregivers and children rather than differences in syntax and morphology of words in respective dialects and found predictive value between conversational turn-taking and SES (Gilkerson et al., 2017). While these findings indicated that a word gap exists, Gilkerson et al. (2017) did not find a difference in as many—extrapolating an approximate 4-million-word difference over 4 years.

1.1.4.3 Word-Gap is Not Consequential

In a conceptual examination of the 30-million-word gap authored by a well-regarded scholar in linguistics and social implications for African Americans. Baugh (2017) examined Meaningful Differences through the lens of African American Vernacular English (AAVE). According to Baugh, the "word gap" framing is problematic because it privileges white middle-class norms. Baugh's greatest critique is that *Meaningful Differences* presumes that AAVE is inferior to Standard American English (SAE).

1.1.4.4 In Sum

Although Hart and Risley's (1995) study has been frequently cited as evidence that students from disadvantaged homes do not come to school with adequate high-quality language experiences, it is important to treat this work with skepticism. Scholars such as Purpura (2019) and Gilkerson et al., (2017) have pointed out that the academic language gap may not be as large as the original study suggested and raise concerns that the tools and assumptions made in the study may have been flawed.

Like Baugh's argument (2017), the linguistic norms in the distant-rural school in the present improvement project differ from the language used in the Pennsylvania Core Curriculum. While my current place of practice has little racial and cultural diversity, I see similar patterns emerge because the regional dialect differs from the Academic Vocabulary used in the Pennsylvania Core Standards. In the same way, it is difficult to extrapolate student academic mastery because standardized assessments rely on vocabulary that differs from students' linguistic norms. Further, the barriers between the local vernacular and the academic language used in the curriculum can be problematic for students with learning disabilities. In other words, I have observed students with academic skills that cannot be measured accurately primarily because of vocabulary barriers rather than lack of content mastery. As with Baugh's critique of the assumption that AAVE as inferior to Standard American English, the dialect in rural Pennsylvania is likewise not inferior. However, I disagree with Baugh in that language difference devalues the teaching of vocabulary that aligns with academic standards. Failing to teach the vocabulary necessary to access content is counterproductive and may serve to further oppress groups of people based on their identity. Vocabulary is a tool that fights oppression rather than being a mode of oppression because it provides a voice to individuals so that they may advocate for their causes.

1.1.5 Considering Language and the Brain

Pulling away from the debate, other scholars focused on the effects of language exposure on brain development. Neural Imaging Demonstrates that dialogue is important for children. Neural activity is measurable through brain imaging technology (Romeo et al., 2018).

Neural imaging has provided evidence that early language exposure in children, especially regarding the predictive value of conversational turn-taking frequency between child and

caregivers, was observed in the Broca's area (Romeo et al., 2018). Romeo et al. conducted an empirical study through observation data collected using fMRI to record neural activity in young children's brains as they listened to a story (2018). This was cross referenced with data collected from the LENA system to automatically record conversational turn-taking between child and caregiver (Romeo et al., 2018). The evidence showed that the quality of conversational turn taking mitigates the negative effects growing up in an impoverished environment may have on future language skills (Romeo et al., 2018). Thus, the quality of language exposure, like that which occurs in dialectical turn-taking, is a crucial part of paving the way for future language readiness. As such, students continue to need high-quality conversations in the school setting with their peers and teachers.

1.1.5.1 Vocabulary Drives Comprehension: Lexical Quality Hypothesis

1.1.5.1.1 Vocabulary Aligns With Performance

Within a special education reading classroom, students may have breakdowns in one or more crucial areas in reading. Beyond the foundational decoding skill, students with reading disabilities may struggle with discourse, morphology, syntax, or vocabulary (Adolf & Hogan, 2018). According to the Lexical Quality Hypothesis, comprehension depends on knowing what the words mean and the ability to construct a mental representation of the written or spoken language (Perfetti & Stafura, 2014). In addition to this, verbal reasoning is tightly aligned with vocabulary knowledge and performances on traditional IQ tests (Hirsch, 2006). In this way, building stronger semantic connections may compensate for poor comprehension skills (Koedinger et al., 2012; Schmidtke et al., 2018; Wang et al., 2019).

1.1.5.1.2 Academic Vocabulary Promotes Bridging Concepts

Comprehending key vocabulary cues in sentences enables the reader to bridge a word or phrase in one sentence to a word or phrase in another sentence (Perfetti & Stafura, 2014). Consequently, a crucial element behind comprehension is being able to retain concepts from one sentence to the next. Without adequate vocabulary (lexical) knowledge, the student will spend their limited cognitive resources on simply trying to discern the meaning of a word, which is especially difficult if they are also struggling with other components of reading (Perfetti & Stafura, 2014; Beck et al., 2013). Moreover, as children reach upper elementary, the lesson presentation and classroom discussions demand the understanding of academic vocabulary (Catts et al., 2005). To put a fine point on it, adequate academic vocabulary is not only necessary for reading comprehension, but also fundamental for all forms of communication in the academic setting (Perfetti & Stafura, 2014).

1.1.5.2 Understanding the Nature and Needs of Reading Disabilities

While dyslexia are primarily concerned with lower-level phonologic ability, Developmental Language Disorder (DLD) is involved with higher level skills such as word retrieval, automatic word association and the ability to automatically form mental representations of passages read (Adlof & Hogan, 2018; Catts et al., 2005). Struggles with higher-level language skills often go undetected in the lower grades but begin to surface in upper elementary when the demands of academic discourse increase. While focusing on phonological skills remains crucial to students in special education, it is important to provide equitable Academic Vocabulary exposure to all readers.

1.1.5.3 In Sum

When we engage students in high-quality classroom dialogue, they may gain better mastery of the vocabulary. While traditional vocabulary learning in the general education setting relies on a stand-alone explicit vocabulary lesson and reading or writing the Academic Vocabulary terms in context, this is not the most effective approach for students who do not read on grade level because a language disorder may prevent them from accessing and mastering the content through those modes. Further, classroom discourse using targeted vocabulary helps students build stronger semantic connections which improve comprehension across settings. In upper elementary grades, the words used move from informal colloquial words to more robust, content-specific academic vocabulary. Therefore, an effective vocabulary intervention may benefit a neuro-diverse upper-elementary population through rich dialogue and does not rely heavily on reading or writing skills. Moreover, effective instruction will account for differences in students' cultural experiences and early language environments.

1.1.6 Promising Principles for Supporting Academic Vocabulary Use in Upper Elementary Children With Reading Disabilities

1.1.6.1 Principle 1

Direct instruction is an effective research-based practice (Beck, et al., 2013; Harris et al., 2011; Kucan, 2012; Rimbey & Kucan, 2018). Regarding vocabulary instruction, it is important to explicitly provide a student friendly definition, demonstrate the mnemonic or morphemic analysis, explicitly model the decoding and pronunciation of the Academic Vocabulary while pairing it with the printed word, and establishing the context that the student will encounter the new Academic Vocabulary (Beck, et al., 2013; Koedinger et al., 2012).

1.1.6.2 Principle 2

Select Academic Vocabulary terms with intent and purpose. The importance of vocabulary to student academic outcomes is also a theme throughout the academic literature (Koedinger et al., 2012; Schmidtke et al., 2018; Wang et al., 2019). According to the Lexical Quality Hypothesis, comprehension depends on strong semantic connections to vocabulary (Perfetti & Stafura, 2014), and verbal reasoning is aligned with vocabulary knowledge and performances on traditional IQ tests (Hirsch, 2006). So, if a stronger predictor for content comprehension, either heard or read, is vocabulary (Braze et al., 2007), and these skills are important for improved academic outcomes (Hirsch, 2006), then it is imperative that we keep a focus on vocabulary in special education.

But there are far too many words to attempt to teach within the school day. Therefore, it is important to select Academic Vocabulary terms carefully based on frequency of use, prioritizing to accommodate for the available instructional time (Becket al., 2013; Elleman et al., 2019; Kennedy et al., 2015). While academic vocabulary occurs less frequently in children's daily lexicon, it is a regular part of curricula that aligns with Common Core Standards. Core Academic Language Skills (CALS) are cross-disciplinary, academic language skills that are useful across multiple content areas (Barr et al., 2019). CALS is essential for thoroughly integrating new academic content into background knowledge (Uccelli et al., 2015).

1.1.6.3 Principle 3

Use cross-curricular design. Students with specific reading disabilities may have weak vocabulary and decoding abilities, but these students have stronger abilities in other content areas (Hickok & Small, 2015; Romeo et al., 2018). If a student struggles to interpret silently read stories, read aloud, and discussed in class, a more effective method may be incorporating other areas subject to springboard discussions while integrating key Academic Vocabulary. Through authentic

content, interesting topics, encouraging thoughtful discussions, and promoting collaboration, lessons will have a more meaningful impact on learning (Barr et al., 2019).

With higher level vocabulary, quality of the language experience is more important than the quantity (Romeo et al., 2018), meaning words are best mastered if the student is fully immersed in the learning experience. It is also most beneficial if the student is actively engaged in deep reciprocal conversations in social interactions with peers and adults (Elleman et al., 2019). If a student has a weaker vocabulary, there is less existing knowledge to integrate new experiences with (Beck, et al., 2013). So, it is important to provide experiences that build knowledge by engaging multiple senses. Finally, students with specific reading disabilities need to hear and use the Academic Vocabulary terms more frequently and across settings than their non-disabled peers (Apthorp et al., 2012).

1.1.7 Synthesis

1.1.7.1 Putting the Word-Gap Debate Into Perspective

We must always consider the relevance of a study when attempting to generalize findings to practice in the field. Revisiting the data across studies reveals that when comparing the lowest and middle SES groups only, SES provides little predictive value. Considering the implications, SES may help inform targeted funding decisions at the state and regional level, but insight at the district level is not meaningful, especially if a school's population is comprised entirely of low and middle SES families. Further, students with language-based disabilities have unique needs and are a part of the body of students regardless of demographic or linguistic background. From this, we can deduce that most schools may benefit from effective Academic Vocabulary instruction for students with specific reading disabilities.

1.1.7.2 Engaging Children in Dialogue Does Matter

Other perspectives are brain-based, focusing on how the brain works when acquiring language. There is straightforward evidence through neuroimaging that the human brain adapts itself to meet a child's language environment (Pénicaud et al., 2013; Romeo et al., 2018). Further, children who experience more adult-child conversational turn-taking are more efficient vocabulary learners (Adlof et al., 2018; Pae et al., 2016; Romeo et al., 2018; Schmidtke et al., 2018). Therefore, students with weaker vocabulary require enriched—rather than restricted—opportunities for deep vocabulary exposure through high quality conversational turn-taking in the classroom.

1.1.8 Effective Approaches: An Improvement Plan and Change Idea

First, instructional materials should eliminate extraneous details to avoid confusing struggling learners, pair the Academic Vocabulary terms with minimal text, and Academic Vocabulary terms should be paired with images relevant to the content (Mayer, 2011). Therefore, an effective vocabulary intervention benefits a diverse population through rich dialogue, strong visual supports, but does not rely heavily on decoding, extensive background knowledge, and pre-established vocabulary knowledge.

In addition to instructional method, research indicates that words are best mastered if the student is immersed in the learning experience with deep reciprocal conversations in social interactions with peers and adults (Elleman et al., 2019; Romeo et al., 2018). Further, the Academic Vocabulary terminology must be selected carefully to shorten the list and place emphasis on vocabulary that has value across content areas (Barr et al., 2019; Beck, et al., 2013; Kucan, 2012). Core Academic Language, such as English Language Academic Vocabulary are words that have

applications across multiple content areas (Barr et al., 2019; Uccelli et al., 2015) and are a crucial part of a student's education.

1.1.8.1 User Description

The primary participants in this change idea are fifth-grade students with specific learning disabilities in reading. The secondary participants are the general education reading teacher, and the fifth-grade special education teacher. The most important users related to my problem of practice are fifth-grade students with specific learning disabilities in reading are enrolled in the Inclusion Reading classroom as well as the Special Education Reading classroom. The tertiary users are the non-disabled students enrolled in the regular education inclusion classroom.

1.1.8.1.1 Students

The fifth-grade students that are the primary focus of my Problem of Practice have specific learning disabilities in reading. It is important to note that the identification of reading disability is a broad category that encompasses multiple disabilities that affect areas involved in reading, including speaking, comprehending, language processing and writing. My students were enrolled with the same cohort of classmates from year to year, which tracks them through an inequitable educational environment. I consider this when evaluating these students' performance in the school setting.

1.1.8.1.2 Teachers

The teachers must do their best to provide the students with high quality education but are working with perceived inadequate time resources. Both the fifth-grade general education reading, and fifth-grade special education teachers in the present school district are well experienced and adept at inclusion practices. They collaborate regularly and modify and supplement the curriculum.

1.1.8.1.3 Relationships Among Users

The regular education teachers on the fifth-grade team work closely together and collaborate to ensure content is supported across subject areas. Additionally, the special education teacher travels with most of the students with learning disabilities throughout the day. This provides the special education teacher an opportunity to observe how students with reading disabilities interact with the general education curriculum. This organizational structure has revealed strengths and weaknesses in the instructional materials and methods.

1.1.8.2 Organizational System: The School District

The school district is in rural Pennsylvania with little racial diversity. Of the total population, only 4.2% of the students in the school district identify as a minority, with 1.6% identifying as Hispanic, 1.6% identifying as multi-racial, 0.6% identifying as African American, 0.2% Asian, and 0.2% identifying as American Indian/Alaskan Native (Future Ready Index, 2023). With a total enrollment of 1,236 students in the district, 211 are students enrolled in special education; however, there are too few students in this category who identify as a minority to draw conclusions about racial over- or under-representation (Pennsylvania Department of Education, 2022).

1.1.8.3 Fifth Grade and Students With Reading Disabilities

The fifth-grade classes are departmentalized with one teacher instructing each course. In this district, fifth is the first grade-level that the students follow a period schedule and move between classrooms each period. There is a fifth-grade learning support teacher that manages the special education caseload for the grade level learning support students enrolled in the on-campus classes. The special educator also pushes into the general education classrooms and follows the

students enrolled in the inclusion classroom into the Core Reading, Language Arts, and other classes. In addition to this, the Special Educator teaches an additional special education reading intervention class period. Students with specific reading disabilities were enrolled in both the co-taught Inclusion Reading classroom and in the pull-out Special Education reading classroom at different periods during the day. A classroom aide was assigned to this grade level and assists in the pull-out special education reading classroom. Historically, the students enrolled in the learning support reading classroom begin the school year reading at a pre-primer to a third-grade level equivalent. As such, these students cannot adequately decode fifth-grade level text.

Through conversations with teachers in the upper elementary grade levels, a common mantra was that there is a limit to what can be done with the targeted group of students in the inclusion class because the students in this class take longer to get through the coursework. To accommodate this, teachers in the inclusion setting often abridge instructional materials to fit the core skills in. Therefore, adding more instruction may be a barrier to improvement program adherence. Further, reading and language arts are assessed with a high stakes state-wide standardized test, and student performance in this subject has a significant impact on the general education teacher's performance ratings. Through empathy interviews and focus group discussions, I learned that there is concern that additional initiatives, especially if they turn out to be ineffective, will detract from the core curriculum (Light, 2022).

I explored literature about the equities and inequities that the students with reading disabilities face in their education. Not all educators see academic vocabulary as a worthy endeavor. This is especially the case with the learning support students because there can be expected futures for these students. Through focus group discussions, I discovered that several educators' positionality may hold academic vocabulary on a low value because they believe that

people do not use academic vocabulary in the "real world," the words used in the Pennsylvania Core Curriculum change over the years, and some school personnel also believe that students with specific learning disabilities may be best suited for blue-collar work within the community (Light, 2022). The impact of viewpoints of teachers about the students' abilities may influence the instructional delivery and equity of education.

1.1.8.4 Ableism as it Applies to the Setting.

When I conducted my literature review, I considered how teacher perspectives and inequity in education may play out in the landscape of the fifth-grade learning support setting at the present school district within the context of the community, the school culture, the practice of inclusion, teacher's practices, and the academic vocabulary content.

In her book, Ableism: The Causes and Consequences of Disability Prejudice, Michelle Nario-Redmond (Nario-Redmond, 2020) outlines sensitive issues around the institutionalized cultural practices and beliefs in Social Darwinism that have been used in the past to justify the prejudices against individuals with disabilities. Nario-Redmond states,

> "The extent that both dominant and subordinate groups buy into ideologies that morally and intellectually justify social inequalities, the use of force becomes less necessary as people fail to perceive group-based differences as unjust. Ideologies help ensure stability of the system where the privileged maintain their positions of power, and the likelihood of social change is minimized" (pp. 86-87).

Students with specific learning disabilities have been tracked overwhelmingly in the early grade levels into cohorts. While the definition of "inclusion classroom" outlines the ratio of disabled to non-disabled students, in practice schools may track most learning-disabled students with students who may not have a formal disability label but are historically at-risk or low achieving. Tracking students in the inclusion cohort over multiple years results in a highly inequitable education when compared to the other general education groups. It is, then, difficult to tease apart whether it is teacher attitudes and their instructional practices or greater structural problems which are the cause of educational inequities.

1.1.8.5 Teachers' Ideas of Social Construct

Teachers bring their ideas of social construct with them. Specifically, key users have observed this trend in classrooms. In an interview with an administrator, he recalled that in the early years of his practice, he was guilty of discounting students' potential when the class was on significantly different reading levels. He reflected on these early career moments, "and I asked, ['what am I supposed to do with that'] at one point when I was a new teacher 'cause I heard it. I heard it in a faculty room. I heard someone say, 'what am I supposed to do? I got these people at two distinct levels,' and I fell into that trap" (Light, 2021). These ablest attitudes all but ensure that a student will not become proficient.

On the other hand, there are factors that districts must balance when choosing the best model. One of the most difficult factors districts in lower income areas must balance is a tight budget and limited staffing resulting from a highly inequitable school funding model in Pennsylvania. In some cases, this practice predisposes students to struggle with inequity and access to grade level content because of larger organizational structures, rather than attributing inequity

to teachers' discrimination. So, rather than being limited by their own disabilities or by instructors' biases, the students may be limited by an inequitable educational system.

1.1.8.6 Evidence Pointing to the Problem

Over multiple occasions, I had the opportunity to cover the other general education classes. The difference in engagement, independence, and vernacular was remarkable when comparing the students' inclusion classroom with the students in the general education classrooms. On the surface, one may assume that this justifies the tracking of lower and higher students. However, when I have my students engaged in discussion in my learning support classroom, I do see an age-appropriate level of intellectual engagement in the learning support students. However, there is a clear gap in spoken vocabulary level. This disparity is increased by being placed in a setting where they simply do not hear the academic discourse from their peers, and a limited amount of exposure coming from their teachers.

The practice of tracking from the early grades on serves as a self-fulfilling model. Because the students did not have equitable education, they have missing foundational skills that are impossible to recover from. The gap in skills compounds quickly from one year to the next. This, then, serves to perpetuate the stigma that the students in the inclusion classroom are incapable of grade-level intellectual thought, analysis, and discourse.

When we engage students in high-quality dialogue, they gain better proficiency in vocabulary. While traditional vocabulary learning in the general education setting relies on reading Academic Vocabulary in the context of a written text and writing in response to vocabulary prompts, this is not the most effective approach for students who do not read or write fluently. Further, classroom discourse using targeted vocabulary may help students build stronger semantic connections which improve comprehension across settings. In upper elementary grades, the

vocabulary used moves from informal colloquial words to more robust, content-specific academic vocabulary. Bringing this information to the relevance of my current place of practice and with Academic Vocabulary, a crucial practice to negate the effects of multiple linguistic factors on academic growth is to include vocabulary in discussions (Barr et al., 2019; Uccelli et al., 2015). Therefore, an effective vocabulary intervention benefits a neuro-diverse upper-elementary population through rich dialogue that does not rely solely on reading or writing abilities.

1.1.8.7 Fishbone Diagram: Analyzing Possible Root Causes

Through empathy interviews and focus groups, the educational placement and accommodations provided to address the vocabulary needs of students with reading disabilities is perceived to be inadequate. Using a fishbone analysis, I incorporated another perspective and a reanalysis on the interplay between education and beliefs which staff, faculty, and leaders may bring with them (see Figure 1). These perspectives may drive the inequity in educational placement and instructional decisions, and therefore, the inequitable educational landscape that students experience. While there may be an influence of culture on regional linguistic norms, I find it necessary to recognize that there are decision makers that already recognize inequity and have a desire to make a change.

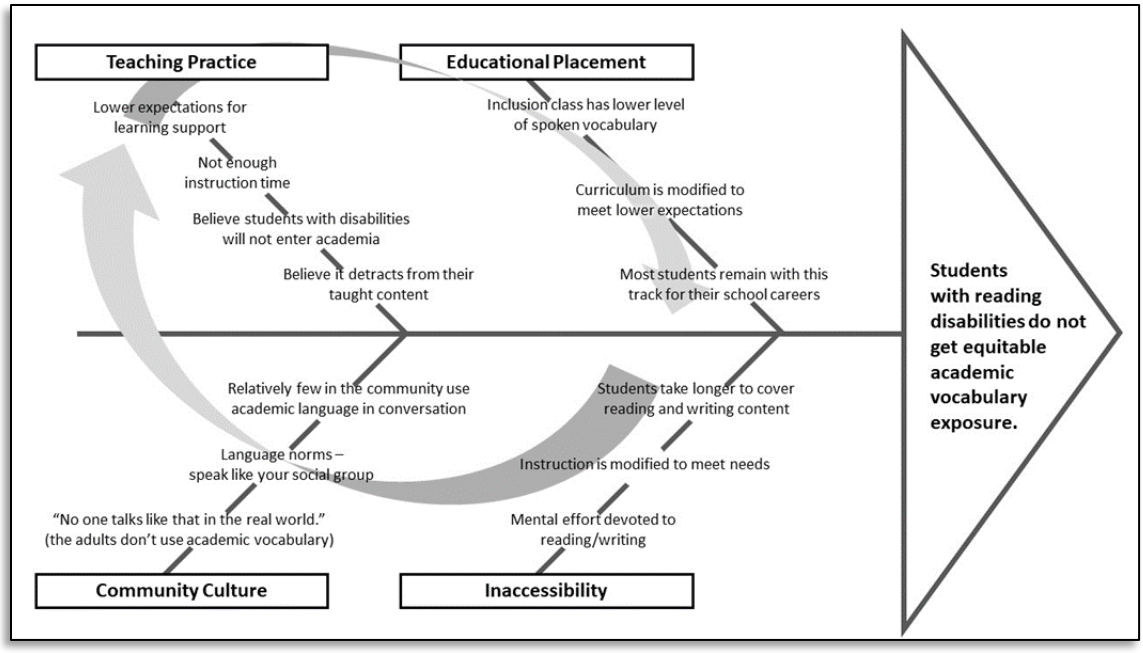


Figure 1 Possible Root Causes: Low Academic Vocabulary Skills in 5th Grade Students With Reading Disabilities

Students with specific learning disabilities are tracked overwhelmingly in the early grade levels into cohorts. Tracking results in a highly inequitable education. The inequity for students with specific learning disabilities begins in the early elementary grades and continues into the middle grades. The fifth-grade students with specific learning disabilities entered third grade with an IEP. Over the past 7 years, I have observed greater than 80% of fifth-grade students with reading disabilities assigned to an educational track where they remain with this cohort of peers through the upper elementary and middle school grades. To consider this inclusion, a portion of the general education students in this cohort progress with them. These non-disabled students are at risk of failing or falling behind. The third- and fourth-grade classrooms are self-contained and every year the inclusion classroom is cotaught with a general educator and special educator. Together these classrooms are presented with a modified curriculum. When the students reach fifth grade, the inclusion student group remains the same, but the instructors are departmentalized.

So, beginning with the fifth-grade level, students with disabilities have the same general education teachers as the general education population. However, because the inclusion class was grouped in a mostly homogenous manner, the curriculum is significantly modified for that group. The benefit of this model is the ability of the special educator to push-in and co-teach with the general educator. The drawback is that the entire cohort of students receive a different education. The gap in education increases every school year, and each subsequent year it becomes more difficult to close the difference. Therefore, the instructional system is missing adequate approaches that remediate the vocabulary exposure. In the case of specific reading disabilities, reading and writing is the primary mode to deliver Academic Vocabulary terms but because these are the skills that are restricted due to their disability, it is not the most effective way for this population of students to meaningfully participate academic vocabulary learning. The current practice fails to provide appropriate and adequate academic vocabulary exposure which is foundational to adequate comprehension of Pennsylvania Core Curriculum Standards. Current practice potentially restricts their educational development beyond vocabulary itself.

1.1.8.8 Teachers' Reduced Expectations

Partly to accommodate the effects of educational tracking, the teachers modify the curriculum to meet lower expectations. In the 2022-2023 school year, twenty-four students were enrolled in the fifth-grade Inclusion Reading Classroom. Of these 24, 15 or 62.5% of the students have an identified disability related to learning and had an Individualized Education Plan (IEP). When students with academic needs are placed within one setting, it takes longer to accomplish the same tasks as the other general education classrooms. This is because the teachers spend more time moving throughout the room giving individualized attention. Over the years, students' dependence on this level of support has created a situation where the entire group has become less

able to work without a high degree of scaffolding. To get through the content, the teachers are forced to cut back on the depth of the content presented to the inclusion class. Often, one of the things lost is vocabulary rigor. The organizational structure may partly drive teacher instructional practices.

1.1.8.9 The Pygmalion Effect

The practice of tracking and providing inequitable education from the early grades on serves as a self-fulfilling model. Because students are not expected to perform at grade level, they hear a different level of vocabulary throughout their foundational school years. As a result, the students did not have the same quality of education.

Inequity in educational placement leads to inequity in educational quality. This, in turn, leads to an inequity in vocabulary which obstructs the students' ability to access the curriculum in upper elementary and beyond. While it is necessary to continue to instruct students with reading disabilities at their individual levels, relying on the content at this reading level is not necessarily at their intellectual level. In short, these students' reading levels are not necessarily aligned with their intellectual ability. Withholding the intellectual benefits of academic vocabulary only because a student cannot read fluently is analogous to not allowing the student to attend classes on the second floor because they cannot climb steps. We cannot determine the students' potential until we remove unnecessary barriers. While we must continue to provide reading intervention, we should concurrently provide vocabulary exposure in ways that do not allow the lesson presentation to be a barrier.

2.0 Theory of Improvement and Plan for Change

2.1.1 Professional Context and Role

My background in psychology, early childhood development, early childcare management, as well as experience in both general and special education from the preschool to upper elementary levels has provided a broad understanding of the implications of language in child development and special education. For the purposes of this problem of practice, I will focus on my place of practice in a public-school district in rural Pennsylvania. The overall student population has declined over the years and families face economic insecurity.

The curriculum utilized in the fifth-grade learning support classroom in the current school setting does not engage students actively in the use of Academic Vocabulary terms. Further, to address phonological decoding needs, the district is placing more emphasis on utilizing a separate phonologic instructional system within the learning support reading class. As such, there is inadequate time left to incorporate additional vocabulary lessons. Therefore, students receiving special education services for reading may not be given adequate opportunities to engage in grade-level academic vocabulary discourse and practice at their instructional reading levels. Prior to the completion of this improvement plan, students enrolled in the inclusion classes were not exposed to the same student-to-teacher and student-to-student vernacular as their non-disabled peers. Over their academic careers, this gap may become increasingly difficult to close.

2.1.2 Summary of the Literature Review

The review of literature revealed that socioeconomic factors provide little insight into my students' language backgrounds, but it did reinforce the importance of vocabulary exposure towards future academic achievements. Additionally, this review highlighted key principles to keep in mind when designing effective strategies, careful selection of vocabulary, cross curricular design, and emphasis on reciprocal dialogue rather than using the vocabulary in reading and writing prompts.

Studies have shown the importance of a language-rich environment for student learning, including the importance of teaching language in the classroom (Beck, et al., 2013). Studies have shown the consequences of less language exposure on children's language and reading development. These studies point to the importance of language use in caregiver-child engagement (Durham & Smith, 2006; Ralph et al., 2020). Since educators are the adults that spend with most students' during their waking, it is then the responsibility of educators to provide much of the language exposure, rather than defaulting the responsibility onto the parents or guardians in the few hours, if any, that they have with their children.

2.1.3 Aim and Driver Diagram

To provide crucial foundational Academic Vocabulary that aligns with the PA Common Core Curriculum and Eligible Content to students with specific reading disabilities in the upper elementary inclusion setting, my aim was 4 out of every 5 students with reading disabilities will master 11 frequently used Academic Vocabulary terms with a minimum of 80% accuracy within a given school year. To accomplish this, students and teachers in the inclusion and pull-out

classrooms were given specific Academic Vocabulary terms to focus on and were provided with support in implementing the usage of the Academic Vocabulary terms within the existing curriculum in a way that coordinates the introduction and practice in a cross-curricular design. Support included multi-modal strategies that capitalized on individual strengths and supported instruction through reciprocal dialogue rather than relying primarily on reading and writing to master the vocabulary.

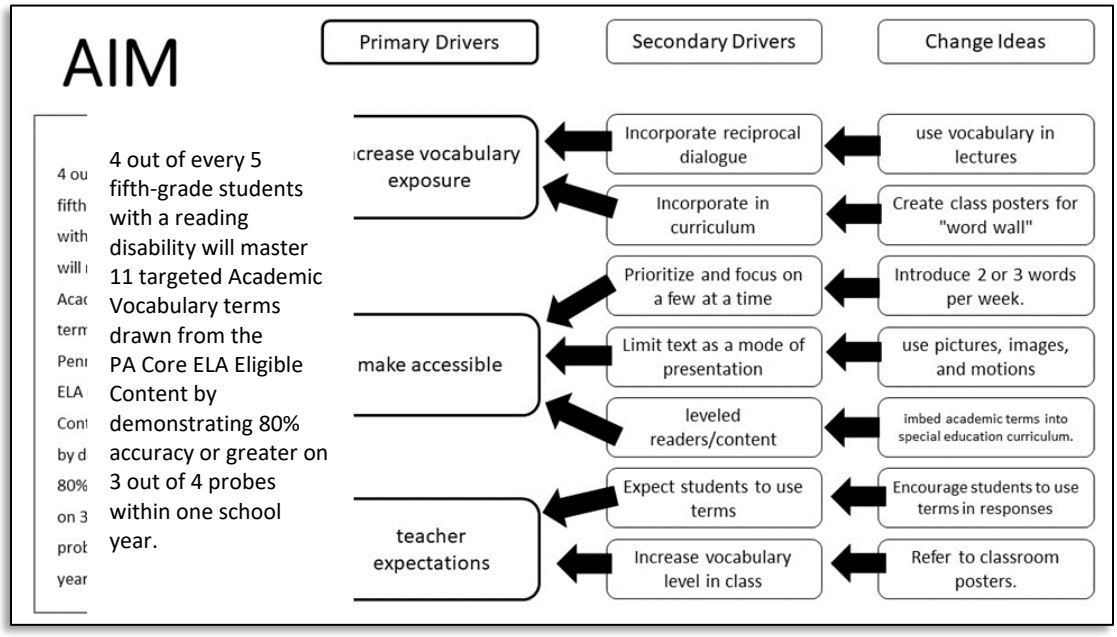


Figure 2 Aim Statement and Driver Diagram

2.1.3.1 Primary Drivers

My primary systems drivers are vocabulary exposure, accessibility, and teacher expectations. First, vocabulary exposure is not equitable, meaning that students in the inclusion group experience classroom dialogue with a lower vocabulary level. Second, the exposure to academic vocabulary before a change was implemented relied on responding to text selections with written essays. Because students with reading disabilities struggle with reading and writing

more than their non-disabled peers, they devote their cognitive resources to the act of reading and writing above their level and cannot equitably devote their mental workload to learning and applying academic vocabulary in context. Third, teachers are provided with limited time resources (Light, 2021). The inclusion classroom consistently requires more time to accomplish the same material when compared to the other general education classrooms, instruction must modify the content. This, assumptions about student abilities, and teachers' linguistic norms may result in a tendency to lower the academic vocabulary in lesson presentations. Academic vocabulary is one thing that may have been lost in lesson modification prior to the current improvement project.

2.1.3.2 Secondary Drivers

To provide crucial foundational Academic Vocabulary that aligns with the Pennsylvania Core Curriculum and Eligible Content to students with specific reading disabilities in the upper elementary inclusion setting, it is key to consider the needs of students with disabilities. Specifically, students with reading disabilities need more repetition with new Academic Vocabulary than their non-disabled peers. Further, these students have greater success with proficiency if the vocabulary exposure is used in reciprocal dialogue across multiple settings and in contexts beyond reading the Academic Vocabulary in text. However, for a multitude of reasons students with disabilities in the current setting have less exposure to robust language than their non-disabled peers.

2.1.3.3 Change Idea

For this improvement project, I proposed targeting two to three vocabulary words per story unit in the Inclusion Reading classroom and providing the fifth-grade Inclusion Reading and Special Education Reading classrooms with posters that pair the targeted Academic Vocabulary.

These will serve as a reminder for the teachers and students to use academic vocabulary in classroom discussions.

2.1.3.4 Increase Academic Vocabulary Exposure

To improve equitable exposure to academic vocabulary, we first included the use of the targeted Academic Vocabulary terms in classroom discussions. Academic Vocabulary terms were paired with exemplary reading selections that were incorporated into the existing reading curriculum. To accomplish this, we:

1) Use targeted vocabulary in classroom lectures.
2) Refer to the posters during classroom discussions.
3) Increase Accessibility of Vocabulary

First, the general and special education teachers broke the list of Academic Vocabulary terms into groups of 2 or 3 words and aligned them to the existing curriculum scope and sequence. After effective implementation, the exposure to Academic Vocabulary was not solely provided through reading and writing the words. Rather, academic vocabulary was presented in reciprocal dialogue and scaffolded with visually simple posters. Furthermore, students demonstrated the use of Academic Vocabulary in the learning support reading classroom with material that is at their instructional level. To accomplish this, we:

1) Aligned a maximum of three words per reading selection from the general education reading curriculum.
2) Used Academic Vocabulary in dialogue and reduced the reliance on reading and writing to gain exposure to the Academic Vocabulary.

2.1.3.5 Increase Teacher Expectations

Teachers encouraged students to practice using Academic Vocabulary terms in classroom discussions. The teacher modeled the use of academic vocabulary and encouraged reciprocal dialogue. This was predicted to increase the number of times students heard their teachers and their classmates use a higher vocabulary level. To accomplish this, we:

1) Referred to the vocabulary posters during classroom discussions.
2) Encouraged students to respond to discussion prompts with the use of Academic Vocabulary.

2.1.3.6 Change Summary

My proposed intervention was to intentionally incorporate the use of academic vocabulary in classroom dialogue in the fifth-grade Inclusion Core Reading classroom. I proposed focusing on two to three words at a time, scaffolding daily classroom dialogue with visually simple posters that demonstrate the application of academic vocabulary.

2.1.3.7 Overview

In collaboration with the fifth-grade General Education reading teacher, we selected a set of eleven academic vocabulary words from the Pennsylvania Core ELA Standards (Pennsylvania Department of Education, 2014). We targeted two or three vocabulary words at a time, aligning the terms with the existing general education core reading curriculum. My proposed intervention is twofold. First, we display academic vocabulary posters to serve as a reminder to incorporate vocabulary in discussions and second, we intentionally align the vocabulary to the general education reading units targeting the terms in reciprocal dialogue.

2.1.3.8 Questions

Through this PDSA, I aimed to answer the following questions:

1. Will incorporating academic vocabulary into the classroom environment increase the number of times students hear and use the Academic Vocabulary terms in classroom dialogue?
2. Will an increase in the use of Academic Vocabulary in reciprocal inclusion-classroom dialogue increase the students' ability to apply the same vocabulary in in my learning support reading classroom when responding to vocabulary prompts at their reading level?

2.1.3.9 Predictions

First, I predicted that an increase in reciprocal dialogue applying the targeted Academic Vocabulary terms in the inclusion Core Reading Classroom would result in ability to use the Academic Vocabulary terms in context in the Pull-Out Special Education Reading Classroom when students with reading disabilities w presented with instructional content at their ability level. If students with reading disabilities can use academic vocabulary in these two classrooms, this demonstrates mastery and an ability to generalize academic vocabulary across settings.

Second, I predicted that incorporating posters that with minimal text and images may scaffold the use of targeted academic vocabulary during classroom discussions by reminding students and teachers to use Academic Vocabulary terms. If the number of times that the targeted Academic Vocabulary terms increase when the posters were incorporated, then this demonstrated that the posters were effective in increasing the number of times the words were used in the classroom dialogue.

2.1.4 Student Population

Students in this improvement project were enrolled in the on-campus fifth-grade Inclusion Core Reading Classroom as well as the fifth-grade Special Education Reading Classroom. These students were identified with specific reading disabilities and read well-below grade level. The students all had Individualized Education Plans (IEPs) with reading goals. The same group of students were monitored at each stage of the implementation. No new students enrolled in the program and no students disenrolled from the school throughout the duration of the improvement project.

For the 2022-2023 school year, the fifth-grade Inclusion Reading classroom was comprised of twenty-four students. During the fifth class period of the school day, the Inclusion Reading class period, the General Education Reading teacher, and the Special Education teacher cotaught and were occasionally assisted by a classroom aide. Within this classroom, there are nine students in the class who do not have an identified disability. The remaining fifteen students have Individualized Education Plans (IEPs) and were identified with a disability. Twelve of these inclusion students with IEPs were also enrolled in the pull-out special education reading classroom for additional reading instruction during the third class period of the school day. Part of the Special Education instruction in the Special Education class period included instruction from the SRA Corrective Reading Decoding Strategies series which is a leveled direct-instruction program that addresses deficits in reading fluency and comprehension. For the 2022-2023 School Year, the fifth-grade students enrolled in this class were assessed and placed in one of two reading groups. The lower reading group received instruction from Decoding Strategies Level B1, and the higher reading group received instruction from Decoding Strategies Level B2.

2.2 Data Collection Methods

According to Brandi Nicole Hinnant-Crawford's book, Improvement Science in Education (2020), there are four measures of change that guide the implementation of a change idea. While the outcome measure, otherwise known as the lagging measure, shows whether the change occurred in the end, it is important to track the entire system during the implementation (Hinnant-Crawford, 2020). When assessing the system, potential drivers were identified. A driver measure indicates changes in the driver towards the goal and are recorded more frequently than the outcome measure (Hinnant-Crawford, 2020). Next, it is important to measure the process within the system when the change idea is being implemented. The process measure is recorded more frequently than the driver measure and monitors the fidelity of the implementation, or how well the change idea is being implemented (Hinnant-Crawford, 2020). Finally, it is essential to document the impact on the entire system to ensure that the change does not create more harm than good. This is done with a balance measure (Hinnant-Crawford, 2020). While implementing this PDSA, I collected both quantitative and qualitative data and then revisited the data collection and assessment measures. Upon completion, I generated an Excel file that enabled me to analyze the data.

2.2.1 Driver Measure

The driver measure is designed to monitor the degree that the change implemented is having the intended effect. I identified that inequity and accessibility of academic vocabulary exposure for students with reading disabilities drive their poorer vocabulary knowledge. I predicted that with academic vocabulary posters will remind the teachers and students to include the use of academic vocabulary in their discussions. To measure the use of the Academic

Vocabulary terms, I selected 15-minute observation periods that occurred at five points during every story unit. I collected quantifiable data that allowed me to record the utterance of each of the eleven academic Vocabulary terms and code for whether a student or a teacher uttered it.

2.2.2 Process Measure

The process measure was designed to monitor the degree that the change was implemented. Throughout the cycle, I met with the general education reading teacher to determine if there were any challenges that made it difficult to incorporate academic vocabulary into the classroom discussions. I evaluated whether changes needed to be made to the support vocabulary use the classroom based on factors the regular educator and I believed may have been driving the data we observed. Through this qualitative data, I evaluated what the data collected from the driver measure represented. I used this information to determine modifications that needed to be made to the change idea, data collection and student tests in subsequent change cycles. In addition to this, we met to answer the following questions to collect qualitative data:

1. What challenges prevented or limited the number of times we were able to incorporate academic vocabulary in the classroom dialogue?
2. Are there any words that were particularly challenging to incorporate in the dialogue? Why?

2.2.3 Balance Measure

The balance measure was designed to monitor any unintended effects the change had on other parts of the system. Throughout the cycle I met with the students and the regular education

teacher to determine if there are unintended effects that occurred because of the changes. I considered ways to mitigate the undesirable impacts to the students. To document qualitative data regarding the balance measure, we met to answer the following questions:

3. What unwanted effects did this change have on instruction?
4. Were there any ways we could improve the next cycle of instruction to mitigate unwanted effects?

2.2.4 Outcome Measure

The outcome measure determined if students were able to demonstrate improved mastery of Academic Vocabulary terms in the pull-out learning support reading classroom. To determine which terms each of the students have mastered, the students were presented test questions based on leveled reading selections from the SRA Corrective Reading Decoding Strategies textbooks. This curriculum is specially designed for students with reading deficits. The fifth-grade special education reading classroom was broken down into two leveled-groups. The lower learning support reading group worked out of the Corrective Reading Decoding Strategy at Level B1 (Engelmann, S. 2008a), and the higher reading group worked out of Corrective Reading Decoding Strategy Level B2 (Engelmann, S. 2008b). Applying the use of Academic Vocabulary terms at an appropriate reading level in the Special Education setting demonstrated whether the students were able to generalize the meaning of the academic vocabulary terms outside of the inclusion reading setting. To efficiently collect the quantifiable data, I recorded the data in a table that sorted whether the students responded correctly to each vocabulary term.

I began the first cycle with a baseline assessment in which students' ability to apply Academic Vocabulary terms before any changes were made. Utilizing leveled reading passages,

questions were designed at the students instructional reading level. I collected quantifiable data during small group discussions by tallying the accuracy students could identify the correct Academic Vocabulary term when presented with a prompt. Following a small group read-aloud of a passage from the McGraw Hill SRA Decoding Strategies Level B2 text (see Appendix A-D) the higher reading group was presented with printed vocabulary questions and vocabulary word choices (see Appendix G-H). Following a small group read-aloud of a passage from the McGraw Hill SRA Decoding Strategies Level B1 text (see Appendix E) the lower reading group was presented with printed vocabulary questions and vocabulary word choices (see Appendix I-K).

To accommodate individual disability needs, prompts and Academic Vocabulary terms were read aloud to the students individually. The same methods at the end of each story unit and the Academic Vocabulary in a cumulative fashion. The outcome was recorded for each cycle.

Prior to this improvement plan, a pretest was given. Because it took an extended length of time to complete the whole test, it was determined that administering these test multiple times would interfere with instruction when given twice per story unit. So, the test was modified to provide one pretest and one posttest for each term and introduce the questions as they were aligned with each story unit. The intention was to limit the number of questions presented to three or fewer at a time. However, after evaluating the second cycle, a pattern emerged that indicated students did not perform as well on subsequent tests. The next test design added new test questions and retained the previous questions in a cumulative fashion as the terms were added to the list to monitor progress.

2.3 Intervention Plan: Plan, Do, Study, Act (PDSA) Cycle Description

2.3.1 Plan

On October 10, I met with the general education teacher to establish the list of Academic Vocabulary to focus on in this improvement project. We aligned the vocabulary to the scope and sequence of the reading curriculum. Academic Vocabulary terms were introduced in the class without the change. I began the first PDSA cycle with a baseline assessment in which I documented student ability to apply Academic Vocabulary that was covered during my pull-out learning support reading lessons. We introduced the change during the beginning of the second PDSA cycle with a poster that provided the story units' targeted vocabulary words. This was referred to during classroom discussions. In a co-teaching model, we scaffolded the use of Academic Vocabulary. In my pull-out reading lessons, I noted if students were able to apply the Academic Vocabulary in their responses to leveled reading material. I meet with the general education reading teacher throughout the implementation to discuss the process and any improvements or modifications we felt needed to be incorporated in the next cycle.

Students were presented with vocabulary questions that applied the targeted Academic Vocabulary to the special education curriculum utilized in the pull-out special education reading classroom. As mentioned above, the learning support reading classroom was grouped based on assessed reading level. The lower group was comprised of five students who received instruction out of the SRA Corrective Reading Decoding Strategies level B1, and the higher group was comprised of seven students and received instruction from Level B2. To determine if the students could generalize the vocabulary knowledge gained from the Inclusion Reading Classroom to the pull-out special education curriculum, I selected one story for each of the two groups directly from

the Decoding Strategies text selections (See Appendix A-E). Based on these leveled stories, I created comprehension questions that applied each Academic Vocabulary term to the stories. These questions remained the same for the duration of this project.

2.3.2 Do

We introduced the change during the beginning of the second marking period with a poster that provided the unit's targeted vocabulary words. Beginning before the change idea was implemented and continuing throughout the timeline of this improvement project, I documented how often all eleven Academic Vocabulary terms were used in dialogue and noted if it was used by the teacher or by a student. I monitored the incidents of applied academic vocabulary in classroom dialogue throughout the PDSA cycles. In a co-teaching model, the general education teacher and I facilitated the use of Academic Vocabulary during instruction. In my pull-out reading lessons, I assessed if students were able to apply the academic Vocabulary in their responses to leveled reading selections in a separate learning support class period about passages at students' diagnosed reading level.

2.3.3 Study

This plan employed a mixed method by collecting and analyzing quantitative and qualitative data throughout the change cycles and adjusting implementation based on data gathered from process measures, driver measures, balance measures, and outcome measures. Notes were reviewed and analyzed before making changes to implement in the next PDSA cycle.

2.3.4 Act

We began the first reading selection with no change to the story unit presentation. I recorded the number of times the eleven targeted Academic Vocabulary were uttered by the teachers and students in the inclusion classroom. Throughout the PDSA cycles I documented changes and collected data. The first change was implemented with the second story unit in which we introduced simplified posters that had only the Academic Vocabulary terms covered in the first and second story unit. As we continued with each PDSA cycle, we began utilizing the new academic vocabulary in classroom dialogue.

3.0 Results

The implementation of this improvement plan followed a total of 4 PDSA cycles. Initially, I had intended to start the implementation of the program at the start of the school year with the first literary selection, *Ropeburn* by Jan Siebold. However, I did not receive approval in time and the school year began. That said, I was able to make effective use of this delay because I was able to better streamline the data collection methods.

To accommodate this change in plan, the Regular Education Reading Teacher and I changed the Academic Vocabulary terms. I was able to utilize this time to rehearse collecting data and find modifications that needed to be made. I discovered that the students this school year worked significantly slower than I had anticipated. It was apparent that providing an 11-question test would interfere with the instruction if assessed at the beginning and end of every story unit. I also discovered that collecting observation data for the whole class period was going to be problematic because the students needed me to support them with skills such as folding paper, printing their names, and other tasks that impeded their ability to participate independently. Additionally, I was able to document that the academic vocabulary words were not used at all prior to my baseline observation.

3.1 Pre-PDSA: Ropeburn by Jan Siebold

At the end of August 2022, I met with the General Education Reading teacher to plan out the Academic Vocabulary terms to focus on in this improvement project. We drafted a scope and

sequence to address the Academic Vocabulary terms throughout 4 story units; *Ropeburn* by Jan Siebold, *Chang and the Bamboo Flute* by Elizabeth Starr Hill and *When Washington Crossed the Delaware* by Lynne Cheney (Farr et al., 2008a; Farr et al., 2008b; Farr, R. C., Strickland, D. S., & Christensen, B., Farr et al., 2008c; & Farr et al., 2008d). I did not get final approval from the University to begin this improvement project before the school year and the first story unit began. But I had already run through the observation procedure and the preliminary testing data collection method and found minor changes needed to be made to reduce the unwanted impacts to instruction. There were two areas I modified. First, the pre- and posttest took too long and interfered with instruction. Therefore, I shortened the test to focus on the Academic Vocabulary terms that aligned with the first and second story units. Second, I could not provide students with the support they needed while collecting observation data on the usage of vocabulary. So, I modified the observation schedule from three whole class periods to 5 days of 15-minute observations for each story unit. I began the observation session clock when the Regular Education Reading teacher began the core instruction on the story unit. Also based on this change in the start date, The Core Reading teacher and I revisited the scope and sequence and finalized a total list of 11 Academic Vocabulary terms that replaced *Ropeburn* at the beginning of the school year with the corresponding Academic Vocabulary in *Stormalong* by Mary Pope Osborne as the final PDSA cycle (Farr et al., 2008e). Hereafter, these story selections will be referred to as *Chang, Nelly, Washington,* and *Stormalong,* respectively. The finalized scope and sequence were as follows: on October 11 we introduced *Chang* (Farr et al., 2008b) with the Academic Vocabulary terms trait, genre, and theme; on November we 14 introduced *Nelly* with the Academic Vocabulary terms sequence and motive; on December 5 we introduced *Washington* with the Academic Vocabulary

terms compare, contrast, and purpose; and on January 3 we introduced *Stormalong* with the Academic Vocabulary terms hyperbole, cause, and effect.

At the beginning of the *Ropeburn* story unit, I provided a pretest with the Academic Vocabulary that aligned with the story and at the end of the story unit I followed up with the same test and answer choices. Because the finalized academic vocabulary list did not include the Academic Vocabulary that aligned with the updated scope and sequence, this pre- and posttest data was eliminated from this improvement project, and I did not include the Academic Vocabulary in my observation data collection. However, this preliminary cycle did offer an opportunity to address problems with data collection. I discovered that when I administered the initial pretest, the students took far longer to complete it than I expected. I decided to only assess the academic vocabulary that aligned with the current story unit with the comprehension questions.

So, for the baseline cycle I collected observations on all 11 Academic Vocabulary and gave pre- and posttests for the vocabulary terms trait, genre, and theme during the *Chang* story unit. Further, I conducted observations in 15-minute segments on the first day of the story, three times in the middle, and then once on the last day of instruction during the review and study guide activity. I tallied the occurrence of any of the total list of 11 Academic Vocabulary, but the students were only assessed on the first three Academic Vocabulary for this first cycle. This was done to help to reduce the length of the assessment to accommodate the students' slower pace. I did not introduce posters at this time, so the *Chang* story unit served as a baseline measure.

3.2 PDSA 1: Baseline Results, Chang and the Bamboo Flute by Elizabeth Starr Hill

3.2.1 Do

Armed with the finalized academic vocabulary list and a better data collection method, I was able to begin the baseline PDSA cycle on October 11. The Regular Education Reading teacher and I did not introduce any posters for the *Chang* story unit. I began collecting observation data on the Academic Vocabulary usage on trait, genre, theme, sequence, compare, contrast, purpose, hyperbole, effect, and cause in classroom dialogue during 15-minute samples over five separate observation days during the *Chang* story unit. Even though we aligned trait, genre, and theme with *Chang*, the Academic Vocabulary term "theme" was not observed being used during this first baseline cycle. It is, however, a part of the curriculum and is briefly mentioned in the text on the first day as part of the regular curriculum for every story unit. Therefore, the Academic Vocabulary term was used outside of observation times. The Academic Vocabulary terms trait and motive also were used in the *Ropeburn* story unit prior to this cycle.

3.2.2 Study

To study the results, I tallied up observation data to determine if the targeted Academic Vocabulary terms were being used in classroom discussion. I started the 15-minute observation clock when the Reading Teacher began the core lesson instruction and captured the data from the classroom dialogue. As such, I am confident the frequent observations accurately reflected the trends over time because I was focused on the class time when there was the most discussion. I then compared the pre- and posttest results for "genre," "motive," and "theme." Because of

conflicts in schedules and the importance of minimizing the impact of vocabulary testing probes on the typical classroom activities, I could not administer the first pretest until October 19.

3.2.2.1 Observation

Overall, there were twenty-six observed occurrences of any Academic Vocabulary terms from the list and twenty-eight occurrences of the Academic Vocabulary on the total vocabulary list during the *Chang* PDSA cycle. But the Academic Vocabulary was not used on more than one day each. On the first day of observation, the Academic Vocabulary term "genre" was used eight times and the Academic Vocabulary term "motive" was used two times on October 11. On the last observation day in this story unit, "trait" was used thirteen times. The Academic Vocabulary term "motive" aligned with the second PDSA story. Overall, the academic vocabulary words in this PDSA cycle were observed on two out of the 5 days of observation. This provides confidence that the observation data collection will represent typical vocabulary usage over time. The observation data from this first PDSA cycle also supports the premise of this problem of practice; academic vocabulary might not be used frequently enough in the inclusion classroom dialogue.

Table 1 *Chang and the Bamboo Flute* Observed Vocabulary Usage

Date:	10/11/2022		10/18/2022		10/20/2022		10/24/2022		11/1/2022			
Time:	11:35-11:50		11:22-11:37		11:28-11:43		11:07-11:22		11:05-11:20			
	Beginning		Middle 1		Middle 2		Middle 3		End			
	S	T	S	T	S	T	S	T	S	T		total
trait									2	11		13
theme												0
genre	5	8										13
motive		2										2
sequence												0
compare												0
contrast												0
purpose												0
hyperbole												0
cause												0
effect												0
	5		0		0		0		2		Student	7
		10		0		0		0		11	Teacher	21
											Both	28

S = student, T = teacher

3.2.2.2 Outcome

I presented the pretest on the first day of instruction and the posttest occurred after the last day of the story unit instruction. Trait had a similar outcome, with ten out of twelve students responding correctly on the pretest and nine out of twelve correct on the posttest with one student absent resulting in a missing data point that explains that difference. But "genre" went from 9 to 5 correct responses, and "theme" went from 10 to 6 correct responses. While these two also represented one missing data point which accounted for one incorrect answer each, there was a

drop in the class scores. No change had been made; however, this baseline supported the main supposition. Academic Vocabulary was not being used adequately in classroom dialogue.

Another unexplained issue was the drop in performance. The results showed that more students responded correctly to the vocabulary items shortly after the words were used in discussion, but by the second test which were the exact same questions and answer choices, fewer students answered correctly. At this starting point in the PDSA project, it was unclear why some students did not do as well on the second vocabulary probe.

Table 2 *Chang and the Bamboo Flute* Total Correct Responses to Vocabulary Question

	Student >	A	B	C	D	E	F	G	H	I	J	K	L	total correct
Pretest	traits	1	1	1	1	1	1	0	1	1	1	0	1	10
	genre	1	0	1	1	1	1	0	1	1	1	0	1	9
	theme	1	0	1	1	1	1	1	1	1	1	1	0	10
Posttest	traits	1	1	1	1	1	0	1	1	1	1	0	*	9
	genre	1	1	1	0	0	0	0	0	1	1	0	*	5
	theme	1	1	1	0	0	0	0	0	1	1	1	*	6

*Missing data due to extended student absence.

3.2.3 Act

The data collection went well with observation and the vocabulary probe. The method of collection was doable and least intrusive to classroom activities. In addition to the drop in student vocabulary probe scores, I observed that students were losing vocabulary skills during lessons outside of this study. The typical instructional model prior to making changes seemed to focus heavily on introducing Academic Vocabulary in the beginning but not revisiting and reinforcing the usage throughout the lesson through dialogue.

3.2.4 Plan

For the next cycle, I continued with the data collection method. I noted that the timing of the beginning of the story includes introduction of targeted Academic Vocabulary terms, and this may have influenced the pre-test scores. However, there was a limit to what could be done because there was a short window of time between one story unit and the next, the test had to be administered during third-period in the Learning Support Reading class and the core reading instruction occurred in the fifth-period Inclusion Core Reading class, and further the vocabulary test had to fit in before the graded classroom reading test.

This group of students needed additional time for testing, and it was important to not interfere with the students' graded classroom tests by tacking additional questions onto the end of it. Therefore, the pretest had to be given immediately after the introduction of the story and the posttest had to be given on the day when it would not interfere with their education but two class periods before the graded general education reading test which also included some observational data on the review and warm-up sessions.

Further, while the unit plans draft out a timeline for lessons and testing, the inclusion class schedule frequently changes depending on how much material is covered. Also, to shorten the test and reduce the impact of data collection, the next cycle only collected test data for the Academic Vocabulary terms that aligned with that story test. It was predicted that introducing posters will increase the usage of academic vocabulary and result in an improvement in student accuracy on their academic vocabulary test.

For the next cycle we planned to introduce *Nelly* and posters for sequence and motive. I continued to collect observation data on all vocabulary in this PDSA plan in the same way. It was important to monitor continual usage of the cumulative list of Academic Vocabulary terms in the

students' test responses while monitoring whether usage in dialogue decreased, remained the same, or increased.

3.3 PDSA 2: Teacher-Made Posters With Academic Vocabulary *The Daring Nelly Bly: America's Star Reporter* by Bonnie Christensen

3.3.1 Do

The second PDSA cycle started with the *Nelly* unit on November 14. After coordinating with the Reading teacher, we introduced posters for the Academic Vocabulary, "sequence," and "motive." As with the previous PDSA cycle, I continued to observe the usage of trait, genre, theme, sequence, compare, contrast, purpose, hyperbole, effect, and cause during 15-minute samples over five separate observation days.

3.3.2 Study

The observation and student vocabulary test data for this unit was collected in the same way as the previous cycle. The Academic Vocabulary used for the *Nelly* story unit were "motive," and "sequence." This time, we introduced the academic vocabulary posters.

3.3.2.1 Observation

The total number of times that the Academic Vocabulary terms were used remained the same as the *Chang* unit; from twenty-eight last cycle to twenty-eight times this cycle. However,

the number of observation periods increased from two out of five observation days during the *Chang* PDSA cycle to four out of five observation days for the *Nelly* PDSA cycle. The Academic Vocabulary observed were "trait" (five times on one day), "motive" (eleven times over three days), and "sequence" (twelve times over three days).

Table 3 ***The Daring Nelly Bly: America's Star Reporter*** **Observed Vocabulary Usage**

Date:	11/14/2022		11/15/2022		11/17/2022		11/18/2022		11/21/2022			
Time:	11:20 - 11:35		11:05 - 11:20		11:24-11:39		11:05-11:20		11:08-11:23			
	Beginning		Middle 1		Middle 2		Middle 3		End			
	S	T	S	T	S	T	S	T	S	T		total
trait									3	2		5
theme												0
genre												11
motive				1		2			5	3		
sequence		2		5		5						12
compare												0
contrast												0
purpose												0
hyperbole												0
cause												0
effect												0
	0		0		0		0		8		Student	8
		2		6		7		0		5	Teacher	20
											Both	28

S = student, T = teacher

3.3.2.2 Outcome

The number of students who answered correctly on both sequence and motive were eleven on the first assessment to eight on the last assessment. Trait, genre, and theme also continued to

drop. The scores are listed in order as follows: (trait 10, 9*, 6) (genre 9, 5*, 5) (theme 10, 6*, 4). This suggested that students were not retaining the skill. [1]

Table 4 ***The Daring Nelly Bly: America's Star Reporter*** **Total Correct Responses to Vocabulary Question**

	Student >	A	B	C	D	E	F	G	H	I	J	K	L	total correct
Pretest	motive	1	1	1	1	1	1	1	1	1	1	1	1	12
	sequence	1	0	1	1	1	1	1	1	1	1	1	1	11
Posttest	traits	0	1	1	1	1	0	0	1	0	1	0	0	6
	genre	0	0	0	1	1	0	0	0	1	1	1	0	5
	theme	0	0	0	1	0	0	0	1	1	1	0	0	4
	motive	0	1	1	1	1	1	0	0	1	1	0	1	8
	sequence	1	0	1	1	0	1	1	0	0	1	1	1	8

3.3.3 Act

The posters seem to have helped to some degree in increasing the number of days vocabulary was used in classroom discussions, but coordinating to create the posters ahead of time was problematic. Collaboration is an issue for multiple reasons. The instructional load also made it difficult to "introduce" a poster. What I expected to be a 2-minute introduction and preview became too intrusive into the instruction. For example, in this instance there was a phone call, a student needed to leave the room, and multiple other interruptions to the instruction happened. This is a common occurrence in the inclusion classroom which is an unavoidable feature of the instructional model. Multiple distractions caused students to disengage from the lesson and instead focused on the interruptions. Throughout the lessons and classes, some students were pulled for

[1] * Missing data due to student absence.

additional services. This happens to be particularly problematic for students with learning disabilities because they need less distraction than their nondisabled peers.

This PDSA cycle showed that students struggled with remaining focused and raised concerns about the observation data and how it applies to individual students. Just because the classroom discussion is taking place does not mean that a student was able to focus on it fully or that they were even present at the time—they may have been out receiving related services like occupational therapy. This is more evidence that the educational setting is inequitable and further reinforces the need for academic vocabulary to be used across multiple settings throughout the day. However, providing an introductory mini-vocabulary lesson does not seem to be meaningful in the inclusion classroom.

During this cycle, I only collected pretest data on the Academic Vocabulary terms "motive" and "sequence," but this was problematic because the students were losing skills and I needed to better monitor their progress. I decided that one pre- and posttest did not capture the students' retention over time. To address this, I began to collect student test data on all the cumulative Academic Vocabulary terms to monitor retention over time with the second test in the *Nelly* story unit.

3.3.4 Plan

Rather than making the posters and introducing them, we began to use store-bought posters and point to them throughout the lessons. I continued to collect observation data in the same method, but I increased the number of pre- and posttests to monitor retention of skills. The tests were designed so that the students were provided with a "word bank" to choose from. The questions remained the same over the length of the improvement plan, but the number of questions

and the Academic Vocabulary terms were cumulative so that the current Academic Vocabulary terms were added onto the word bank. I continued to read the test items aloud to the students individually to ensure they were following along. This was administered while I normally pulled them for their individual special educational service testing. This allowed me to track their performance and correlate it with the observation data to be sure that the testing data is dependable and monitored their retention over time.

On December 5, 2022, I met with the general education teacher. We discussed the Academic Vocabulary terms aligned with *When Washington Crossed the Delaware*. We also discussed reteaching the term "genre" because the test results indicated that the students were not retaining this vocabulary word.

3.4 PDSA 3: Store Bought Posters With Academic Vocabulary *When Washington Crossed the Delaware* by Lynne Cheney

3.4.1 Do

There were unexpected complications to this cycle. First, I was unable to collaborate with the Reading teacher prior to the start of the *Washington* story unit. Using the store-bought posters was a redeeming quality, however. We did not present a vocabulary mini lesson but rather referred to the posters in classroom discussions. Second, there was a substitute teacher in for the Reading teacher on December 5, which was the day that we introduced the story, *When Washington Crossed the Delaware*. The substitute did happen to use the Academic Vocabulary term "sequence" twice because she was teaching directly out of the instructional manual. Third, due to multiple school-

wide holiday events and incentives, the *Washington* story unit was administered on a short timeline. The poem that would have followed the story served as an introduction to the term "purpose" and the terms "compare" and "contrast" were all eliminated because of the time available before the winter break. In the past school years, this lesson correlated with the Social Studies lesson about the Battle of Trenton. But this year the Social Studies teacher needed to modify the curriculum for the 2022-2023 inclusion group of students because the group struggled to keep up with the curriculum students failed multiple assessments due to the significant gaps in their skills. Therefore, the students did not have the same depth of content as the other general education classrooms who were able to engage in the Battle of Trenton content.

3.4.2 Study

The observation and student vocabulary probe data were collected in the same manner. The Academic Vocabulary terms used for the *Washington* story unit were "compare," "contrast," and "purpose." This time, we did not introduce teacher-made posters but rather referred to posters throughout the rooms as Academic Vocabulary terms came up in discussion.

3.4.2.1 Observation

With store-bought posters in addition to the previous pre-made posters, the usage of Academic Vocabulary terms continued to be four out of five observation days. As with last time, three of the words were used; genre (6 times on one day), sequence (19 times over three days), and hyperbole (13 times on one day). The number of times any Academic Vocabulary term was used increased (38 observed times) and as with the previous cycle, Academic Vocabulary terms were used four out of the five days of observation.

Table 5 *When Washington Crossed the Delaware* Observed Vocabulary Usage

Date:	12/5/2022		12/6/2022		12/8/2022		12/9/2022		12/19/2022			
Time:	11:32 – 11:47		11:40 – 11:55		11:26 – 11:41		11:33 – 11:48		11:39 – 11:54			
	Beginning		Middle 1		Middle 2		Middle 3		End			
	S	T	S	T	S	T	S	T	S	T		total
trait												0
theme												0
genre										6		6
motive												0
sequence		2	1	11				5				19
compare												0
contrast												0
purpose												0
hyperbole									3	10		13
cause												0
effect												0
	0		1		0		0		3		Student	4
		2		11		0		5		16	Teacher	34
											Both	38

S = student, T = teacher

3.4.2.2 Outcome

The Academic Vocabulary terms expected to correlate with *Washington* were purpose, compare, and contrast. The number of students' correct responses to these new three Academic Vocabulary terms remained the same before and after. The scores in order are as follows: purpose (6, 6) compare (6, 6) contrast (4, 4) purpose. The words from the previous story units were progress monitored as well and showed continual drops in performance (trait 10, 9*, 6) (genre 9, 5*, 5) and theme (10, 6*, 4). This is more evidence that students may not be retaining the skill if the Academic Vocabulary terms are not continually being used, but rather only immediately after they

hear the Academic Vocabulary terms. There were two students who had consistently lower performance, which is typical in the learning support population.

Table 6 *When Washington Crossed the Delaware* Total Correct Responses to Vocabulary Question

Table 6

	Student >	A	B	C	D	E	F	G	H	I	J	K	L	total correct
Pretest	traits	0	1	1	1	1	0	0	1	0	1	0	0	6
	genre	0	0	0	1	1	0	0	0	1	1	0	0	4
	theme	0	0	0	1	0	0	0	1	1	1	0	0	4
	motive	0	0	1	1	0	1	1	1	0	1	0	0	6
	sequence	1	1	1	1	0	1	0	0	1	1	1	1	9
	compare	0	0	1	1	0	0	0	0	1	1	1	1	6
	contrast	0	0	1	1	0	0	0	0	1	0	0	1	4
	purpose	0	0	1	1	1	1	1	1	0	0	0	0	6
Posttest	traits	1	0	1	0	1	1	1	1	1	0	0	1	8
	genre	1	0	1	0	0	1	0	0	1	1	0	1	6
	theme	0	0	1	0	0	0	0	0	0	1	1	0	3
	motive	1	0	1	1	0	0	0	0	1	1	1	1	7
	sequence	1	0	1	1	1	1	1	0	1	1	1	1	10
	compare	0	0	1	1	0	0	0	0	1	1	1	1	6
	contrast	0	0	1	1	0	0	0	0	1	0	0	0	4
	purpose	0	0	1	1	1	1	1	1	0	0	0	0	6

3.4.3 Act

Again, collaboration with one another continued to be difficult. Classroom teachers are flexible and responsive, but this comes at an instructional cost. There is more evidence that students are losing Academic Vocabulary terms as they are not being used continually throughout classroom dialogue. The Reading teacher and I met and discussed students' performance and trends that I observed. We noted that eliminating the poem also eliminated "compare/contrast," and "genre" was a particularly difficult Academic Vocabulary term for the students.

3.4.4 Plan

In class we relied on posters and pointed to them throughout the lessons. The Regular Education teacher collaborated with other teachers from the fifth-grade team to brainstorm ways Academic Vocabulary could be incorporated in the instruction in those settings. During progress monitoring assessments, I continued to measure students on a cumulative list of words. I also tracked whether the loss of vocabulary mastery correlates with lack of use in class.

On January 3, 2022, I met with the general education teacher, and we discussed the Academic Vocabulary that aligned with *Stormalong*. For the next cycle, we introduced the remaining Academic Vocabulary terms; "hyperbole," "cause" and "effect." I conducted observations in 15-minute segments on the first day of the story, three times during, and then once on the last day of instruction. I tallied the occurrence of any of the total list of 11 Academic Vocabulary, and the students were assessed on all 11 Academic Vocabulary terms from this PDSA plan.

3.5 PDSA 4: Posters, Collaboration, and Coteaching Stormalong by Mary Pope Osborne

3.5.1 Do

At this point in the year, it seemed as if the process was streamlined. The *Stormalong* story unit was less rushed, and the students had gained functional reading skills. However, there were still difficulties with focus, elevated level of classroom interruptions, and the inclusion population still required a higher than typical degree with assistance with various parts of task completion.

For example, during the observation on January 4, I had to stop and reset the clock a n times due to frequent interruptions. The first time we stopped to help both disabled and nondisabled students with folding paper into thirds. Then, we stopped the instruction to explain to print name on name line but discovered that students were not sure which side of the paper to find the name line on. Then the teacher stopped the lesson to review the graphic organizer and strategy that the students have used all year long and throughout previous years. This requires the students to write the acronym "R – A – C – E – S" down the left-hand side of the folded paper. Students (both disabled and nondisabled) required individual support with this task. While there were two teachers and one aide to support this, there were twenty-four students in the classroom, making it the largest class in the grade. Therefore, it took several minutes for the adults to move amongst the students to scaffold this task. Then, two students returned from occupational therapy at 11:31, so I again stopped the clock to get them caught up. Finally, at 11:37, the Reading teacher was able to begin the instruction. That was an extreme example, however it is not unheard of to spend more than 20 minutes to support completion of a task that the students should have been able to complete independently within a couple of minutes. This anecdotal evidence demonstrates that inequitable education may not be driven by teacher attitudes, but rather a greater structural problem in the way students are assigned into an educational track. Greater than one-third of all the district's in-person fifth-grade students are assigned to this one class period. While we do split into flexible small groups, that strategy would not likely have addressed the problem with repeated classroom interruption, and students' need for support with printing their name in the correct place or creating a graphic organizer since it was the nondisabled and disabled students alike that needed help with these tasks.

On that day, the Academic Vocabulary term “hyperbole” was part of the writing prompt. The classroom dialogue began and by the end of the observation sample students used Academic Vocabulary 33 times, and the teachers used the Academic Vocabulary terms a total of nineteen times.

3.5.2 Study

The observation and student vocabulary probe data collection continued. The Academic Vocabulary used for the *Stormalong* story unit were “cause,” “effect,” and “hyperbole.” We reviewed the Academic Vocabulary “cause” and “effect” and introduced the Academic Vocabulary term “hyperbole” as examples occurred during the whole group reading of the story.

3.5.2.1 Observation

With posters up, and a concerted effort to collaborate and coteach, the usage of Academic Vocabulary increased to all five out of five observation days. The number of Academic Vocabulary used increased from 3 to 4 Academic Vocabulary terms. The number of times Academic Vocabulary terms used in the classroom increased significantly from thirty-eight times in the previous cycle to 187 times; theme (10 times over two days), cause (45 times over four days), effect (51 times over four days), and hyperbole (81 times over four days).

Table 7 *Stormalong* Observed Vocabulary Usage

Date:	1/3/2023		1/4/2023		1/9/2023		1/11/2023		1/19/2023		
Time:	11:30 – 11:45		11:38 – 11:52		11:20 – 11:35		11:26 – 11:41		11:32 – 11:47		
	Beginning		Middle 1		Middle 2		Middle 3		End		
	S	T	S	T	S	T	S	T	S	T	total

trait												0
theme												0
genre								5		5		10
motive												0
sequence												0
compare												0
contrast												0
purpose												0
hyperbole		1	33	19				14		14		81
cause	10	13				14		4		4		45
effect	10	14				13		7		7		51
	20		33		0		0		0		Student	53
		28		19		27		30		30	Teacher	134
											Both	187

S = student, T = teacher

3.5.2.2 Outcome

The longitudinal accuracies out of 12 students are as follows: trait (10, 9*, 6, 6, 8, 9, 6); genre (9, 5*, 5, 4, 6, 8, 7); theme (10, 6*, 4, 4, 3, 3, 4)[2]; sequence (11, 8, 9, 10, 9, 9); motive (11, 8, 6, 7, 8, 7); compare (6, 6, 6, 8); contrast (4, 4, 4, 6); purpose (6, 6, 9, 9); cause (6, 7); effect (6, 7). This indicates that the students were not retaining all the Academic Vocabulary over time.

Table 8 *Stormalong* Total Correct Responses to Vocabulary Question

	Student >	A	B	C	D	E	F	G	H	I	J	K	L	total correct
Pretest	traits	1	0	1	1	1	1	0	1	1	1	1	0	9
	genre	1	0	1	1	0	0	0	1	1	1	1	1	8
	theme	0	0	1	1	0	0	0	0	0	1	0	0	3
	motive	0	0	1	1	0	1	0	1	1	1	1	1	8
	sequence	1	0	1	1	0	1	0	1	1	1	1	1	9
	compare	1	0	1	1	1	0	0	0	0	1	0	1	6
	contrast	1	0	1	1	0	0	0	0	0	0	0	1	4

[2] * Missing data due to student absence.

	purpose	1	0	1	1	1	1	1	0	1	1	0	1	9
	hyperbole	1	0	1	1	1	1	0	1	0	1	0	1	8
	cause	0	0	0	1	0	1	1	0	0	1	1	1	6
	effect	0	0	0	1	0	1	1	0	1	1	0	1	6
Posttest	traits	1	0	1	1	1	0	0	0	1	1	0	0	6
	genre	0	0	1	1	1	1	0	0	1	1	0	1	7
	theme	0	0	1	0	1	0	0	0	1	1	0	0	4
	motive	1	0	1	1	0	1	0	0	1	1	1	0	7
	sequence	1	0	1	1	1	1	0	1	1	1	0	1	9
	compare	0	0	1	1	1	0	0	1	1	1	1	1	8
	contrast	0	0	0	1	1	0	0	1	1	0	1	1	6
	purpose	1	0	1	0	1	1	0	1	1	1	1	1	9
	hyperbole	0	0	1	1	1	1	0	0	1	1	0	1	7
	cause	1	0	0	0	1	1	0	0	1	1	1	0	6
	effect	1	0	0	1	1	1	0	0	1	1	1	0	7

3.6 Outcome: Was Aim Achieved?

Yes and No. The Aim statement reads: “4 out of every 5 students with reading disabilities will master the eleven frequently used Academic Vocabulary terms with a minimum of 80% accuracy within a given school year.” In table 9 below, each column represents a student (A- L) and each row represents the number of times a student responded correctly to the corresponding vocabulary question over four consecutive trials. The Academic Vocabulary terms “hyperbole,” “cause,” and “effect” are excluded because there were only two trials for each Academic Vocabulary term. To calculate the number of Academic Vocabulary terms that passed, each students’ scores for all Academic Vocabulary terms were counted if the score was 3 or 4. Those totals were entered in the row labeled, “# Academic Vocabulary terms passed.” Then, to calculate the percentage of all 8 Academic Vocabulary terms passed, I divided the “# Academic Vocabulary terms passed” by eight and multiplied by one hundred. The results showed that given four

consecutive trials with the test designed with the word bank, only two of ten students were able to demonstrate 80% or better accuracy.

Table 9 Correct Responses out of 4 Consecutive Trials

Student>	A	B	C	D	E	F	G	H	I	J	K	L
trait	3	1	4	3	4	2	1	3	3	3	1	1
genre	2	0	3	3	2	2	0	1	4	4	1	3
theme	0	0	3	2	1	0	0	1	2	4	1	0
sequence	4	1	4	4	2	4	0	3	4	4	3	4
motive	2	0	4	4	0	3	1	2	3	4	3	2
compare	1	0	4	4	2	0	0	1	3	4	3	4
contrast	1	0	3	4	1	0	0	1	3	0	1	4
purpose	2	0	4	3	4	4	3	4	2	2	1	2
# Academic Vocabulary Terms Passed:	2	0	8	7	2	3	1	3	6	6	3	4
% Passed:	25%	0%	100%	88%	25%	40%	13%	40%	75%	75%	40%	50%

As mentioned before, the test design relied on students selecting from a word bank that accumulated the Academic Vocabulary terms as each story unit introduced the new Academic Vocabulary terms. It is possible that even though the test was read aloud to the students, they had difficulty with selecting the correct answer from a growing list of terms. To address the potential problem with the word bank test design, I redesigned the final test to be a four multiple-choice test. I administered the 4-choice test shortly after the last word-bank test. The questions were the same. I also suspected "motive" and "cause" may be confused with one another in the context of those two questions, so I provided choices that eliminated that factor. Students B and G underperformed globally, so those were the two students I did not include finally. When given the multiple-choice test, the average accuracy overall was 85%.

Table 10 Final Vocabulary Probe Results for Each Academic Vocabulary Term by Student (A-L)

	4-choice Vocabulary Probe											
Student:	A	B	C	D	E	F	G	H	I	J	K	L
trait	1	1	1	1	1	1	0	1	1	1	1	1
genre	1	1	1	1	1	0	0	1	1	1	0	1
theme	1	0	1	1	0	1	0	0	1	1	1	1
sequence	1	0	1	1	0	1	0	0	1	1	1	1
motive	1	0	1	1	1	1	0	0	0	1	0	1
compare	1	0	1	1	1	1	0	1	1	1	1	1
contrast	1	0	1	1	1	1	0	1	1	0	1	1
purpose	1	0	1	1	0	1	0	1	1	1	1	1
hyperbole	1	1	0	1	1	1	1	1	0	1	1	1
effect	1	1	1	1	1	1	1	0	0	1	1	1
cause	1	0	1	1	1	1	0	0	1	0	1	1

To deeper analyze the data, I examined each Academic Vocabulary term individually. With this test, I excluded the two historically lowest performing students (shaded gray in the tables above and below). I then considered the results of the other ten students. Seven of those ten students answered with greater than 90% accuracy on all the Academic Vocabulary terms. Two students had 73% accuracy and one student responded with 55% accuracy over all the items.

Table 11 Final Accuracies by Students (A – L) Excluding 2 Underperforming Students

Student>	A	B	C	D	E	F	G	H	I	J	K	L
# Correct	11	4	10	11	8	10	2	6	8	9	9	11
% Correct	100		91%	100%	73%	91%		55%	73%	91%	91%	100%

I also examined the results by individual Academic Vocabulary terms to determine if there were any difficulties with certain vocabulary questions. Of all 11 Academic Vocabulary terms, only the word "motive" was answered correctly by 70% of the students. Therefore, when broken down by Academic Vocabulary term, 100% of the students answered compare and trait accurately, 90% of the students answered contrast and purpose correctly, and 80% of the students answered genre, theme, sequence, hyperbole, effect, and cause correctly. Therefore, on each of the Academic Vocabulary terms taken individually, ten out of the eleven Academic Vocabulary terms were responded to with an average of 80% or greater accuracy by ten students in the group of 12 (or five out of six students).

Table 12 Final Accuracies by Academic Academic Vocabulary Term

10 of 12 Students		
compare	10	100%
trait	10	100%
contrast	9	90%
purpose	9	90%
cause	8	80%
effect	8	80%
genre	8	80%
hyperbole	8	80%
sequence	8	80%
theme	8	80%
motive	7	70%

Finally, I looked at final answered questions for each of the eleven Academic Vocabulary and found that the average accuracy among the ten students (excluding the two historically underperforming students) shows an average of 85% accuracy overall.

Table 13 Total Correct Responses Excluding 2 Underperforming Students

10 of 12 Students	
Total Correct Responses	93
Possible Correct Responses	110
Average Accuracy Overall	85%

3.7 Combining the Longitudinal Observation and Student Test Results Separated by Academic Vocabulary Term

Because there seemed to be a decline in performance with the word-bank style test, I decided to align the data between the observations and the students' performance on the vocabulary test over time. To do so, I examined each Academic Vocabulary term individually. On the following charts, the grey bars represent the number of students who responded to the given Academic Vocabulary term correctly. The dotted black line represents the cumulative number of times the Academic Vocabulary term was observed by the time the vocabulary test was administered. An incline in the dotted line indicates the Academic Vocabulary term continued to be used, but a horizontal line with asterisks indicates that the Academic Vocabulary term was not observed again. With this we can see whether students' loss correlates with the lack of vocabulary usage or not. Since the vocabulary list was compiled in a cumulative fashion, and I only collected

vocabulary probe data after an Academic Vocabulary term was introduced with the corresponding story unit, the number of vocabulary probes administered over time decreases for each story unit. In other words, I have more longitudinal vocabulary probe data for the first story *Chang*, and I have the fewest vocabulary probe data points for the last story, *Stormalong*.

3.8 Outcome: Combining Observation Data and Student Performance

One may argue that a student has not truly mastered the vocabulary if, when read aloud, a student is unable to identify the correct Academic Vocabulary term in an 11-word bank. There seemed to be a decline in performance from one test to the next and in some instances, students performed better on the first attempt at a question than they did in subsequent attempts. So, it is important to look closer at what is happening over time with the word bank-type test. There were differences in the number of times the words were spoken, but cumulatively one would expect students to perform better, not worse, as they are exposed to the Academic Vocabulary. Because there seemed to be a decline in performance, I decided to align the data between the observations and the students' vocabulary probe performance over time to examine patterns. To do so, I examined each Academic Vocabulary term separately by comparing the number of correct answers to a vocabulary question with the number of times the Academic Vocabulary term was observed in use by the time the vocabulary question was presented.

3.8.1 Combining the Longitudinal Observation and Student Test Results Separated by Academic Vocabulary Term

On the following charts, the grey bars represent the number of students out of the total group of twelve who responded to the Academic Vocabulary terms correctly. The dotted black line represents the cumulative number of times the Academic Vocabulary was observed by the time the vocabulary test was administered. An incline in the dotted line indicates the Academic Vocabulary term continued to be used during observations, but a horizontal line with asterisks indicates that the Academic Vocabulary term was not observed again. This helps visualize if there is a correlation between ending vocabulary usage and student regression, or loss of skill. Since the vocabulary list is compiled in a cumulative fashion, and I only collected vocabulary test data after an Academic Vocabulary term was introduced with the corresponding story unit, the number of vocabulary probes administered over time decreases for each story unit. In other words, I have the most longitudinal vocabulary probe data for the first story, *Chang*, and I have the fewest longitudinal vocabulary probe data points for the last story, *Stormalong*.

3.8.1.1 *Chang and the Bamboo Flute* and Aligned Academic Vocabulary Terms: "Trait," "Genre," and "Theme"

The *Chang* story unit began on October 11, and I began collecting observation data. This story unit served as a baseline because we had not introduced posters as the change idea. Because of tight curricular scheduling I administered the pre-test the October 19. The first Academic Vocabulary terms covered were "trait," "genre," and "theme." It is important to note that the pre- and posttest questions and word bank choices remained the same at the beginning and end of this PDSA cycle and the test questions and word bank lists were identical.

3.8.1.1.1 Longitudinal Performance on "Trait"

Every student's response was to an identical question with the same correct answer, yet performance declined on the trait question from the pre- to the posttest. While the observation data did not capture the introduction of the Academic Vocabulary term "trait" prior to the pretest, the Academic Vocabulary term was used in the classroom discussions. On the first test (October 19), ten out of twelve students answered the "trait" question accurately. Following this, nine out of twelve students responded correctly on October 27. This may be explained by one missing data point due to student absence. By November 14, the Academic Vocabulary term "trait" continued to be used thirteen additional times and nine students still responded correctly to the "trait" question. Between November 14 and November 21, the Academic Vocabulary term "trait" was observed an additional five times, and then not again for the remainder of the PDSA cycles. By the last test question, only six out of the twelve students responded to the "trait" question correctly.

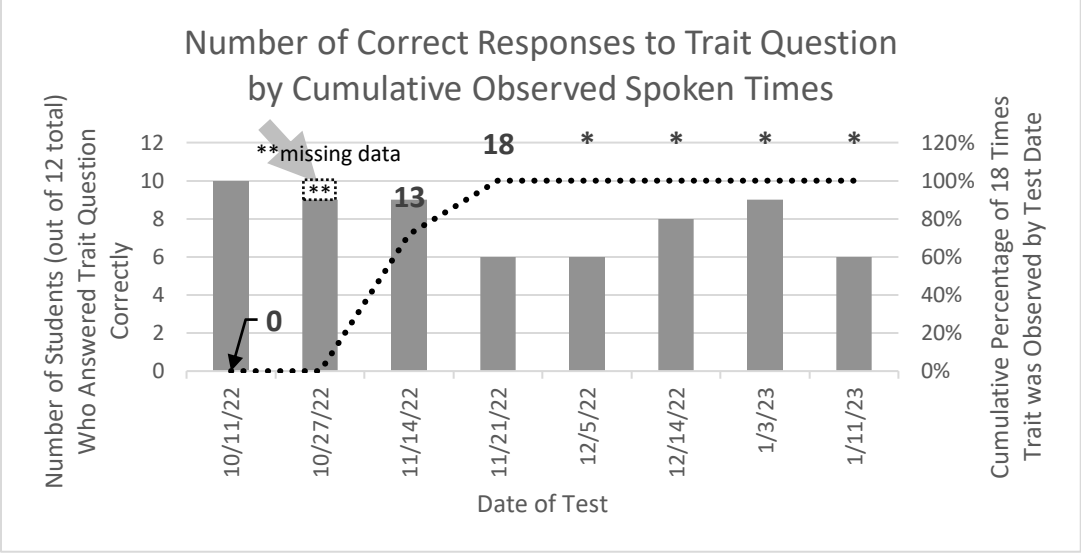


Figure 3 Number of Correct Responses to "Trait" Question by Cumulative Observed Spoken Times

3.8.1.1.2 Longitudinal Performance on "Genre"

Every student's response was to an identical question with the same correct answer options, yet performance declined on the genre question as well. By the time the "genre" pretest was administered, the Academic Vocabulary term was used a cumulative number of thirteen times. On the pretest (October 11), ten out of twelve students answered the "genre" question accurately. Following this, the Academic Vocabulary term "genre" was not observed again until after the December 14th test. Further, only five out of twelve students answered the "genre" question correctly again on October 27 noting that there is one data point missing. However, on November 14, and November 21 only five students correctly answered the trait question. Then, upon return from the Thanksgiving break, only four out of the twelve students answered correctly. It was at this point that the fifth-grade Special Education teacher and Regular Education Reading teacher coordinated attempts to address this loss of vocabulary skill and focused on the Academic Vocabulary term "genre" again. Following this, student performance and observed usage of the Academic Vocabulary term "genre" increased. At the end of the final cycle eight out of twelve students responded correctly to the "genre" question correctly.

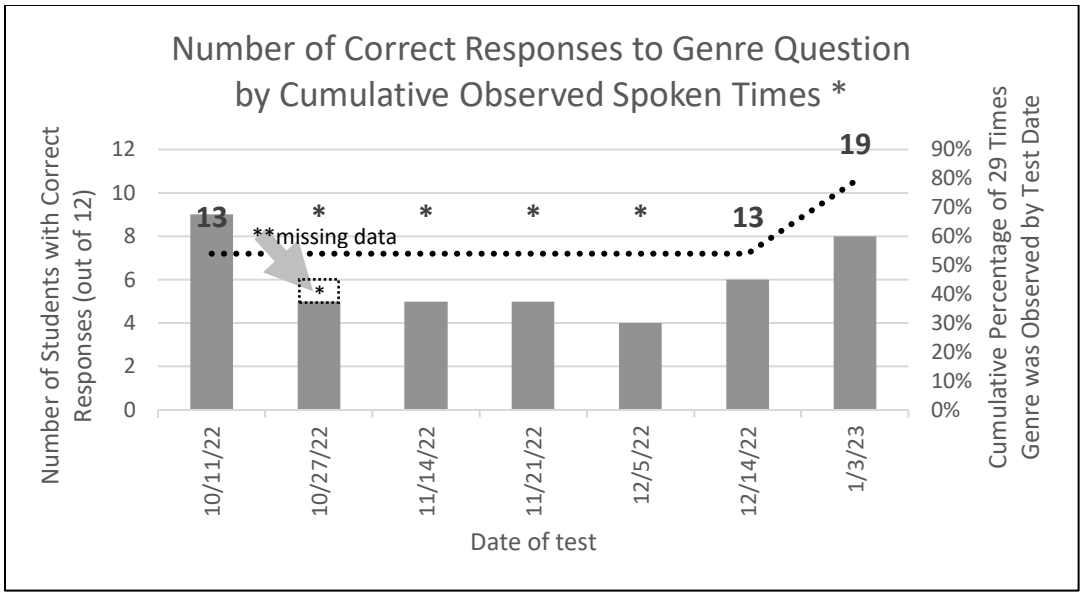


Figure 4 Number of Correct Responses to "Genre" Question by Cumulative Observed Spoken Times

3.8.1.1.3 Longitudinal Performance on "Theme"

Every student's response was to an identical question with the same correct answer options, yet performance declined on the theme question. Throughout all the PDSA change cycles, the Academic Vocabulary term "theme" was not observed. While it was briefly introduced just prior to the October 11 observation, it was not used again and the number of students who answered correctly on the theme question quickly dropped. On the first test (October 19), ten out of twelve students answered the "theme" question accurately. However, the Academic Vocabulary term "theme" was not observed at all. On October 27 only six of the twelve students answered the "theme" question accurately. On November 11, still five students answered correctly noting one missing data point, on November 21 and December 4 the results dropped to four out of twelve students responding correctly to the question. On December 14 and on January 3, only three out of twelve students answered the "theme" question correctly and finally on January 11 a total of four of the students answered correctly. This may be more evidence that the students were unable

to retain the Academic Vocabulary term "theme" even though they were presented with the same test question over each trial.

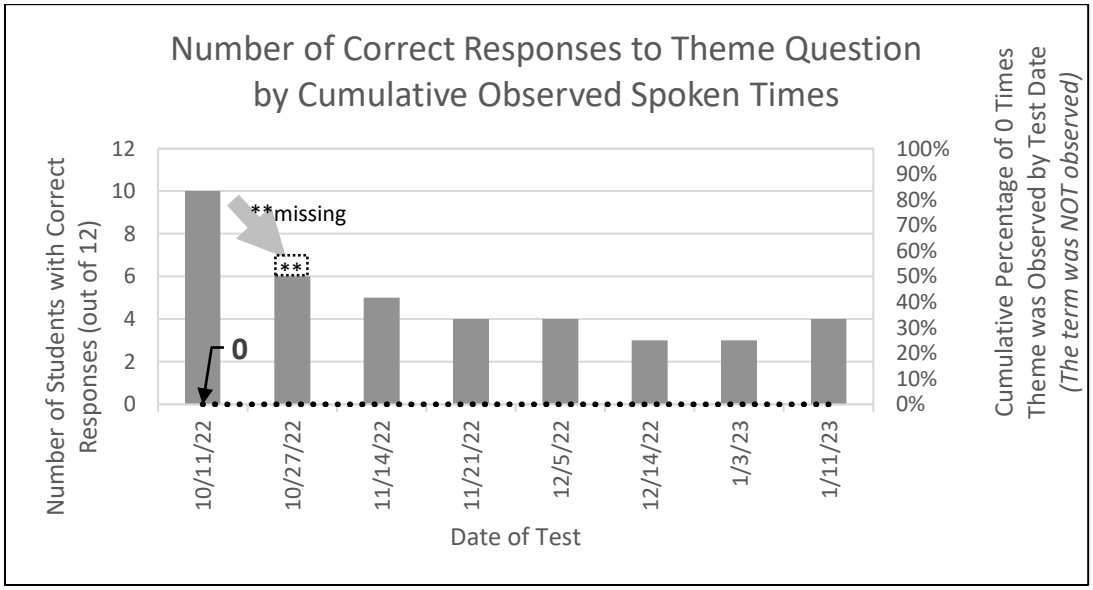


Figure 5 Number of Correct Responses to "Theme" Question by Cumulative Observed Spoken Times

3.8.1.2 *The Daring Nelly Bly: America's Star Reporter* and Aligned Academic Vocabulary Terms: "Sequence" and "Motive"

Nelly story unit began on November 14, but the data collection for the Academic Vocabulary terms that aligned with the unit was collected from October 11 and every observation period forward. We introduced posters for the Academic Vocabulary terms "sequence" and "motive" on November 16, which was after the *Nelly* pretest. Pretest data was collected for the Academic Vocabulary terms "sequence" and "motive" only. But after a discussion with the regular education teacher about the possibility that students were not retaining vocabulary skills, I decided to continue monitoring Academic Vocabulary terms from previous PDSA cycles. In other words, mid-way in the second PDSA cycle, I realized that I was not capturing important data when I shortened the test by focusing on only the Academic Vocabulary terms that aligned with the current

PDSA cycle. So, the *Nelly* posttest added the Academic Vocabulary terms from *Chang* back onto the test and from this point forward the pre- and posttests included a cumulative question with a word bank for the students from which to pull their answers. To ensure that the students continued to perform with maximized effort, I read the questions and vocabulary words from the word bank to the students individually. This allowed me to monitor student attention during the testing sessions.

3.8.1.2.1 Longitudinal Performance on "Sequence"

For this cycle, the Academic Vocabulary were used more frequently which seemed to improve student retention. While the number of times Academic Vocabulary was spoken had increased, the use of the Academic Vocabulary was spread out over more days. This seemed to help more students retain the usage of Academic Vocabulary terms. Between November 21 and December 14, the usage increased as did the number of students who answered the "sequence" question accurately. But the last time the Academic Vocabulary term "sequence" was observed was December 9 and shortly after the student performance declined.

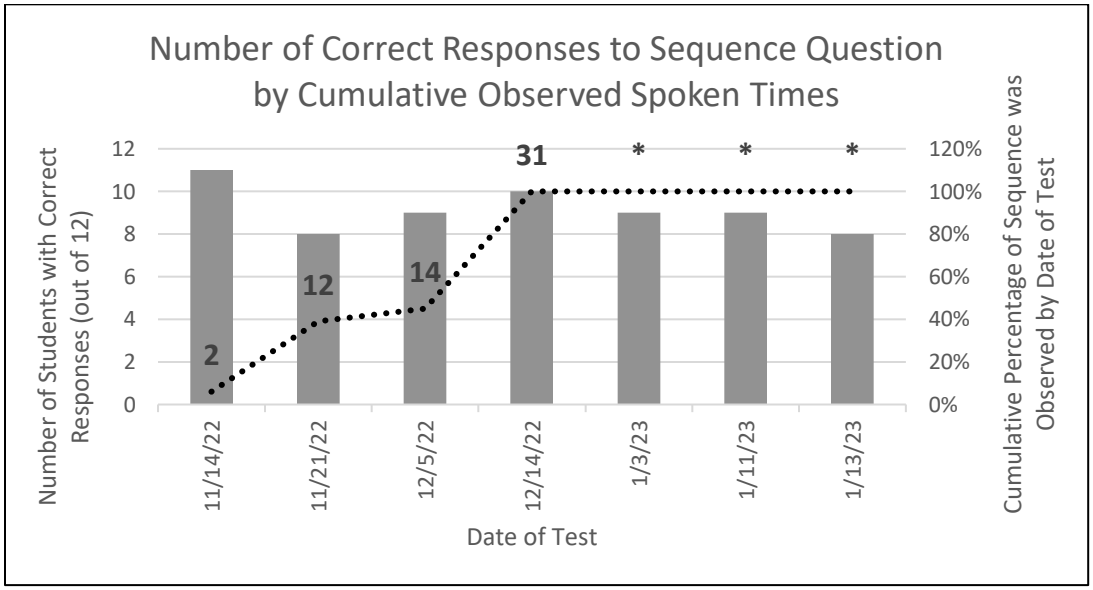


Figure 6 Number of Correct Responses to "Sequence" Question by Cumulative Observed Spoken Times

3.8.1.2.2 Longitudinal Performance on "Motive"

"Motive" was an Academic Vocabulary term that aligned with *Ropeburn*, which was the story that preceded this change plan as well as an Academic Vocabulary term that was observed again with *Chang*. However, the data reflected in this figure begins on November 14 and does not capture all those instances. The Academic Vocabulary term was also used in the beginning of *Nelly*, but after 13 occurrences, the Academic Vocabulary term was not observed after November 21. As with other Academic Vocabulary terms, the number of students who answered correctly dropped from eleven correct on the pretest, to eight correct on November 21, six correct on December 5, seven correct on December 14, eight correct on January 3, and seven correct on January 11. This is another example of decline that correlated with the ending of observed use.

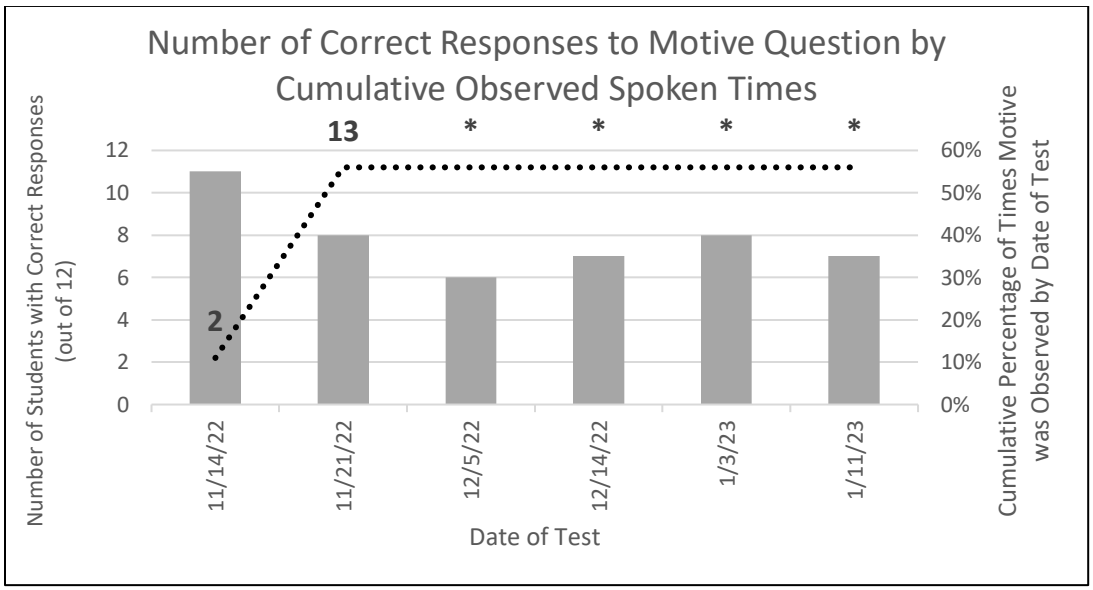


Figure 7 Number of Correct Responses to "Motive" Question by Cumulative Observed Spoken Times

3.8.1.3 *When Washington Crossed the Delaware* and Aligned Academic Vocabulary Terms: "Compare," "Contrast," and "Purpose"

The *Washington* story unit began on December 5, and as with the other cycles the data collection for the Academic Vocabulary terms that aligned with the unit was collected starting October 11 and continued with every observation period forward. This story unit was faced with unexpected problems including the *Washington* unit starting with a substitute teacher. This unit was rushed to fit into the tight timeline before the winter break and other district activities. Rather than introducing teacher-made posters, we referred to posters that were purchased. We did not formally introduce posters in a lesson but rather referred to the posters as the Academic Vocabulary terms came up in classroom dialogue. In previous years, the *Washington* unit paired the story *When Washington Crossed the Delaware* with a poem which provided an opportunity to compare and contrast the two selections. It also corresponded with the Social Studies unit on the Battle of Trenton. Since this PDSA cycle was shortened due to the tight timeline and because the Social Studies curriculum was modified to meet the needs of the inclusion students, that topic was replaced with another lesson. This removed the portion of the instruction in which the Academic Vocabulary terms "compare," and "contrast" were used to examine the differences in the sequential structure of *When Washington Crossed the Delaware* and the rhyme scheme structure of a poem on the same topic. It also removed an opportunity to examine the differences in the "purpose" between literary works written to inform with a literary work written to entertain. As such, the Academic Vocabulary terms were not observed during any discussions in the reading classroom dialogue. However, to account for this deficit in the lessons, the Reading teacher touched base with the other fifth-grade teachers and the students were given multiple opportunities to apply the terms "compare" and "contrast" in science discussions, including class projects and

paragraph writings in Science and in Language Arts which may account for a slight increase in the number of students who responded correctly on the “compare” and “contrast” test questions.

I continued to collect data on vocabulary usage in the same way as previous cycles and the student vocabulary pre- and posttest included a cumulative list of words from the previous and current cycles. As with the posttest in the previous cycle I read the questions and vocabulary words from the word bank to the students individually which allowed me to monitor student focus and effort.

3.8.1.3.1 Longitudinal Performance on “Compare”

Because this story unit was modified to meet the needs of the inclusion classroom, the Academic Vocabulary term “compare” did not occur during the *Washington* unit. However, it was utilized after the winter holiday in cross-curricular lessons outside of the scope of my observations. Therefore, the students were exposed to the Academic Vocabulary term after the third PDSA cycle, but the observation data reflects that there were no instances when I observed the Academic Vocabulary used in the Reading classroom during my data collection. This is indicated by a horizontal dotted line along the x-axis on the following graph.

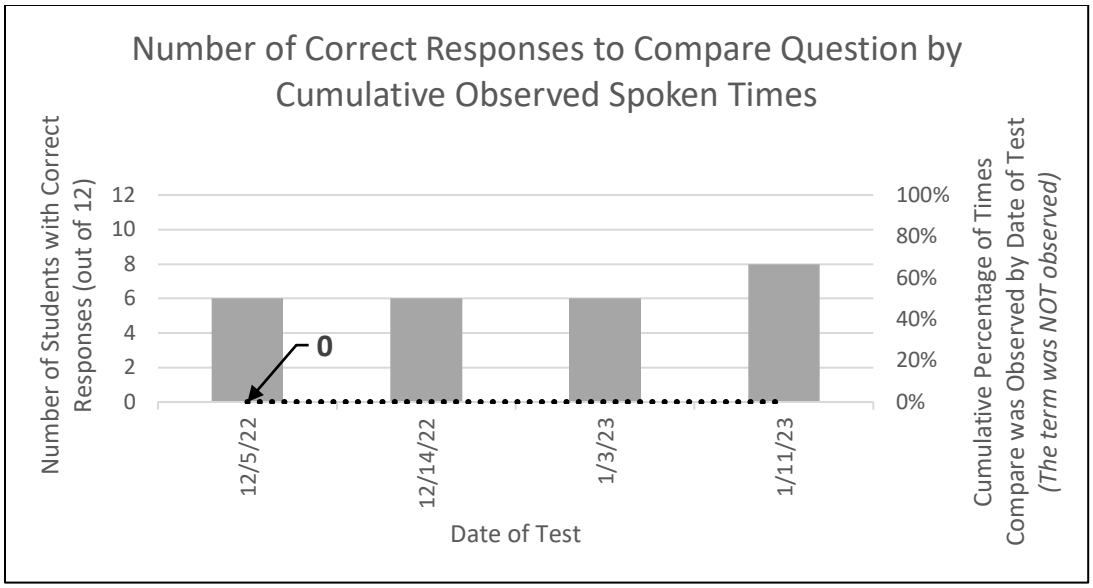


Figure 8 Number of Correct Responses to "Compare" Question by Cumulative Observed Spoken Times

3.8.1.3.2 Longitudinal Performance on "Contrast"

As with the abovementioned Academic Vocabulary term "compare," the Academic Vocabulary term "contrast" did not occur during the *Washington* unit. It was likewise utilized after the winter holiday in cross-curricular lessons outside of the scope of my observations. Therefore, the students were exposed to "contrast" after this PDSA cycle. The observation data is indicated by a horizontal dotted line along the x-axis on the following graph.

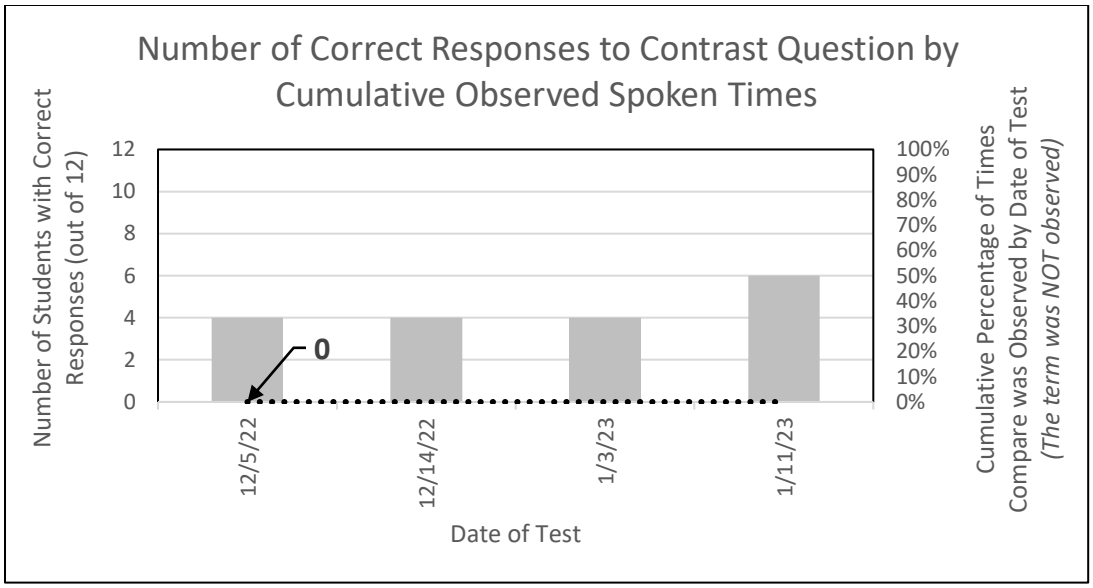


Figure 9 Number of Correct Responses to "Contrast" Question by Cumulative Observed Spoken Times

3.8.1.3.3 Longitudinal Performance on "Purpose"

We did not spend time during the *Washington* unit covering the Academic Vocabulary term "purpose," and the Academic Vocabulary was not observed in use during the dialogue in the Reading classroom. The observation data is indicated by a horizontal dotted line along the x-axis on the following graph.

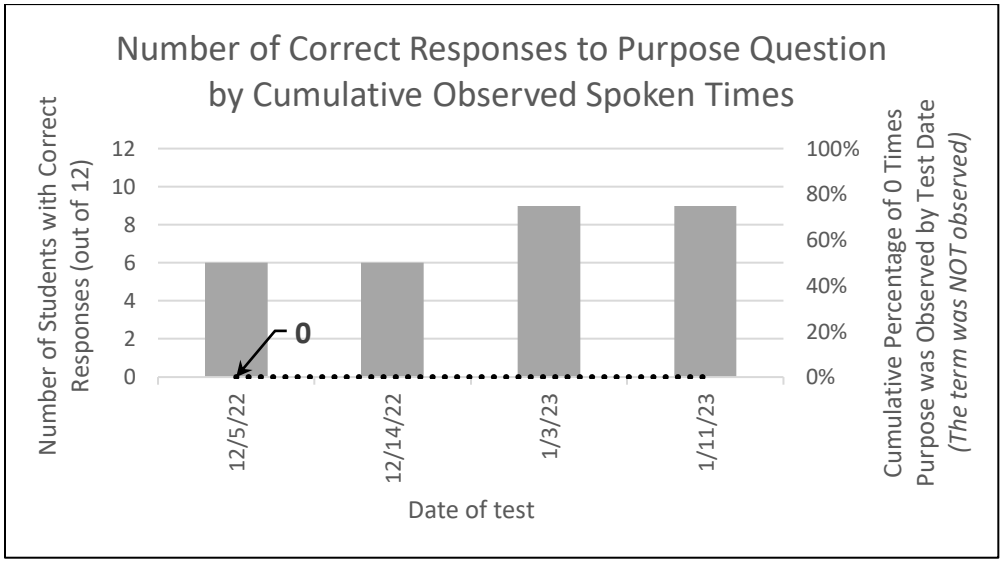


Figure 10 Number of Correct Responses to "Purpose" Question by Cumulative Observed Spoken Times

3.8.1.4 *Stormalong* and Aligned Academic Vocabulary Terms: "Hyperbole," "Cause," and "Effect"

The *Stormalong* story unit began immediately following the winter break on January 3, and as with the other cycles the data collection for the Academic Vocabulary terms that aligned with the unit was collected from October 11 and every observation period forward. This story unit was much less rushed and allowed an opportunity to catch up on missing concepts. Further, it gave the general education teachers an opportunity to collaborate and create cross-curricular lessons that supported the vocabulary aligned with the story, *Stormalong*.

I continued to collect data on vocabulary usage in the same way as previous cycles and the student vocabulary pre- and posttest included a cumulative list of words from the previous and current cycle. As with the posttest in the previous cycle I read the questions and vocabulary words from the word bank to the students individually which allowed me to monitor student focus and effort. Because this is the last PDSA cycle, there is little longitudinal data (one pretest and one posttest). Therefore, it is not possible to draw conclusions about student retention of these Academic Vocabulary terms based on available data.

3.8.1.4.1 Longitudinal Performance on "Cause" and "Effect"

With the final cycle there was an observed increase in academic vocabulary use overall. The terms "cause" and "effect" was documented in the Inclusion Reading classroom a total of thirty-four times during the observations. Additionally, "cause" and "effect" were used outside the scope of this change plan. Through collaboration with the science teacher, the concept of cause and effect was covered thoroughly. The observation data is indicated by a horizontal dotted line along the x-axis on the following two graphs. However, because this is the final story unit, there is not enough longitudinal data to determine if the increase in correct responses is meaningful.

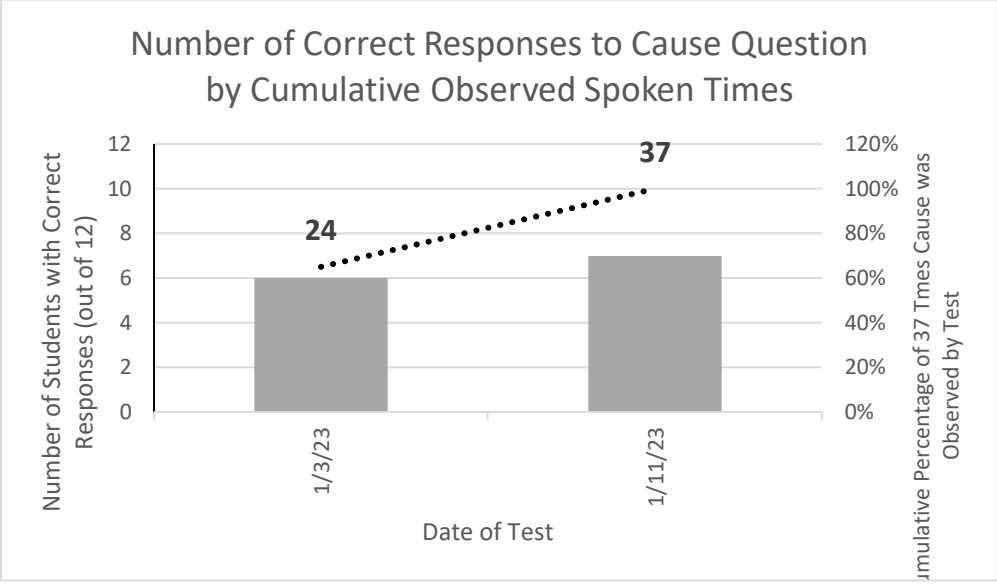


Figure 11 Number of Correct Responses to "Cause" Question by Cumulative Observed Spoken Times

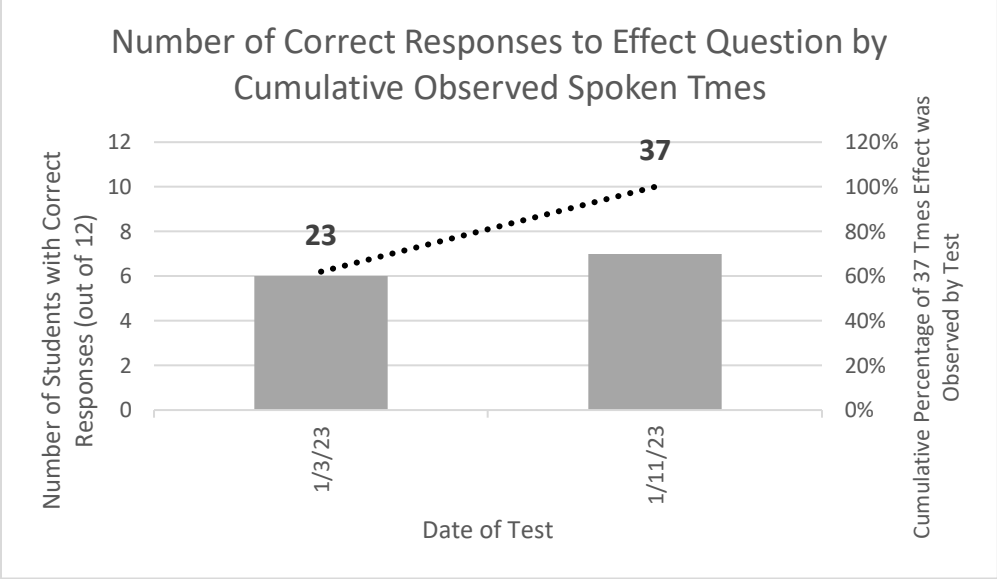


Figure 12 Number of Correct Responses to "Effect" Question by Cumulative Observed Spoken Times

3.8.1.4.2 Longitudinal Performance on "Hyperbole"

The final term covered in this change idea is "hyperbole." Here, there is a significant increase in the usage of the term. However, because this is the final story unit, there is not enough longitudinal data to determine if the decline in correct responses is meaningful.

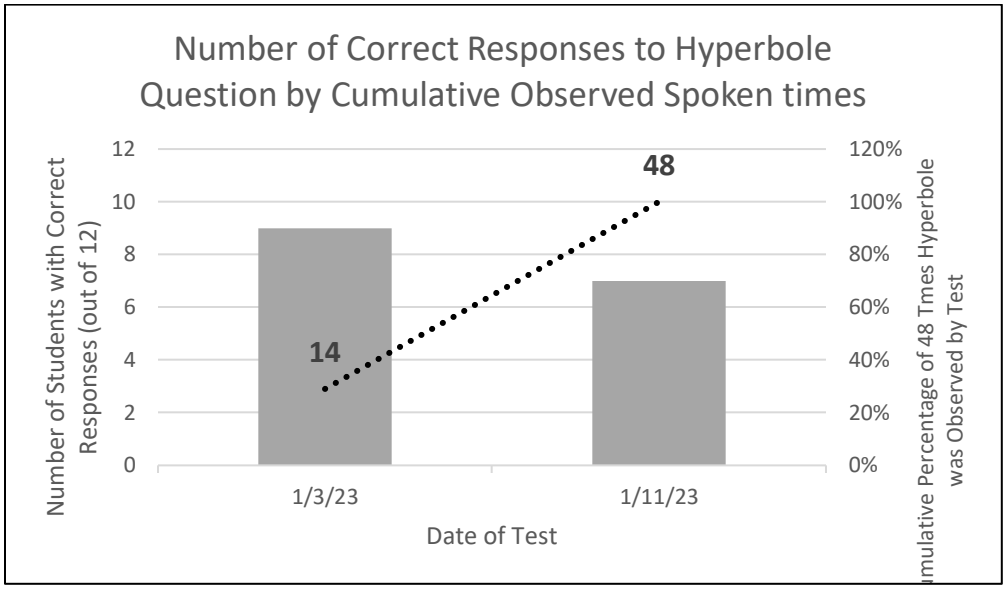


Figure 13 Number of Correct Responses to "Hyperbole" Question by Cumulative Observed Spoken Times

4.0 Discussion

Improving academic vocabulary knowledge is crucial for struggling readers. Further, building stronger semantic connections may compensate for poor comprehension skills (Koedinger et al., 2012; Schmidtke et al., 2018; Wang et al., 2019). The purpose of this improvement project was to explore ways to improve access to academic vocabulary for students with specific reading disabilities because traditional reading and writing lessons create a barrier to vocabulary mastery. One way to improve access is by frequent use in classroom dialogue through conversational turn-taking. This approach requires intentional up-front planning, it does not rely on a standalone lesson or instruction that interferes with the core purpose of a lesson. Rather, simply imbedding the use of academic vocabulary in dialogue is a practice that enhances students' access to the common core curriculum without pulling from the instructional time.

The findings in this project show that vocabulary is far more complex than simple correlation between number of times heard and mastery. Overall, student performance on vocabulary probes was inconsistent when comparing vocabulary probe accuracies with numbers of observed use in dialogue, but there may have been a correlation between a drop in student performance and the lack of academic vocabulary use. This possibility needs to be explored further. For the student participants in this project, the number of participants who were able to identify multiple respective correct vocabulary words declined while the term was no longer observed in classroom discussion in multiple examples. It is not clear if this pattern will occur in other groups of students in the future. Because the needs of the student participants in this improvement project were complex, it is difficult to pinpoint exact factors that influenced the

student test results. The data suggests that students in this group benefited more when exposure is sustained and applied over time.

Overall, the changes in this improvement plan did result in a significant increase in the number of times the teachers and the students used the targeted academic vocabulary in conversation. While posters may have been helpful, it is not the only factor that improved vocabulary use. Intentional incorporation and collaboration with other teachers were major components to the increase in vocabulary usage. By the fourth cycle, the number of times students were observed using the targeted vocabulary terms was fifty-three times which was an increase of forty-six from the first cycle. The teachers were observed using the terms 134 times during the fourth cycle which was an increase of 113 from the first cycle. Overall, the difference between observed vocabulary uses between the first and last cycles was an increase of 159 times overall in the classroom dialogue. Most importantly, there was an increase in student use during discussions, which suggests that students were becoming more comfortable with using academic vocabulary. This becomes key when considering, as the literature suggests, a crucial practice to negate the effects of multiple linguistic factors on academic growth is to include vocabulary in discussions (Barr et al., 2019; Romeo et al., 2018; Uccelli et al., 2015).

Another finding in this project was that implementation of lessons can be affected by the inclusion model as well as schoolwide activities and lesson timing. As previously mentioned, the inclusion model has benefits and drawbacks which the district must weigh. It may not be beneficial to make a change to the inclusion model considering the greater system. As it is, the inclusion class experiences frequent interruptions. Multiple students were regularly pulled from class for services, frequent phone calls, student and teacher absences that were not recorded for, as well as the students' need more support and curriculum changes were all factors that challenged effective

implementation. While this may be a challenge in the classroom, it further shows the importance of continuing to incorporate vocabulary so that any missed classroom dialogue can be made up for by continual review and use even when the lesson unit that the vocabulary aligns with has ended.

Strengths of this project design included the observational data collection. Research supports the quality of language exposure, like that which occurs in dialectical turn-taking, is a crucial part of paving the way for future language readiness (Romeo et al., 2018). As such, students continue to need high-quality conversations in the school setting with their peers and teachers. The short 15-minute segment of sampling over five days during each of the four cycles provided an accurate capture of the use of vocabulary in this inclusion classroom which demonstrated students were increasing their use of vocabulary in dialectical turn-taking by the end of the fourth cycle of this project. Future studies may consider collecting data in multiple subject areas either through observation, through teacher self-reporting, or a combination of both.

In addition, a factor that seemed to improve student retention of terms but were outside the scope of this project were two engaging escape room activities. In short, the students were grouped heterogeneously and worked around the classroom reading short passages and completing an answer sheet. The group of students "escaped" if they correctly answered all the questions. This activity provided an opportunity for students to apply academic vocabulary terms in context and used the terms reciprocal dialogue with their peers and teacher. However, the observation data collection methods in this improvement project would not capture an accurate representation of the classroom use of vocabulary because each heterogenous group of students would have used the Academic Vocabulary a different number of times. But the activity itself encouraged a more robust use of the Academic Vocabulary terms in multiple contexts and the students were using the Academic Vocabulary in dialogue with their peers rather than in a whole group lesson.

Intentionally grouping students heterogeneously in a way that maximized ability and cooperation was essential. Also helpful were multiple adults present to scaffold friendly collaboration among students. With appropriate support and student grouping, the activity may improve student engagement.

A weakness in this project design was the length of the vocabulary test. It is possible that this project collected data on too many academic vocabulary words. As the literature implies, academic vocabulary terminology must r carefully to shorten the list and place emphasis on vocabulary that has value across content areas (Barr et al., 2019; Beck, et al., 2013; Kucan, 2012). Therefore, the method of collecting test data could be improved by focusing on fewer words that apply across multiple settings and administering a test at the beginning and end of a two-month period with multiple progress monitoring checks that apply examples across settings. For example, words to focus on may be *sequence, cause, and effect* because these terms can be applied to all subject areas. This does not mean that the instruction should limit classroom exposure to these three words, only that for the purposes of exploring patterns of regression or loss of skill it may be more beneficial to design a shorter test. Previous studies demonstrate that comprehension depends on knowing what the words mean and the ability to construct a mental representation of the written or spoken language (Perfetti & Stafura, 2014). To achieve this, students must encounter multiple examples across settings and over time.

Another weakness in the test design was the cumulative word bank which may have been a factor in student accuracy for this group of students. The Academic Vocabulary word bank increased as added terms were introduced with the story units. This may have been overwhelming for this group of students to select the correct answer even if the Academic Vocabulary terms were read aloud. Following this, a follow-up assessment that used the same questions but used a multiple

choice design was administered shortly after the *Stormalong* posttest in the fourth PDSA cycle. Student results were much improved, but it is unclear if this demonstrates true mastery. If this type of assessment were to be used in the future, limiting the number of terms that the students choose from may be a feature to consider but question design may also be considered.

In the future, the district may apply this improvement across subject areas. First, a team of instructional staff may be assigned to identify a list of vocabulary terms to focus on at multiple grade levels. Academic Vocabulary may be prioritized based on how it most benefits students' access to curriculum and performance on response to prompts or application in progress monitoring assessments. Faculty team-building activities may then task teachers with practice incorporating the identified vocabulary in their respective content areas. To support implementation, visually simple word posters with minimal text may be created and distributed to be displayed as a reminder to incorporate the vocabulary in reciprocal dialogue. Focus may remain with the inclusion classroom or expand beyond into the general education classroom. To monitor effectiveness of implementation, periodic surveys may be used to gather teacher's self-reporting regarding use of vocabulary terms.

Future improvement projects may continue to explore the role of regression when vocabulary terms are no longer used. In summary, we may explore connections between frequent and sustained vocabulary use and students' longitudinal performance. Activities might include engaging classroom games that apply the vocabulary in short manageable examples.

And finally, follow up and collaboration was a key factor in adherence to change. Beyond professional development activity, monitoring implementation and addressing challenges to effective implementation will be helpful to ensure program adherence. It is important to be mindful

that implementation may be more, or less difficult based on multiple factors within a given subject area, student body, and teachers' linguistic norms.

5.0 Reflections

Throughout this improvement project I learned that vocabulary is more than just the number of times a student with a reading disability hears a vocabulary word. Students retain vocabulary better if it is used frequently over time. They may lose their vocabulary skills when the academic vocabulary is no longer used. This is a pattern I would like to examine further in the future with other groups of students. The students in this sample appear to benefit from visual cues to incorporate the vocabulary in dialogue beyond a stand-alone lesson at the beginning or end of a unit.

The outcomes of this improvement project further reinforced the complexities of a special education setting and the benefits of the "Plan Do Study Act" (PDSA) model when implementing the instructional change. Student groups in special education vary from one school year to another, making it difficult to generalize previous experience to the incoming group of students. In this instance my best attempt to design data collection and vocabulary test questions based on what worked well for previous groups of students, it was still necessary to continually adjust elements to balance out the changes with the current students' educational needs. Through this all, I learned that one of the most essential elements to effective implementation is continual monitoring and adjustment. Further, I am reminded that the needs of students with learning disabilities are unique and require individualized design. When I prepare for lessons and tests, I can expect newness and unexpected challenges that command my response.

After the regular education Reading teacher collaborated with the fifth-grade team, I also noticed that "compare" and "contrast" were frequently used in the Inclusion Science class. While I did not formally record the data, the usage of the Academic Vocabulary terms in the instruction

was frequent and repeated over days. The Science teacher also included the Academic Vocabulary terms “compare” and “contrast” in multiple writing prompts in which the whole class created Venn diagram graphic organizers, followed by a highly scaffolded writing prompt in which students highlighted where they used the Academic Vocabulary terms in their writing.

So, the posters were helpful, but I learned that there are other factors that may have effectively supported the vocabulary usage with this group of students outside of my observations. There are indications that collaboration amongst teachers was key in expanding academic vocabulary in a cross-curricular fashion. While this improvement plan did not include data collection for the Language Arts classroom, it was apparent that there was an explicit increase in the aligned academic vocabulary usage in a reciprocal fashion in that setting too.

I also learned that student engagement was key. An activity that increased student motivation to use Academic Vocabulary in the Reading classroom were two escape room activities. The first was a “Character Trait” escape room in which students read short paragraphs and identified a character’s trait and another escape room that covered text structure including “Cause and Effect.” Crucial factors to the successful outcome of these activities in the inclusion group were adequate adult support and heterogeneous grouping. In other words, the teacher assigned students to groups in a way that ensured there was a strong reader in each group and considered groups of students who may work effectively together. Then, the adults identified the groups that may have needed support with cooperation, effort or reading and assisted the groups as seemed best.

I attempted to observe the number of times the Academic Vocabulary terms were utilized in the small group dialogue with one group. Within 15 minutes, the Academic Vocabulary terms were used in context greater than twenty times. However, I cannot generalize what I observed in

my group to the other groups beyond the inference that other students would have used the vocabulary in context in reciprocal discussions. There were benefits to these activities. The students remained motivated, explored the application of the Academic Vocabulary terms across multiple examples, and the activity did seem to correlate with increase in student performance on the vocabulary tests in this PDSA plan.

In another context, I observed a similar escape room activity on two occasions in the Library during the Unified Arts class period. The students utilized the google classroom platform to identify the "genre" of short paragraphs in a digital escape room game. However, because both classes were during a time when there was substitute teacher coverage and the students were permitted to choose their own groups. The groups tended to be homogenous (higher grouped with higher, lower grouped with lower.) As a result, the struggling students lacked adequate support and were unable to benefit fully from the task. Further, with only one adult present it was difficult to ensure engagement was maximized. I learned that this approach was less successful than heterogeneous grouping with multiple adults present to scaffold.

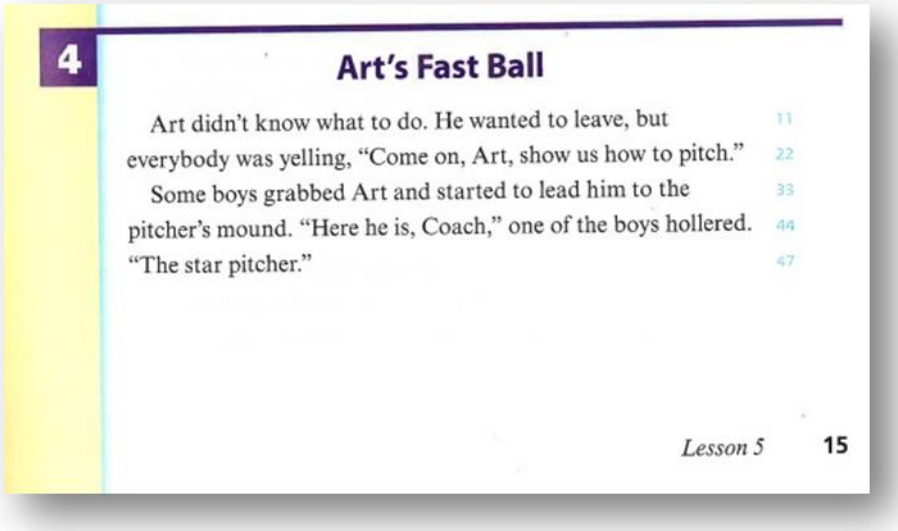
Most importantly, I learned that increasing the usage of Academic Vocabulary terms in conversational turn-taking must be sustained over time, regardless of the activity. Teachers and students appear to benefit from visual cues to incorporate the vocabulary in dialogue beyond a stand-alone lesson at the beginning or end of a unit. A more sustainable approach is to simply seek out opportunities to weave the usage of Academic Vocabulary terms frequently *in authentic context* through dialogue. This is an effective way to increase vocabulary use without adding on instructional load with vocabulary lessons. Literature supports that students with language-based disabilities require more practice with language than their non-disabled peers (Adlof & Hogan, 2018; Elleman et al., 2019; Pae et al., 2016; Romeo et al., 2018; Schmidtke et al., 2018). Bridging

reading deficits by offering enriched opportunities to apply the use of these Academic Vocabulary terms in reciprocal dialogue while scaffolding the classroom discussions regardless of activity is a way to increase mastery of vocabulary terms with minimal time taken away from core instruction.

Moving forward, I plan to coordinate with the curriculum director at my place of practice and present what I learned to colleagues. Future changes may explore the benefit of close collaboration and co-teaching. Incorporating academic vocabulary in daily classroom *reciprocal* dialogue is the core take-away I wish to present. As a professional development activity, I would like teachers to practice identifying opportunities to incorporate academic vocabulary in their lessons along with a follow up survey to monitor implementation.

Appendix A Leveled Reading Passage (Page 1 of 4)

SRA Decoding Strategies Level B2 for the Higher Reading Level Group



4

Art's Fast Ball

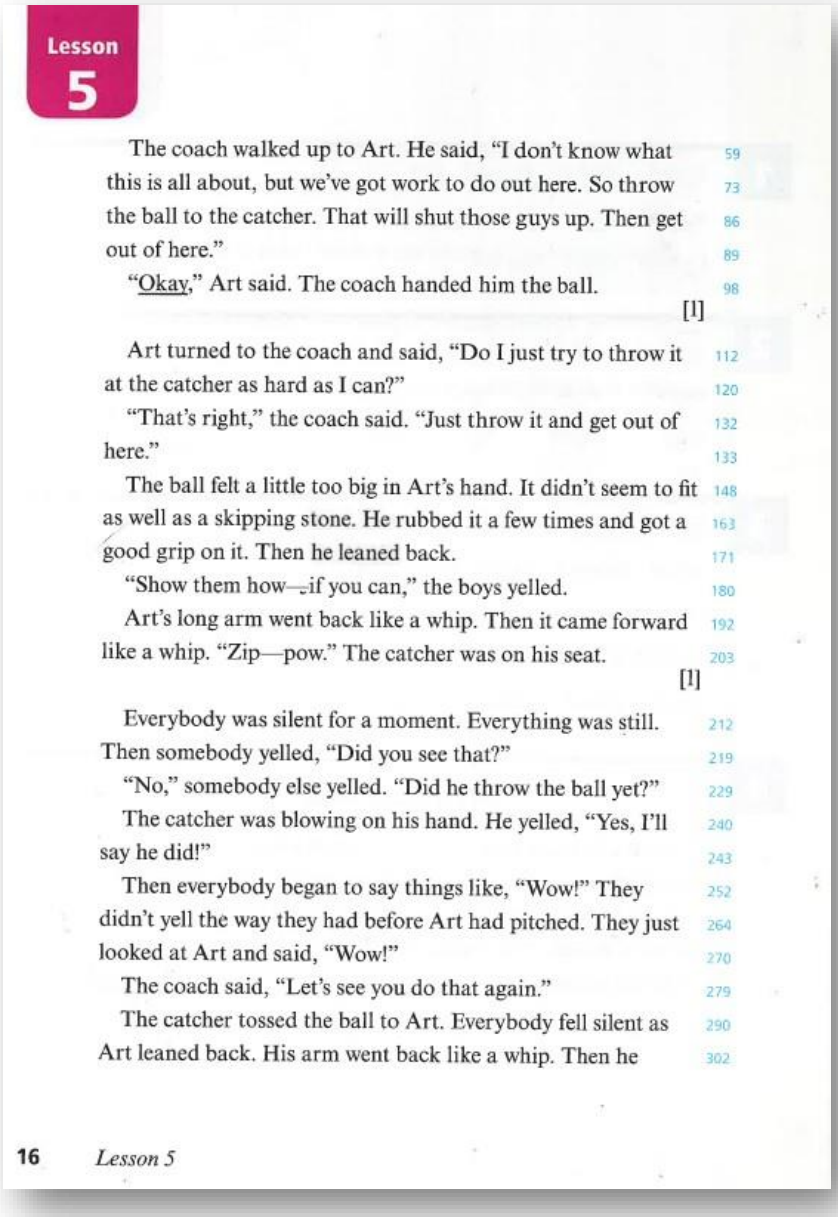
Art didn't know what to do. He wanted to leave, but everybody was yelling, "Come on, Art, show us how to pitch." 11 22

Some boys grabbed Art and started to lead him to the pitcher's mound. "Here he is, Coach," one of the boys hollered. "The star pitcher." 33 44 47

Lesson 5 **15**

Appendix B Figure 17 Leveled Reading Passage (Page 2 of 4)

SRA Decoding Strategies Level B2 for the Higher Reading Level Group



Lesson 5

The coach walked up to Art. He said, "I don't know what this is all about, but we've got work to do out here. So throw the ball to the catcher. That will shut those guys up. Then get out of here." 59 73 86 89

"Okay," Art said. The coach handed him the ball. 98

[1]

Art turned to the coach and said, "Do I just try to throw it at the catcher as hard as I can?" 112 120

"That's right," the coach said. "Just throw it and get out of here." 132 133

The ball felt a little too big in Art's hand. It didn't seem to fit as well as a skipping stone. He rubbed it a few times and got a good grip on it. Then he leaned back. 148 163 171

"Show them how—if you can," the boys yelled. 180

Art's long arm went back like a whip. Then it came forward like a whip. "Zip—pow." The catcher was on his seat. 192 203

[1]

Everybody was silent for a moment. Everything was still. Then somebody yelled, "Did you see that?" 212 219

"No," somebody else yelled. "Did he throw the ball yet?" 229

The catcher was blowing on his hand. He yelled, "Yes, I'll say he did!" 240 243

Then everybody began to say things like, "Wow!" They didn't yell the way they had before Art had pitched. They just looked at Art and said, "Wow!" 252 264 270

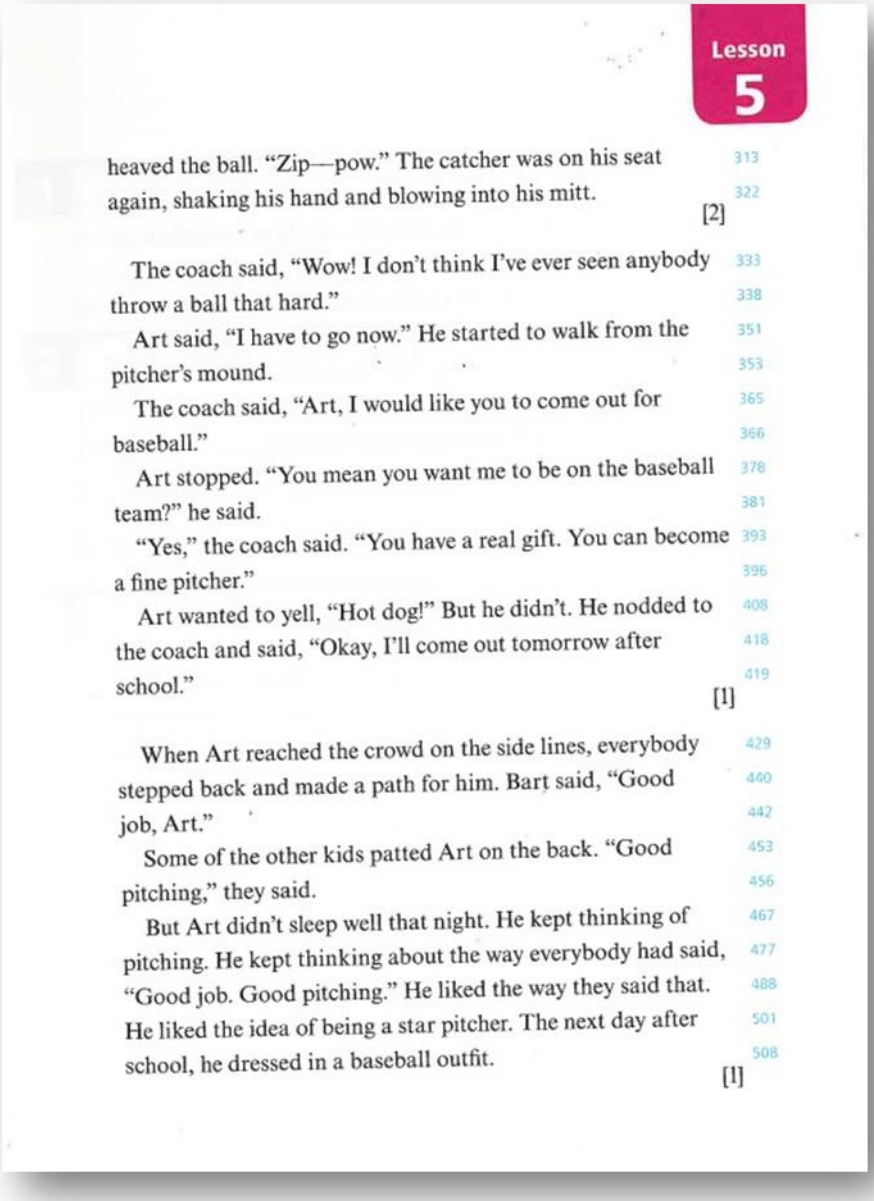
The coach said, "Let's see you do that again." 279

The catcher tossed the ball to Art. Everybody fell silent as Art leaned back. His arm went back like a whip. Then he 290 302

16 *Lesson 5*

Appendix C Figure 18 Leveled Reading Passage (Page 3 of 4)

SRA Decoding Strategies Level B2 for the Higher Reading Level Group



Lesson 5

heaved the ball. "Zip—pow." The catcher was on his seat again, shaking his hand and blowing into his mitt. [2]

The coach said, "Wow! I don't think I've ever seen anybody throw a ball that hard."

Art said, "I have to go now." He started to walk from the pitcher's mound.

The coach said, "Art, I would like you to come out for baseball."

Art stopped. "You mean you want me to be on the baseball team?" he said.

"Yes," the coach said. "You have a real gift. You can become a fine pitcher."

Art wanted to yell, "Hot dog!" But he didn't. He nodded to the coach and said, "Okay, I'll come out tomorrow after school." [1]

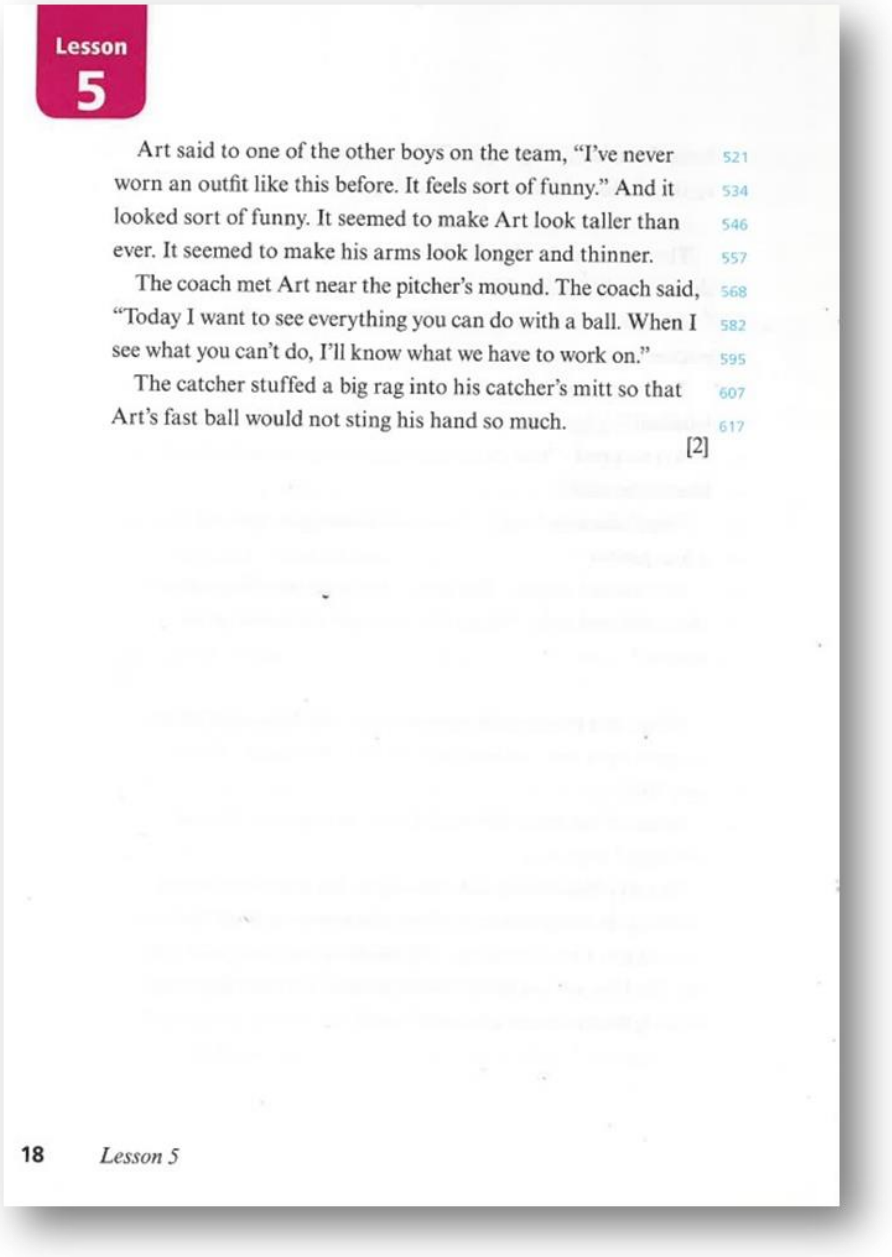
When Art reached the crowd on the side lines, everybody stepped back and made a path for him. Bart said, "Good job, Art."

Some of the other kids patted Art on the back. "Good pitching," they said.

But Art didn't sleep well that night. He kept thinking of pitching. He kept thinking about the way everybody had said, "Good job. Good pitching." He liked the way they said that. He liked the idea of being a star pitcher. The next day after school, he dressed in a baseball outfit. [1]

Appendix D Figure 19 Leveled Reading Passage (Page 4 of 4)

SRA Decoding Strategies Level B2 for the Higher Reading Level Group



Lesson 5

Art said to one of the other boys on the team, "I've never worn an outfit like this before. It feels sort of funny." And it looked sort of funny. It seemed to make Art look taller than ever. It seemed to make his arms look longer and thinner.

The coach met Art near the pitcher's mound. The coach said, "Today I want to see everything you can do with a ball. When I see what you can't do, I'll know what we have to work on."

The catcher stuffed a big rag into his catcher's mitt so that Art's fast ball would not sting his hand so much.

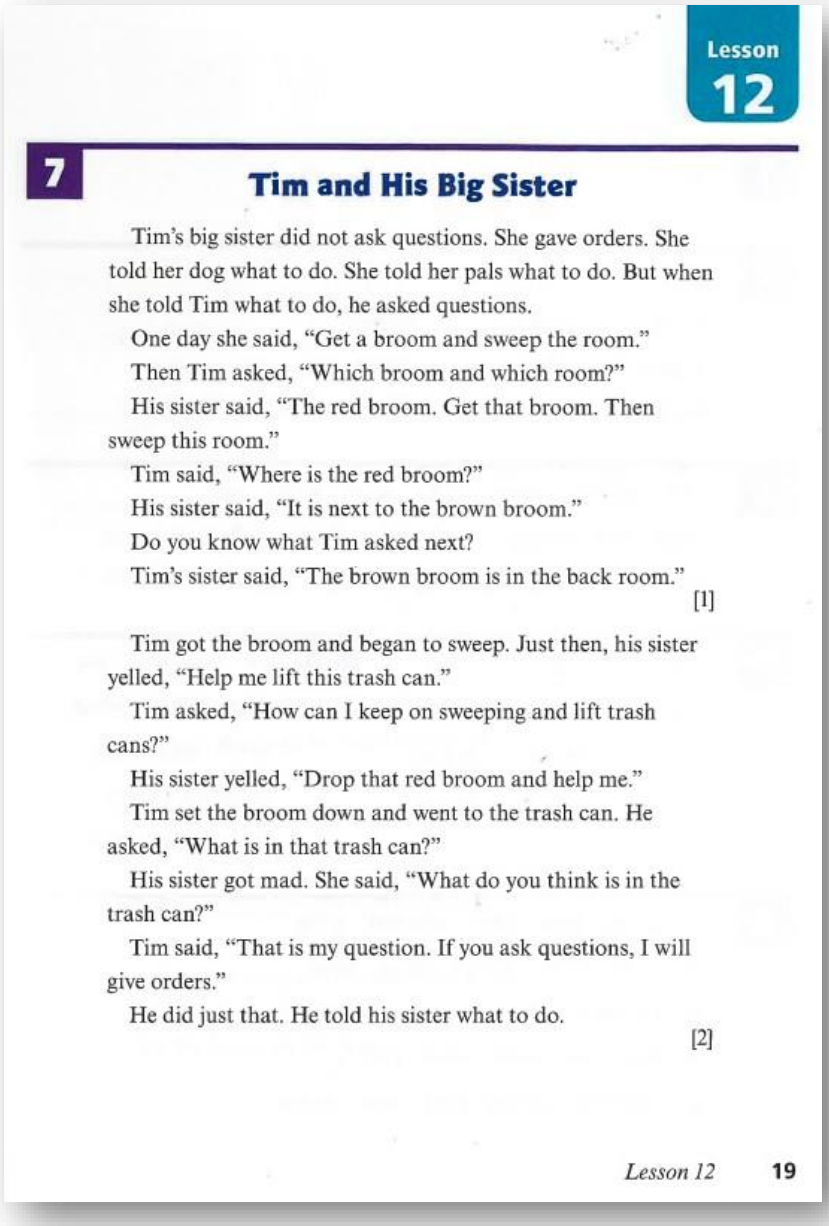
521 534 546 557 568 582 595 607 617

[2]

18 *Lesson 5*

Appendix E Figure 20 Leveled Reading Passage (Page 1 of 1)

SRA Decoding Strategies Level B1 for the Lower Reading Group



Lesson 12

7

Tim and His Big Sister

Tim's big sister did not ask questions. She gave orders. She told her dog what to do. She told her pals what to do. But when she told Tim what to do, he asked questions.

One day she said, "Get a broom and sweep the room."

Then Tim asked, "Which broom and which room?"

His sister said, "The red broom. Get that broom. Then sweep this room."

Tim said, "Where is the red broom?"

His sister said, "It is next to the brown broom."

Do you know what Tim asked next?

Tim's sister said, "The brown broom is in the back room."

[1]

Tim got the broom and began to sweep. Just then, his sister yelled, "Help me lift this trash can."

Tim asked, "How can I keep on sweeping and lift trash cans?"

His sister yelled, "Drop that red broom and help me."

Tim set the broom down and went to the trash can. He asked, "What is in that trash can?"

His sister got mad. She said, "What do you think is in the trash can?"

Tim said, "That is my question. If you ask questions, I will give orders."

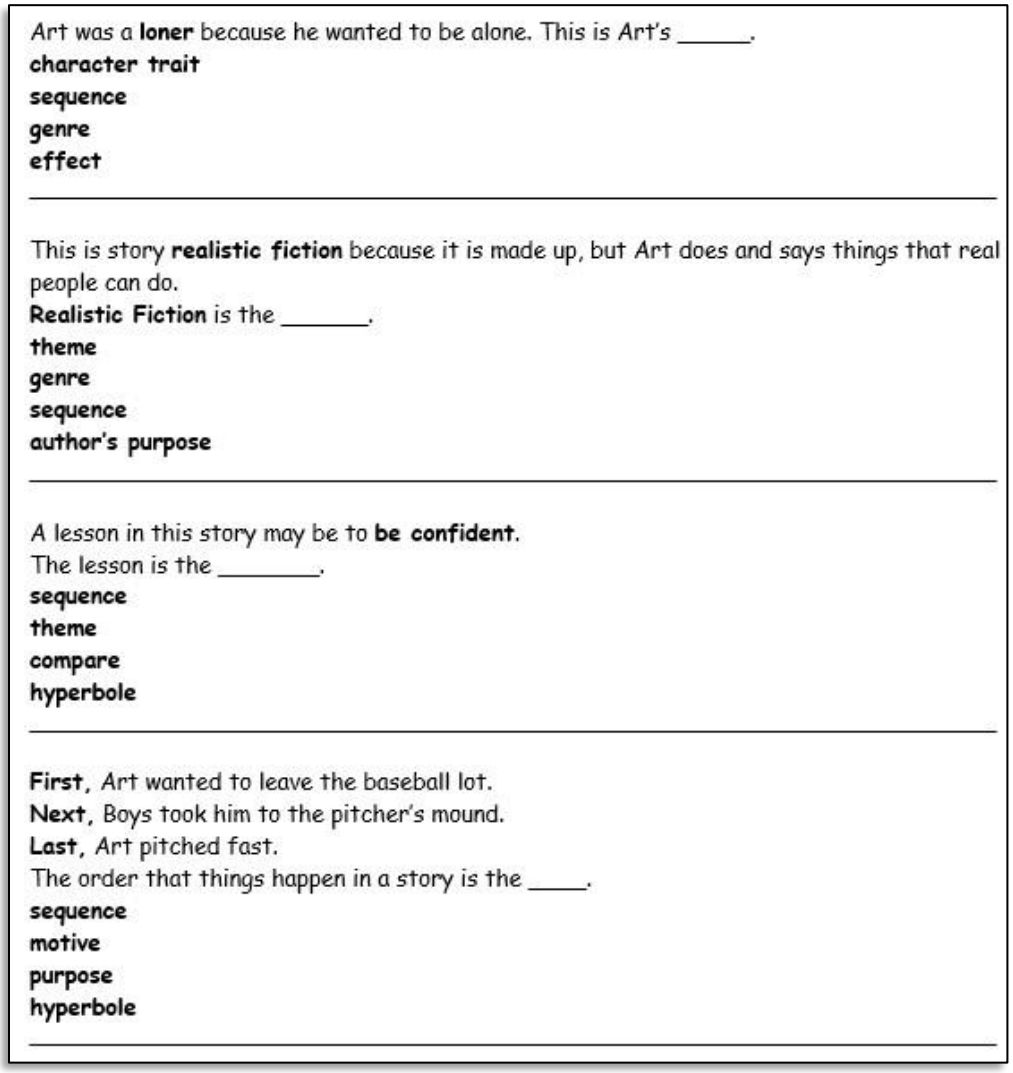
He did just that. He told his sister what to do.

[2]

Lesson 12 19

Appendix F Leveled Comprehension Questions and Multiple Choices Higher Group

(Image 1 of 3)



Art was a **loner** because he wanted to be alone. This is Art's _____.
character trait
sequence
genre
effect

This is story **realistic fiction** because it is made up, but Art does and says things that real people can do.
Realistic Fiction is the _____.
theme
genre
sequence
author's purpose

A lesson in this story may be to **be confident**.
The lesson is the _____.
sequence
theme
compare
hyperbole

First, Art wanted to leave the baseball lot.
Next, Boys took him to the pitcher's mound.
Last, Art pitched fast.
The order that things happen in a story is the ____.
sequence
motive
purpose
hyperbole

Appendix G Leveled Comprehension Questions and Multiple Choices Higher Group

(Image 2 of 3)

Art liked the way everybody said "Good job. Good pitching."
For the first time ever, Art felt like people liked him.
So, the next day Art dressed in a baseball outfit.

Art's _____ for wearing the baseball outfit was to be liked by everybody.
motive
contrast
hyperbole
effect

We can _____ the ways Art is the **same** at the beginning and the end of the story.
contrast
compare
cause
effect

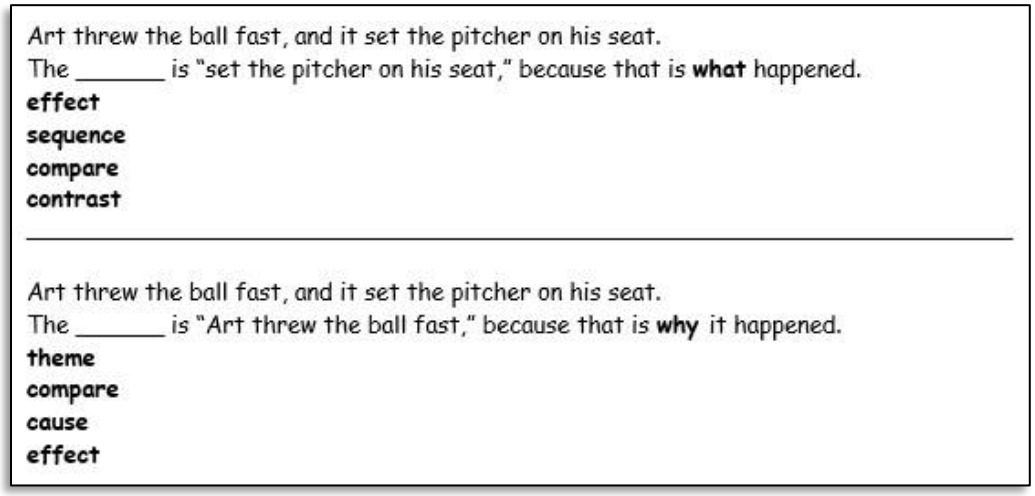
We can _____ the ways Art is **different** at the beginning and the end of the story.
effect
compare
cause
contrast

The story about Art was written to **entertain** us with a funny story. The reason an author writes is the _____.
trait
genre
hyperbole
purpose

Art threw the ball like a shot. This is _____ because the ball didn't really move as fast as a shot. The author just exaggerated.
trait
hyperbole
cause
effect

Appendix H Leveled Comprehension Questions and Multiple Choices Higher Group

(Image 3 of 3)

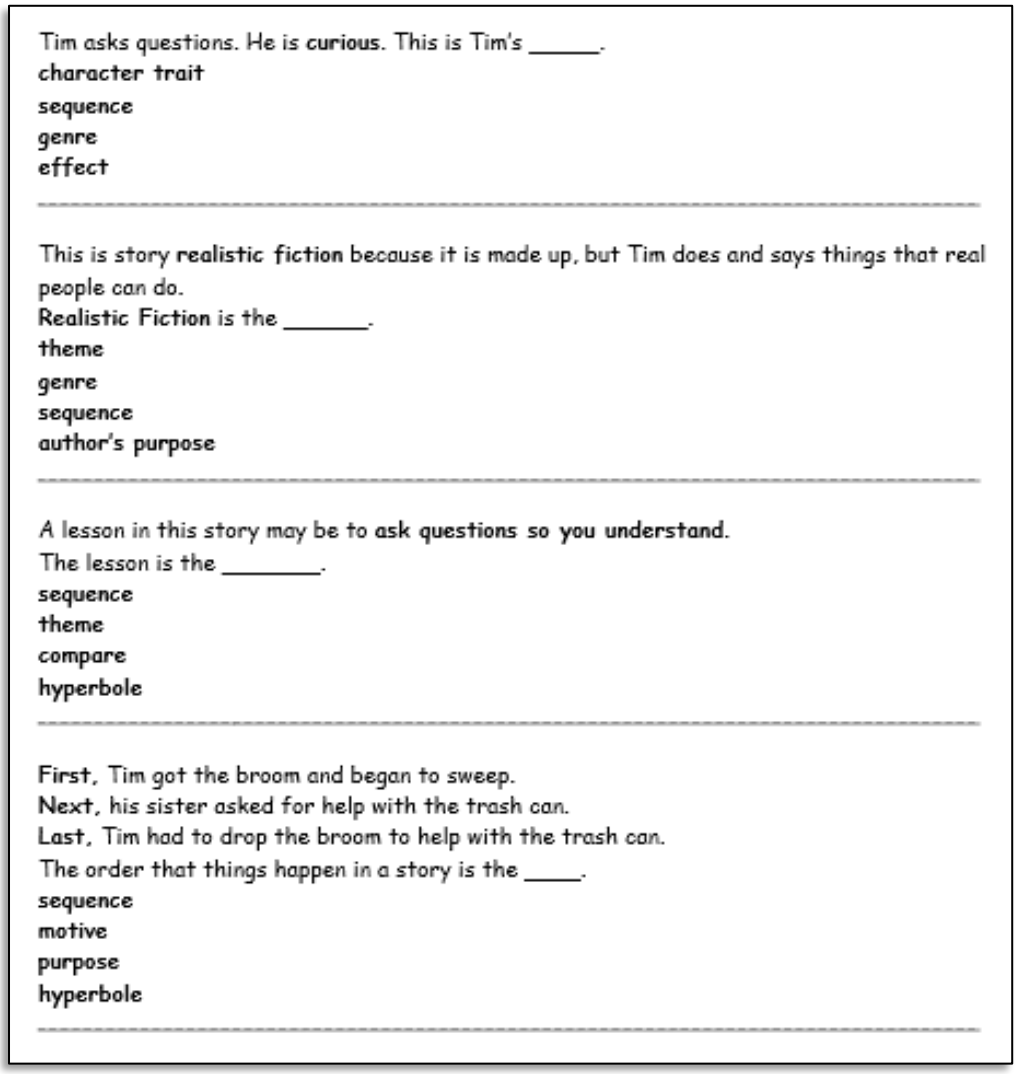


Art threw the ball fast, and it set the pitcher on his seat.
The _____ is "set the pitcher on his seat," because that is **what** happened.
effect
sequence
compare
contrast

Art threw the ball fast, and it set the pitcher on his seat.
The _____ is "Art threw the ball fast," because that is **why** it happened.
theme
compare
cause
effect

Appendix I Leveled Comprehension Questions and Multiple Choices Lower Group

(Image 1 of 3)



Tim asks questions. He is **curious**. This is Tim's _____.
character trait
sequence
genre
effect

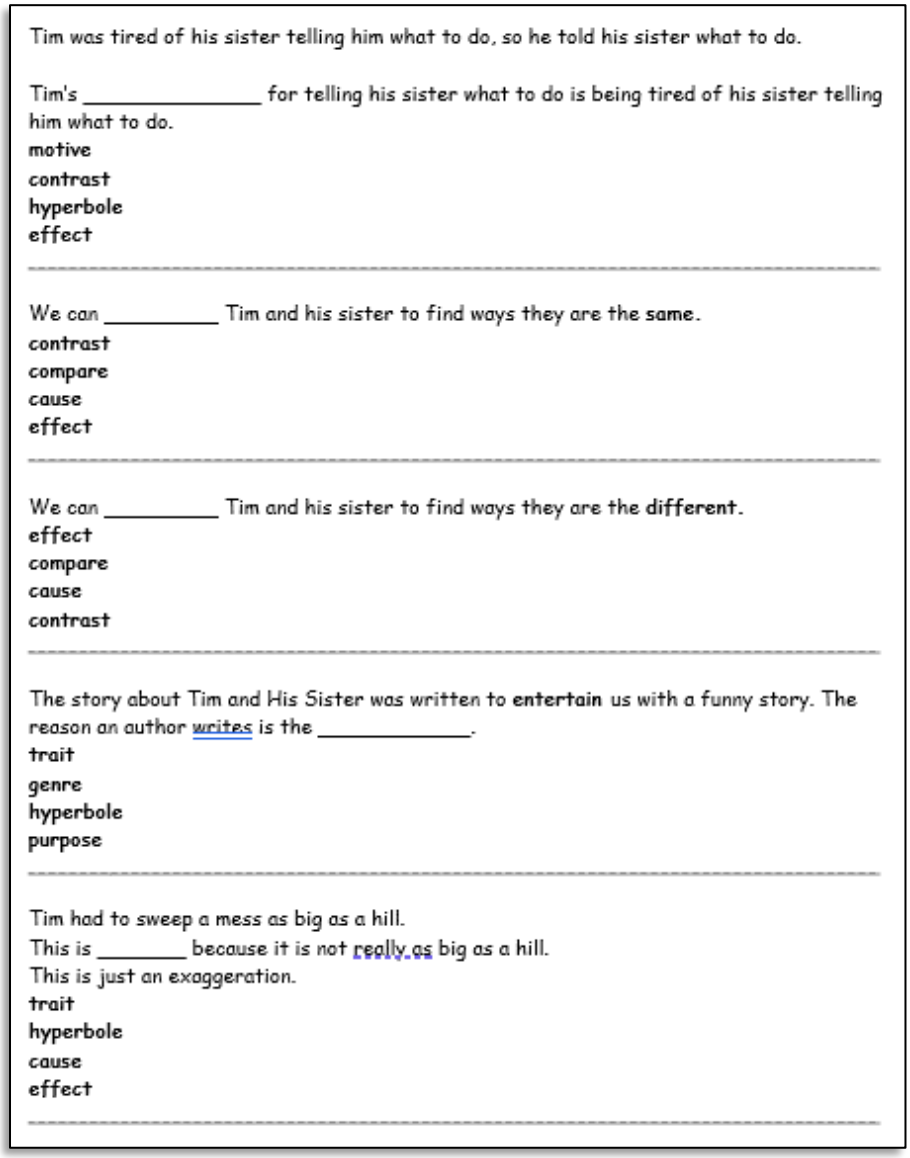
This is story **realistic fiction** because it is made up, but Tim does and says things that real people can do.
Realistic Fiction is the _____.
theme
genre
sequence
author's purpose

A lesson in this story may be to **ask questions so you understand.**
The lesson is the _____.
sequence
theme
compare
hyperbole

First, Tim got the broom and began to sweep.
Next, his sister asked for help with the trash can.
Last, Tim had to drop the broom to help with the trash can.
The order that things happen in a story is the ____.
sequence
motive
purpose
hyperbole

Appendix J Leveled Comprehension Questions and Multiple Choices Lower Group

(Image 2 of 3)



Tim was tired of his sister telling him what to do, so he told his sister what to do.

Tim's _____ for telling his sister what to do is being tired of his sister telling him what to do.
motive
contrast
hyperbole
effect

We can _____ Tim and his sister to find ways they are the **same**.
contrast
compare
cause
effect

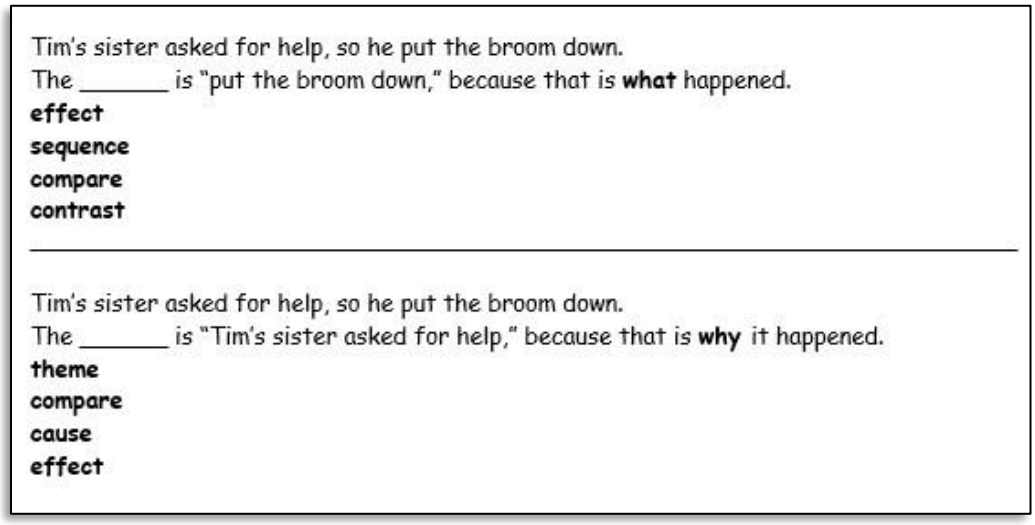
We can _____ Tim and his sister to find ways they are the **different**.
effect
compare
cause
contrast

The story about Tim and His Sister was written to **entertain** us with a funny story. The reason an author writes is the _____.
trait
genre
hyperbole
purpose

Tim had to sweep a mess as big as a hill.
This is _____ because it is not really as big as a hill.
This is just an exaggeration.
trait
hyperbole
cause
effect

Appendix K Leveled Comprehension Questions and Multiple Choices Lower Group

(Image 3 of 3)



Tim's sister asked for help, so he put the broom down.
The _____ is "put the broom down," because that is **what** happened.
effect
sequence
compare
contrast

Tim's sister asked for help, so he put the broom down.
The _____ is "Tim's sister asked for help," because that is **why** it happened.
theme
compare
cause
effect

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