~ Chapter 2

Navigating the Layers of Text Complexity to Identify Embedded Text Supports for Beginning Readers

Stephanie Grote-Garcia, Ph.D.
University of the Incarnate Word

Abstract

This discussion focused on navigating the layers of text complexity to determine the embedded text supports provided by authors. Quantitative dimensions of the texts were examined, such as word count, number of sentences, sentence length, unique words, most used words and phrases, sentence variety, Flesch-Kincaid grade levels, and Flesch-Kincaid reading ease. Also examined were qualitative dimensions, including text structure, text arrangement, clarity, and levels of meaning. Findings concluded that authors may intentionally or unintentionally assist young readers by embedding the following into their texts: repeated words and phrases, simplified syntax, dialogue boxes, embedded definitions, special fonts, and predictable text structures. Selected children's literature featured on the International Literacy Association's 2015 and 2016 Children's Choice and Teachers' Choice reading lists were provided to illustrate the identified embedded text supports. Lastly, semantic gradients were described as one research-based activity that can bridge the gap between the author's embedded supports and the complex texts students will encounter in later years.

Keywords: *beginning readers, literacy activities, text complexity, text supports, semantic gradients*

Text complexity has erupted in "hotness" in recent years (Cassidy, Grote-Garcia, & Orlieb, 2015). This surge of interest followed seven decades in which text complexity received only moderate attention (Allington, McCuiston, & Billen, 2015). Mistakenly, these seven decades of little attention followed by the recent surge of interest has created a false sense that text complexity is a new concept related only to the Common Core State Standards (National Governors Association Center for Best Practices (NGA Center) & Council of Chief State School Officers (CCSSO), 2010). In reality, text complexity is not new to the field of literacy, and it impacts many literacy topics outside of the Common Core State Standards (CCSS) (e.g., guided reading, literature circles, and read alouds).

Much of the recent emphasis placed on text complexity has been a result of the increased "push for college-ready individuals"

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(Allington et al., 2015, p. 491). Acknowledging that Texas public schools share this same expectation (see Texas Higher Education Coordinating Board & Texas Education Agency, 2009), Cassidy, Ortlieb, and Grote-Garcia (2016) declared that text complexity should be considered "very hot" in the Lone Star State. In other words, Texas educators should be talking about text complexity because students need to leave high school prepared for the complex readings they will encounter in college or a career. Overall, regardless of which state standards are being used, college and career readiness is dependent upon learning to read complex texts. Therefore, text complexity is an important topic for all K-12 classrooms.

The majority of recent publications addressing text complexity seem to target Grades 3 and above. Perhaps this is because the greatest increase in text complexity occurs for Grades 2 through 5 (Hiebert & Mesmer, 2013), or that students are expected to transition into fluent readers while in the third grade (National Reading Panel, 2000). The limited information for teachers of Grades K-2 may leave educators wondering how text complexity impacts their beginning readers. Teachers of Grades K-2 might also wonder how they can better prepare their beginning readers for encountering complex text.

This chapter focused on navigating the layers of text complexity to identify the embedded text supports provided by authors. Selected children's literature featured on the International Literacy Association's (ILA) 2015 and 2016 *Children's Choice* and *Teachers' Choice* reading lists were included to illustrate the embedded text supports (ILA, 2015a, 2015b, 2016a, 2016b). Following this discussion, semantic gradients were described as one research-based activity that K-2 educators can use to bridge the gap between the authors' embedded supports and the complex texts students encounter.

Identifying Embedded Text Supports

Text complexity is defined by the three-part model described in Appendix A of the CCSS (NGA Center & CCSSO, 2010, p. 4). This model was used as the structural framework guiding the current investigation of embedded text supports. Table 1 describes the three parts of the model.

Table 1

NGA Center & CCSO's Three-Part Model for Text Complexity

Dimension of Model	Description
Quantitative	Aspects of text complexity, such as word length or frequency, sentence length, and text cohesion, that are difficult if not impossible for a human reader to evaluate efficiently, especially in long texts, and are thus typically measured by computer software.
Qualitative	Aspects of text complexity are best measured or only measurable by an attentive human reader, such as levels of meaning or purpose, structure, language conventionality and clarity, and knowledge demands.
Reader and Task	Variables specific to particular readers (such as motivation, knowledge, and experiences) and to particular tasks (such as purpose and the complexity of the task assigned and the questions posed).

Methods

The current research has been built upon the idea that authors of books for beginning readers may intentionally or unintentionally embed texts supports to guide readers in gaining and practicing early literacy skills. The methods for identifying these embedded supports involved a three-step process. First, each book from ILA's 2015 and 2016 *Children's Choice* and *Teachers' Choice* reading lists (n = 80) were located and read by two readers (ILA, 2015a, 2015b, 2016a, 2016b). It was decided to use books featured on these lists because children and teachers have identified them as books they enjoy reading.

Second, the two readers individually identified the specific quantitative and qualitative features of each text. For quantitative features, Google Documents was used, along with two Google Document add-ons (i.e., Speech Recognition SoundWriter and ProWriting Aid). Individually, the two readers first read a text aloud while Speech Recognition SoundWriter typed the text into a Google Document. Next, the researchers used ProWriting Aid to identify the following quantitative data: (a) word count, (b) number of sentences, (c) sentence length, (d) unique words, (e) most used words and phrases, (f) sentence variety, (g) Flesch-Kincaid grade levels, and (h) Flesch-Kincaid reading ease. The researchers also noted the following qualitative features: (a) text structure, (b) text arrangement, (c) clarity, and (d) levels of meaning. After reading and analyzing the texts individually, the two readers then discussed their analyses until they reached 100% consensus and reported their findings in a spreadsheet. It is noteworthy to mention that the Reader and Task dimension was not analyzed because the majority of that data were not represented within the text itself.

The final step involved coding the data. The researcher, who also served as one of the readers, returned to the spreadsheet and read each qualitative and quantitative feature listed. The researcher highlighted data that was supportive in nature (e.g., repeated words and short sentences) and identified these excerpts as embedded text supports. In the sections that follow, a description of identified embedded supports is provided, along with lists of associated children's books and a suggested activity that gradually prepares beginning readers for more complex texts.

Findings

Text Supports for Quantitative Dimensions

Quantitative dimensions included countable items, such as the number of words in a sentence (see Table 2). In addition to this data, ProWriting Aid also identified word repetition, repeated phrases, phrases, Flesch-Kincaid reading ease, and Flesch-Kincaid grade-level. All 80 books that were included in the analyses had a Flesch Reading Ease score between 86 and 110. ProWriting Aid (2016) explained that the Flesch-Kincaid reading ease score is calculated with the total number of words in each sentence and the total number of syllables in each word. After this calculation, a score between 1 and 120 is assigned (the higher the number, the more readable the text). With Flesch-Kincaid reading ease scores ranging between 86 and 110, the analyzed books can be described as highly readable texts. All books included in analyses were also assigned a Flesch-Kincaid grade level score of 3.5 or lower, thus suggesting that all books were appropriate for beginning readers.

Findings also revealed two quantitative embedded supports. First, some authors used fewer unique words (i.e., the difference between total number of words and word repetitions). Rasinski (2003) identified high exposure to repeated words and phrases within text as an effective way to increase word accuracy, which in return, increases reading fluency. *I Will Take a Nap* by Mo Willems (2015b) is a good example of such a text. Findings showed that 33.19% of the words were unique, leaving the rest of the text to feature repeated words. Willems repeated the words "nap" (n = 15), "snore" (n = 14), "cranky" (n = 8), "turnip" (n = 7), and "floating" (n = 6).

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Table 2

Quantitative Dimensions Identified in Book Analyses

Book	Total Word Count	Average Sentence Length	Number of Sentences	Percentage of Unique Words
Pete the Cat and the Bedtime Blues by Dean and Dean	355	6.6	54	36.90%
Pete the Cat and the New Guy by Dean and Dean	428	10	43	36.92%
Charlie Plays Ball by deGroat	348	4.8	73	54.89%
Must. Push. Buttons! by Good	305	6.5	47	43.28%
Cats Are Cats by Gorbachev	159	6.4	25	41.51%
The Runaway Tortilla by Kimmel	1,268	6.7	139	26.66%
The Nuts: Sing and Dance in Your Polka-Dot Pants by Litwin	336	5.2	62	36.01%
Max the Brave by Vere	363	8.1	45	37.74%
I Really Like Slop by Willems	188	4.2	45	46.28%
I Will Take a Nap by Willems	238	4.3	55	33.19%

Some authors use fewer unique words by repeating phrases to support readers. Such texts, also known as repetitious patterned books, allow readers to predict subsequent words or phrases in the text, thus leading them toward greater reading accuracy, increased speed, and ultimately greater comprehension (Zipprich, Grace, & Grote-Garcia, 2009). Kimmel (2015) used this technique in *The Runaway Tortilla,* a story in which a tortilla is running to escape his demise. Throughout his adventure, the tortilla repeated a rhythmic message to those chasing him. With the highest word count of 1,268 words, *The Runaway Tortilla* also featured the highest percentage of repeated words (73.34%). Other authors used repeated phrases that resembled the chorus of a song. Examples included *Pete the Cat and the New Guy* (Dean & Dean, 2014), *Pete the Cat and the Bedtime Blues* (Dean & Dean, 2015), and *The Nuts: Sing and Dance in Your Polka-Dot Pants* (Litwin, 2015).

The second quantitative embedded support was simplified syntax, or shorter sentences. Alvermann et al. (2013) advised that because of the increased syntactic complexity

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presented by lengthier sentences, they are often, but not always, considered harder to read when compared to shorter sentences. Authors who embedded this support were deGroat (2015) in *Charlie Plays Ball* (Average Sentence Length = 4.8 words) and Willems (2015a, 2015b) in both *I Like Slop* (Average Sentence Length = 4.2 words) and *I Will Take A Nap* (Average Sentence Length = 4.3 words).

Text Supports for Qualitative Dimensions

Qualitative dimensions included aspects of text complexity that were best measured by an attentive human reader. Included dimensions were levels of meaning or purpose, the structure of the text, language conventionality and clarity, and knowledge demands (see Table 3).

Table 3

Embedded Supports for Qualitative Dimensions Identified in Book Analyses

Embedded Support	Featured Literature
Dialogue Boxes	*My Teacher is a Monster! No, I am Not* by Brown *Sick Simon* by Krall *Fright Club* by Long *This is a Moose* by Morris
Embedded Definitions	*Fancy Nancy and the Wedding of the Century* by O'Connor
Special Font	*Because I Stubbed my Toe* by Byous
Predictable Text Structures	*Ten Pigs: An Epic Bath Adventure* by Anderson *My Teacher is a Monster! No, I am Not* by Brown

As listed in Table 3, there were four types of embedded supports found within the analyzed books. Authors may provide embedded supports that present implied knowledge in a more direct manner, such as story dialogue. A way that authors can scaffold a reader's understanding of who is talking is by providing text within dialogue boxes. This technique was used in *My Teacher is a Monster!* (Brown, 2014), *Sick Simon* (Krall, 2015), *Fright Club* (Long, 2015), and *This is a Moose* (Morris, 2014).

A second way that authors may support beginning readers is by embedding definitions of words. For example, O'Connor (2014) used this embedded support in *Fancy Nancy and the Wedding of the Century* by stating, "Weddings are always such glorious occasions. (Occasion is a fancy word for special event.)" (p. 1). Embedded definitions of words, not only assist the reader in understanding individual words, but they can also help the reader with building meaning of the overall text. Documentation of the relationship between vocabulary knowledge and reading comprehension date back to the early 20th century (Thorndike, 1917). In his research, Thorndike analyzed readers "mistakes" to comprehension questions and concluded that vocabulary knowledge was a prerequisite, but not necessarily sufficient, for readers to understand the overall passages. Since the early work of Thorndike, several additional studies have also documented the impact that vocabulary knowledge has on reading comprehension (Ash & Baumann, 2017;

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Goodwin & Ahn, 2013; Hairrell, Rupley, & Simmons, 2011).

Authors may also emphasize specific words by changing the font or using boldface type. In the text, *Because I Stubbed My Toe*, Byous (2014) brought attention to the verbs within each phrase by placing them in boldface print – "this morning I **stubbed** my toe. And that **shook** the chair" (p. 1 & 2). By doing so, Byous emphasized the selected vocabulary and drew the reader's attention to the structure. This is significant in *Because I Stubbed My Toe* because the verbs represented the main events of the story, which unfold in a cause and effect pattern. In other words, with each boldface word, Byous appears to tell readers, "Pay attention to this word. It is a main event that will cause the next main event to happen."

Finally, authors may arrange texts into familiar or predictable structures to guide the reader. Such actions are supported with research from the last forty years that suggests comprehension is enhanced when texts are organized into well-developed structures (Kintsch, Mandel, & Kozminsky, 1977; Mandler & Johnson, 1977; Thorndyke, 1977). Two books that were arranged as circular stories were *Ten Pigs: An Epic Bath Adventure* (Anderson, 2015) and *My Teacher is a Monster! No, I Am Not* (Brown, 2014). Both of these stories terminated back at the starting point of the story.

Closing the Gap Between Embedded Supports and Complex Text

How can teachers bridge the gap between the embedded supports provided by the author, and complex texts students encounter? The two quantitative supports (i.e., repeated words/phrases and simplified syntax) and the four qualitative supports (i.e., dialogue boxes, embedded definitions, special fonts, and predictable text structures) provided unique opportunities to study the choices that authors make while crafting a story. For example, an author who controls vocabulary through repetitive words and phrases presents an opportunity to examine word choice.

Word choice matters. An individual word can change the interaction that takes place between the author and the reader. For example, imagine a fictional character named Sonja who leaves her burning house and the author wrote, "Sonja limped away from the burning house." The word "limped" may cause a reader to infer that Sonja was injured in the fire and to question how the injury occurred. In other words, word choice may prompt a reader to question previous story events. Consider instead that the author wrote, "Sonja sprinted away from the burning house." The word "sprinted" may not only cause a reader to infer that Sonja is in good health, but it may also influence the reader's idea of Sonja's age. In other words, readers may make inferences about character traits from one word.

An activity that can build readers' awareness of word choice is semantic gradients. Described by Greenwood and Flanigan (2007) as "an array of related words placed along a continuum" (p. 25), semantic gradients assist students with discerning shades of meaning. An example of a semantic gradient has been provided in Figure 1 with the word "slow" on one end and word "fast" on the other. For this activity, the teacher provides students with different post-it notes that contain the following words: "crawl," "limp," "stroll," "walk," "jog," and "sprint." The teacher would then ask students to arrange the post-it notes to reflect the continuum of speed from slow to fast. Uses of these continuums have been identified as theoretically sound (Greenwood & Flanigan, 2007) because they are helpful tools to reinforce the teaching of words in interrelated groups (Stahl & Nagy, 2006).

Closing Thoughts

Text complexity has certainly seen a surge of interest in recent years (Cassidy et al., 2015), likely as a result of an emphasis on college and career readiness (Allington et al., 2015). Text complexity should not be thought of as difficult skill to master. Rather, text complexity should be viewed as a spectrum stretching from a highly scaffolded process to

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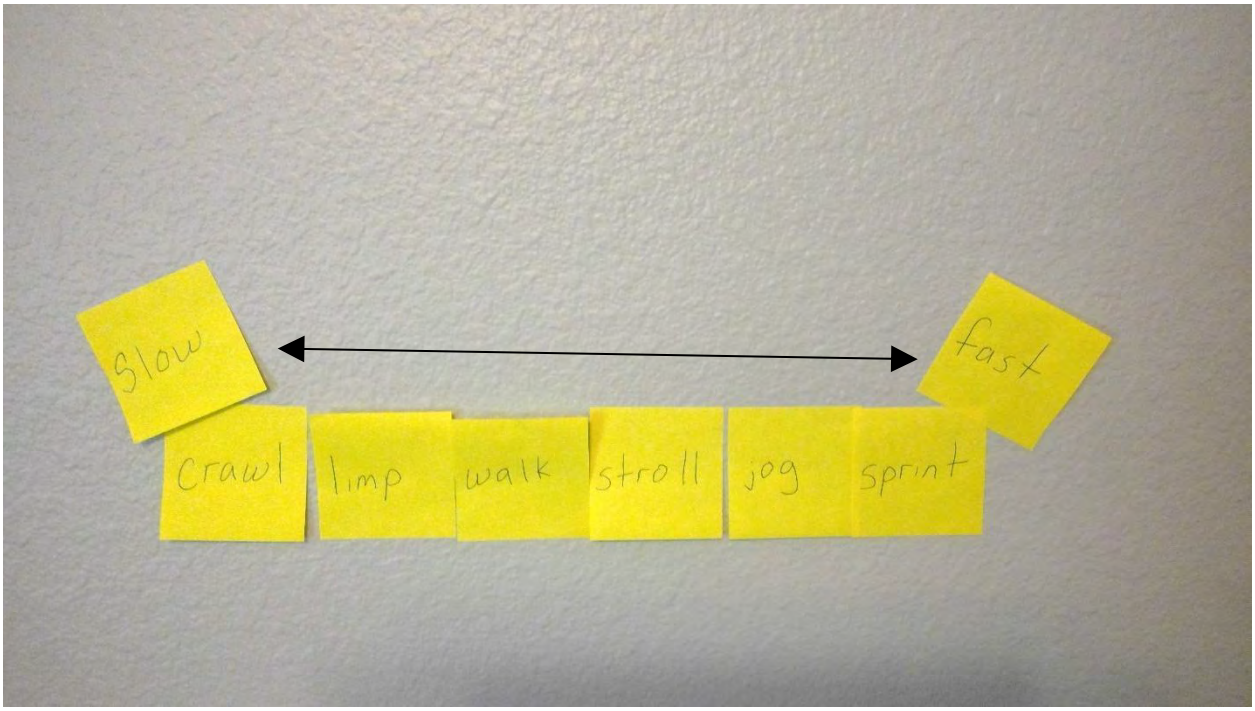

Figure 1. An example of a semantic gradient. Words are arranged to reflect the continuum of speed from slow to fast.

one that is more demanding of reading skills and prior knowledge.

This chapter focused on the highly scaffolded side of the spectrum. The underpinning idea presented is that authors embed text supports (i.e., repeated words/phrases, simplified syntax, dialogue boxes, embedded definitions, special fonts, and predictable text structures) to scaffold early reading. By understanding these embedded supports and adding gradual complexity, teachers can prepare beginning readers to engage with more complex texts. Through this approach, a new relationship exists, one in which the author, illustrator, educator, and the student work together to travel the spectrum of text complexity together.

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