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The Power of Pictures: Drawing on Visual Sign-Systems to Teach Inference in Gerstein's *The Man Between Two Towers*

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Abstract

The ability to infer while reading is a critical part of meaning-making. Readers who infer go beyond the literal words on the page by adding information to the text and making implicit connections between the text and their prior knowledge (Barr, Blacowicz, Bates, Katz, & Kaufman, 2013). This skill allows them to establish causal relationships between story events, connect the events to their personal experiences, and determine relationships, motivations, and emotions within and between characters. Drawing on dual coding theory and visual literacy principles, the author demonstrates how the lines in the illustrations of *The Man Between Two Towers* assist the viewer in inferring the main character's changing emotions. The author details Serafini's (2013) exposing, exploring, and engaging protocol for introducing children to the principles of visual literacy with picture books and suggests the additional step of "connecting" the visual elements to the story meaning. Such an approach to literature can further children's ability to make meaning of the text by teaching them to interpret the visual elements, such as line, in picture book illustrations.

Keywords: visual literacies, children's literature, illustrations, picture books, inference, comprehension, prior knowledge, culturally-relevant pedagogy, dual-coding theory

The ability to make inferences has long been considered a necessity for reading proficiency (Anderson & Pearson, 1984; Barr, Blacowicz, Bates, Katz, & Kaufman, 2013; 1984; Pressley & Wharton-McDonald, 1997; Raphael & Pearson, 1985). Readers who infer go beyond the literal words on the page by adding information to the text and making implicit connections between the text and their prior knowledge (Barr, Blacowicz, Bates, Katz, & Kaufman, 2013). This skill allows them to establish causal relationships between story events, connect the events to their personal experiences, and determine relationships, motivations, and emotions within and between characters. While not everyone has the same background knowledge required to infer from the written language of a story, everyone shares similar experiences that affect the ways in which we make sense the physical world. The metaphors we form

from these experiences affect the ways in which we read and make sense of a variety of sign systems (Lakoff & Johnson, 1980). What Lakoff and Johnson refer to as "primary metaphors" affect the ways we understand the visual world in particular. For example, the color red tends to evoke feelings of intensity because when people feel angry or embarrassed the blood rushes to their faces (causing them to take on a reddish tone), their skin may feel hot, and their hearts begin beating faster. One could read, "His face felt hot and turned red," and infer that the character felt angry or embarrassed. Similarly, one could see the color red and think of it as a warm, intensive hue. Sadoski and Paivio (2013) contend that, "cognition depends on the kind of experiences that come from having a body with particular perceptual and motor capacities that are inseparably linked and that together form the matrix within which memory,

emotion, language, and all other aspects of life are meshed” (p. 4). The ability to make inferences that draw upon these metaphors, then, is not only necessary for understanding stories, but is also a critical skill for understanding the world.

If primary, or embodied, metaphors are common amongst human beings, then it would follow that children have a mostly common experiential base from which to draw the metaphorical connections needed to make inferences. They may not bring the surface features of background knowledge, (e.g. the time and place or even the plot structure), but every child brings a rich experiential background of their own that is more than sufficient to understand the deeper level of the protagonists’ changing emotions throughout the story, and how they drive the plot, and, ultimately, the story’s theme. Ricoeur (1976) stated that, “Language is not a world of its own. It is not even a world. But because we are in the world, because we are affected by its situations, and because we orient ourselves comprehensively in those situations, we have something to say, we have experience to bring to language” (p. 20-21).

This statement seems to contradict, or at least qualify, a body of research which indicate that gaps in children’s background knowledge result in comprehension breakdown (e.g. Cain & Oakhill, 1999; Gutierrez, 2005; Pearson & Johnson, 1984; Pressley, 2003; & Willingham, 2006); that the common teaching approach of assuming that surface knowledge must exist before the more “advanced” skills can be taught (DiCicco & Jordan, 2012), and that the advanced skills can be taught directly. I propose that, while some children may not have the background knowledge needed to understand surface structure, nearly all children do possess the experiences to understand the story between the lines.

Drawing on the visual sign system inherent in picture books may be one way that teachers can scaffold the ability to understand the text. The similarities between visual and written language are numerous. Barr, et.al., for example, stated that,

...integrative and inferential processes are by no means unique to written language. Linguistic linkages and spatial, temporal, and causal relations all appear among statements in ordinary conversation as well as in connected text. And these relations are inferred on much the same basis in both cases – on the basis of

general knowledge and previous experiences with the contextual situation (2013, p. 183).

Indeed, research indicates that proficient readers use the same thinking abilities as those in visual literacy (Cain & Oakhill, 1999). Teaching children to infer what is happening in the story through the visual sign system, therefore, could potentially improve their ability to do so in the written text.

Like a well-written text, a well-illustrated picture book combines the stated and the unstated. Well-crafted illustrations both assimilate the metaphor of a common human experience and offer a fresh perspective on the experience (Nikolajeva & Scott, 2006). They might reinforce the written text by showing the objects, characters, and actions within the text, add to a richer understanding of the characters and setting through visual descriptions using color, line, shape, and composition, reciprocate the plot by providing details not given in the written text, and even offer one or more viewpoints to confirm or even contradict the one established in the writing text. All these functions support their ability to infer plot details, character emotions and motivations, and, ultimately, theme. Illustration provides a venue to deepen the story experience for all learners.

How Visual Literacies May Impact Reading Comprehension

The idea of using visual and written sign systems in reading comprehension is supported by dual-coding theory, which holds that visual and verbal information, while operating in separate perceptual and cognitive channels, are interdependent in making meaning. To comprehend in one of these sign systems enhances the comprehension in another (Sadoski & Paivio, 2013). Knowing how to use the visual sign system as well as the written, therefore, could deepen every student’s comprehension. Further, if one of these sign systems were stronger than another, such as the visual being stronger in a student not yet proficient with the English language, capitalizing on the known system could provide a bridge to the other. At the very least, the visual sign system could offer an alternate route to making meaning, even if the meaning was not complete.

Context availability theory (Holcomb, Kounios,

Andreson & West, 1999) offers a slightly different though equally intriguing perspective. This theory contends that we make more and faster associations and connections with the concrete words than we do with the abstract, since the former have both verbal and visual schema representations, and the latter has only verbal. Using pictures to make abstract words and ideas more concrete should provide more opportunities for making meaning than simply drawing upon the written text alone. Teaching children to interpret the pictures in a book could help to make the abstract concepts accessible to those who lack experience with the written language that represents them.

Finally, learning to read pictures may provide a means for drawing on the rich, diverse cultural and personal resources that a student brings with him/her to the reading process.

Pictures evoke emotions that transcend language, culture, and economic boundaries (Gallas, 1994). Visual images are "...a kind of international, universal language that brings meaning to an otherwise incomprehensible cacophony of verbal expression" (Burmark, 2002, p. 3). Giving equal attention to the pictures, as well as words in a story, offers all students a chance to make and share meaning with their peers.

Teaching Inference Through Illustrations

Like reading words, reading pictures takes training and practice (Felton, 2008). Simon, 2002, states that, "One becomes visually literate by studying the techniques used to create images, learning the vocabulary of shapes and colors, identifying the characteristics of an image that give it meaning, and developing the cognitive skills necessary to interpret or create the ideas that inform an image" (p. v). This visual grammar can be learned, and associated meanings socially constructed, through teacher-student interactions in the classroom (Kress & Van Leeuwen, 1996, 2001).

When teaching children to interpret illustrations, Serafini (2014) proposes that teachers first expose, then explore, and then have students engage with picture books. In the exposing stage students become familiar with various genres and how visual and textual devices are used. The exploring stage is where

students look at specific details in multimodal texts to develop a meta-language for use in discussion and analysis. In the engagement stage students might produce their own multimodal works informed by their new knowledge of design.

Each one of these stages is discussed in the context of teaching students to interpret pictures with the visual element of line in Mordecai Gerstein's Caldecott award-winning picture book *The Man Who Walked Between Two Towers*. This book is a true account of tightrope performer Philippe Petit's goal to walk between New York's twin towers in 1975. The book follows a traditional story structure. In the beginning of the book, Petit conceives the idea of walking across the towers and gathers confidence. In the middle section of the book he plans how he will get the rope up the stairs and across the towers. The next day he goes out on the cable oblivious to the gathering crowd and ignoring shouts of the police as he walks, dances, and even rests on the tight rope. The conclusion begins at the point he decides that he is ready to come down from the rope. He allows the police officers to handcuff him, and willingly serves his community service time by performing in the public park.

Exposing Children to the Visual Grammar of Line

Using Serafini's protocol to study the illustrator's use of line in *The Man Who Walked Between Two Towers* might begin by having a general discussion of things with horizontal, vertical, and diagonal directional lines. The children could be asked to draw a line and turn it into a picture. As they share their work with the rest of the class the teacher could list their ideas on chart paper. When everyone is finished sharing the teacher could then ask them to think of what their ideas have in common. For example, with horizontal lines the children might have drawn land, an ocean, a sofa, a bed, or other things that form the base for other objects or people. The teacher could ask them what feelings these horizontal objects make them think of. The children may respond with words such as "resting", "calm", "flat", "boring," which the teacher will then write on chart paper under the heading of "Horizontal Lines Remind Me Of..." If the students do not make these connections the teacher

could scaffold this process by asking something like, “How does it feel when you lie down? What does it feel like to float on an ocean on a sunny day?” The same procedure can be repeated with vertical and diagonal lines on the same or different days. Vertical lines tend to indicate power and strength. Diagonal lines usually indicate movement and energy. Children would apply the same strategy of drawing, thinking, sharing, and listing to understand how these other types of line work.

Line can also establish a relationship between the viewer and the image (Wade, 1994). Pictures can be divided into halves by a horizontal line between the top and the bottom of the picture. The elements of the picture in the top half are considered dominant over the elements in the bottom half. For example, when the character is positioned below the imaginary line he or she is in the less powerful position in relation to the objects in the picture than when he or she is positioned above the line (for further explanation of line and other visual elements see Bang, 2000). This use of line by the illustrator can be pointed out in the same lesson or on another day. When the students have had some time to explore and have developed a basic understanding of how lines communicate the teacher can go on to the exploration stage.

Exploring Line in Picture Books

The exploring stage begins by the teacher asking the students to find places where lines are used on the cover illustration. In *The Man Who Walked Between Two Towers* the tightrope is diagonal, and the sides of the towers are vertical. The teacher may want to refer to the chart from the earlier lesson to see if the lines made by the tower and the tight rope remind them of any of the same words or if they'd like to add new words to the chart. At this point the teacher may want to initiate a short discussion of why the author might have used lines in these ways. Since Petit is moving across the tightrope the function of diagonal line on the cover should be fairly obvious. The vertical lines on the towers indicate their height and power and so imply that walking across them will be difficult. The teacher should then proceed to read the story.

The next day the teacher may want to review what the children know about line and what they discovered about line from the cover illustration. He or she may

also want to revisit the idea of dividing lines, which play a prominent role in the first section of the book. This idea emphasizes Petit's initial recognition of the challenge of walking between the towers. The gradual differences in placement of Petit from the bottom to the top half of the page over the course of the first few pages reflect his growing confidence in his ability to meet the challenge. In the first illustration Petit's head and upper body appear in the very bottom of the left corner of the page as he is looking up at the towers with both towers prominently located in the middle of the page and nearly to the top of the page margin. Along with their placement on the page the repetition of the lines on the sides of the towers reinforce their strength and power. Petit and the reader are dominated by these lines, which indicate the challenge and near impossibility of such a task.

In the next few pages the amount of room and placement on the page of Petit increases in relation to that of the towers to reflect his confidence that he can cross the towers. We first see Petit still located in the left bottom corner but now taking up the entire quadrant. In two separate pictures at the bottom of this page and in the whole next page we see Petit at his daily work of juggling and balancing on a unicycle or tight rope. This work pays off in Petit's growing confidence as indicated on the next few pages. On the next page in the top picture we return to the same view of the back of Petit's head as we did earlier in the book, but this time he is located on his rope above the horizontal line of the page with the towers receding into the background. From this perspective Petit seems nearly as tall as the towers echoing his determination to walk between them. Through the illustrator's use of vertical, horizontal, and diagonal lines in the drawings and in the differences in the division of the scene elements across the line of the page we are invited to see the world as Petit does and witness his growing certainty that he can achieve his goal. “They called me,” Petit explained, referring to the towers. “I didn't choose them. Anything that is giant and manmade strikes me in an awesome way and calls me. I could secretly put my wire between the highest towers in the world. It was something that had to be done, and I couldn't explain it... it was a calling of the romantic type” (PBS, n.d.). Line and other design elements work together to help the viewer infer Petit's feelings and understand the motivations of his actions.

In the middle of the story, confident that he can perform the feat, Petit attempts to gain permission from the authorities. In this section of the book Gerstein makes use of a combination of horizontal lines to provide a sense of equilibrium, vertical lines to communicate energy, and diagonal lines to create movement. These varying line directions result in disequilibrium in the composition that communicates the suspense of whether or not Petit will be able to achieve his goal. For example, when Petit is denied permission to walk between the towers, he is portrayed sitting on the top of a horizontal park bench. One leg is on the seat of a bench and the other rests on its ledge, creating a vertical line. Will Petit remain “grounded” literally and figuratively as indicated by the horizontal lines of the bench, or will he “rise” to the challenge?

Disequilibrium is indicated again by varying line types in the next ten pages as Petit and his friends encounter difficulties in getting a 440 -pound cable to the top of the stairs of one tower and connecting it to the other before morning. We see a dizzying array of vertical lines with multiple viewpoints of the tops and sides of the towers that echo the uncertainty that Petit and his friends have that they will be able to get the cable across the towers by morning.

There are two fold-out pages that comprise the climax of the story. The first contains both a long shot and close up bird’s eye view of Petit. The second shows Petit crossing the towers from the viewpoint of the people below. Petit is drawn so tiny on this page, that from the ground he and the stick he is holding for balance nearly resemble a bird with its wings spread out. The placement of Petit at the very top of the page and the dominance of the vertical lines on the from the viewpoint of the crowd below help to portray the sense of amazement and awe that he is inspiring in them.

The tightrope in the illustrations at this point in the book (as in the cover) is portrayed diagonally, with its slope indicating his movement from left to right and page to page. As one first-hand account stated,

“...upon seeing us he started to smile and laugh and he started going into a dancing routine on the high wire. And when he got to the building we asked him to get off the high wire but instead he turned around and ran back out into the middle... He was bouncing up and down... His feet

were actually leaving the wire and then he would resettle back on the wire again... Unbelievable really... I was spellbound in the watching of it” (PBS, n.d.).

In summary, Gerstein shows us the world as Petit sees it – divided by lines and spaces. Petit doesn’t want to exist “in the lines” as determined by others—he wants to live above, between, and outside the lines of life, both literally and figuratively. Similarly, the viewer can “read between the lines,” whether written or illustrated, to gain a greater understanding of Petit and to connect with his feelings as he achieves his dream to walk where no one else has gone before. The visual element of line can deepen this theme for all the children and provide the support that some children need to make meaning of the text. When children are given the opportunity to learn about how these elements work and to spend time studying and discussing the pictures they are able to enrich and even bridge their understanding of the words. This approach is in contrast to that of a typical story reading where the pictures being shown so quickly that they play, at best, a limited supportive role in making meaning.

Engaging with Visual Grammars

Serafini’s final stage involves students engaging with the visual elements learned and discussed while reading the story. In this stage students might produce their own works informed by their new knowledge of the design element or elements. The teacher might begin a discussion by asking questions related to the theme of the story such as, “What is it like to want something for reasons you can’t explain? Have you ever wanted something as much as Pierre wanted to walk between the towers? What do you want to do that seems impossible?” “How might you feel when you achieve it?” The children can answer these questions in pictures, rather than words, by using line to establish relationships between people and the things that challenge them, to show existing reality versus future possibility, to portray conflicting emotions in making decisions or solving problems; and to illustrate their feelings, and that of the on-lookers of a goal attained. Activities such as these will further

children's understanding of how illustrators use visual language to help the viewer infer character emotions, establish the theme of the story, and make connections between the story theme and their own lives.

Conclusion

The similarities between visual and written literacies imply that the use of the visual sign system may work to build and strengthen the underlying thinking processes common to both systems. Teachers can support children's meaning making by teaching them to interpret the visual elements, such as line, in picture book illustrations. Perhaps most importantly, they can inspire children and themselves to think like Petit: to see the world from a new perspective – one both teacher and students can explore together outside the lines of the traditional literacy instruction.

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