

Brain Frames®

Graphic scaffolds for language, literacy and learning

Bonnie Singer, Ph.D. and Anthony Bashir, Ph.D.

Educators want students to become better problem solvers and utilize multi-sensory avenues for learning, yet language is the primary tool for teaching and assessing what students know and understand in school. Teachers present information orally, deepen understanding through discussion, ask questions, give directions, guide the acquisition of new knowledge through reading, and require students to show their understanding by listening, reading, talking and writing. Consequently, student success or failure in the classroom is largely dependent on language, as it is “both the object of knowledge and a principal means through which new knowledge is acquired” (Cazden, 1973).

Research in the fields of linguistics and cognitive science shows that language is governed by various rules and patterns (e.g., grammar and meaning), but it is shaped by other factors as well. Our brain “plugs words and ideas” into mental/spatial patterns to make sense of what we hear and to plan what we want to say. For example, if someone said, “You won’t believe what happened to me yesterday!” you would expect to hear a story – a sequence of events that recap an experience. As you listened, you would assemble all of the “pieces” of information into a coherent sequence in your mind. Alternatively, if she were telling you about the house she is building, you would listen for details that paint a picture of what it will look like. If, in the middle of that description, she mentioned what she had for dinner last night, you would be inclined to filter out that information because it isn’t consistent with the mental pattern you were using to understand what she was saying. Alternatively, you would need to switch to a new mental/spatial pattern because she changed the topic.



The same goes for expression. How do you describe what the inside of your house looks like or explain how to get home from the grocery store? (Try doing it without using your hands.) You rely on an organizing (spatial) framework for assembling words and sentences so that you say what you want to say in a clear way.



Awareness of such patterns that guide language comprehension and expression is largely unconscious to most people, but it directly influences academic success and clarity of communication. Some students fail to intuit them, and this frequently results in disorganized, haphazard, ineffective, or inefficient approaches to learning. Unless they **recognize** the patterns of information that are laid out in a chapter or presented in a lecture in their mind’s eye, they can’t always **see** how to organize their language and ideas in order to write or tell someone about what they know – even though they

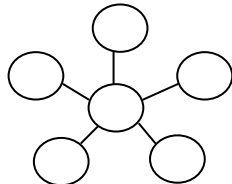
may know a lot. To help students “do school,” we must give them tools to anchor and organize of all the language in which they are swimming.

Making graphic patterns accessible

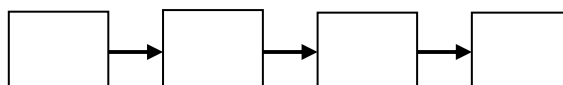
Ample research shows that teaching students graphic strategies that show how to organize language improves academic achievement. Most teachers now appreciate the power of using graphic organizers to support students with learning. Indeed, countless graphics pepper classrooms across the country. With hundreds at their fingertips, teachers may feel at a loss when deciding which organizers to use to support various instructional goals. What’s the difference between the five most popular graphics used to plan a narrative? Or the hamburger, the scorpion, or the house graphic for writing a paragraph? Which one is best? Won’t the old standby – the web – do just fine? Just as a carpenter should not be expected to use only a saw to build a whole house, students should not be limited to a “one size fits all” graphic organizer like the commonly used web.

Reflect on this notion for a minute. What’s the underlying pattern of a story? A story – whether fiction or a recount of past events – is linear in nature. Something happens, then something happens, and then something happens. Events unfold over time. How do you “envision” a sequence of events?

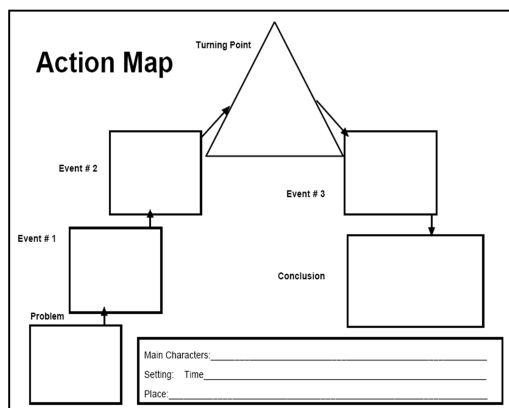
Like this?



Or like this?



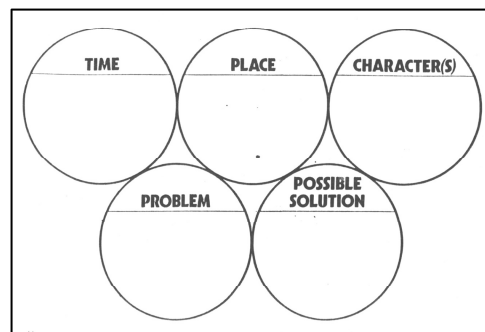
One of these graphics clearly conveys the underlying pattern of how to organize your language to retell what happened at the Battle of Lexington and Concord (a sequence of events) or how you get ready for school (also a sequence of events). The other obscures that sequential pattern. Nothing in the visual structure of a web suggests, “Start here.” Thus, students may struggle to sequence their words and ideas into the linear form of narrative text or the hierarchical form of exposition when working with a web.



With literally hundreds of graphic organizers at their fingertips, some teachers find themselves at a loss when it comes to picking one that will do the job. The seemingly innocuous choice about which one(s) to incorporate into a lesson can influence student performance in the classroom significantly. The challenge for educators is to choose graphics that show students the pattern they need to use to understand information or express what they know.

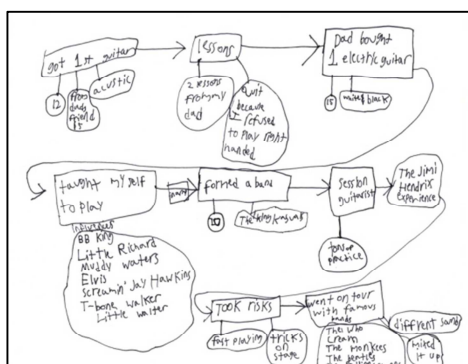
On the flip side, the challenge for students is to select the graphic that best organizes their language so that they can share their knowledge and understanding of the world. Even when these are in synchrony, traditional graphic organizers may truncate student performance.

By nature, if you give students 6 bubbles to fill in on a graphic organizer, they will come up with 6 ideas and then stop. As David Hyerle (1996) says, such organizers are “visually appealing fill-in-the-blank” exercises. They generate no more ideas because the pre-made worksheet didn’t suggest that they should keep going with their thinking. In this sense, *students* aren’t making the decision about how to show what they know; *publishers* are. But what other options do teachers have if they want students to organize language and academic content? Brain Frames® were developed to bridge this gap.



Stepping beyond graphic organizers with Brain Frames

Brain Frames are a set of graphics that organize students’ language, but they aren’t graphic organizers. This begs the question, “If they aren’t graphic organizers, exactly what *are* they?” Brain Frames are a collection of six visual-spatial displays of various forms of language. They show fundamental patterns that underlie listening, speaking, reading, writing, thinking, and verbal problem solving. Literally, they allow teachers and students to “frame” what they understand and what they want to express within a visual pattern that matches where their words should go.



Unlike traditional graphic organizers (i.e., pre-made worksheets that show a pattern), students draw their own Brain Frames from scratch. They are given free rein to capture their thoughts and ideas, using the one that helps them do what they are setting out to do with their language: tell about something, compare and/or contrast two ideas, convey a sequence of events, show relationships and connections, consider the causes and/or effects of an event, or organize information into categories. Because they create them themselves,

students are in full control of meaning making. Those with lots of disorganized ideas have a framework for organizing them. Those with few ideas have a framework that helps them generate more. Learners with visual strengths revel in the graphic nature of the Frames. Learners who have strengths in language use the structure as a scaffold for conveying all of their thoughts. Brain Frames appeal to all learning styles and can be used for universal instructional design and the successful inclusion of all learners.

As explicit, strategic supports for the many language demands of school, the Brain Frames allow teachers and students not only to survive, but to thrive in the classroom. Consequently, they have the potential to be one of the school's most powerful weapons for fostering self-regulated learning and improving academic achievement.