
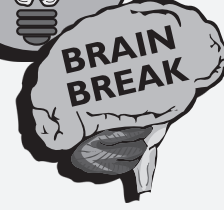



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Look for these icons to find a **Metacognition Moment** or a **Brain Break**—stopping points to think deeply and consider key ideas, or apply a new strategy to your own practice.



Look for this icon at the end of each chapter and find **Red Hot Brain Spots**, quick and easy applications of the material in the chapter designed to help you put theory into practice.

# The New Science of Planning

As a new teacher, I couldn't wait to get my hands on my own red, leather lesson planning book. I saw it as the Holy Grail, a sacred text that I would write each week. I'd then turn it over to the shaman of our tribe—the "AP," or assistant principal—who would then bless the lesson plans and send me back down the hall to my classroom. It was a powerful ritual, reserved for professionals. Only certified teachers were issued lesson planning books, and I had earned that right. Now, three decades later, I realize that most of the important work of planning could not be written in little boxes on a single page. It was much more complex, demanding and metaphysical, and the last thing a truly skilled teacher does is to write. First, he or she must think very deeply, about many things, over a period of time. The new science of planning is both art and science. It draws from cognitive science and mindful spiritual practice. It is part common sense and part inspiration. It is called *brain framing*.

Lesson plans are only one artifact that emerges from this kind of thinking. There is so much more for a teacher to know and be able to do. Thinking about how one's brain and mind can get inside the brain and mind of another human being, especially when that individual is young, inexperienced, and perhaps challenged by difficult life circumstances, is the subject of this book.

## Getting Started

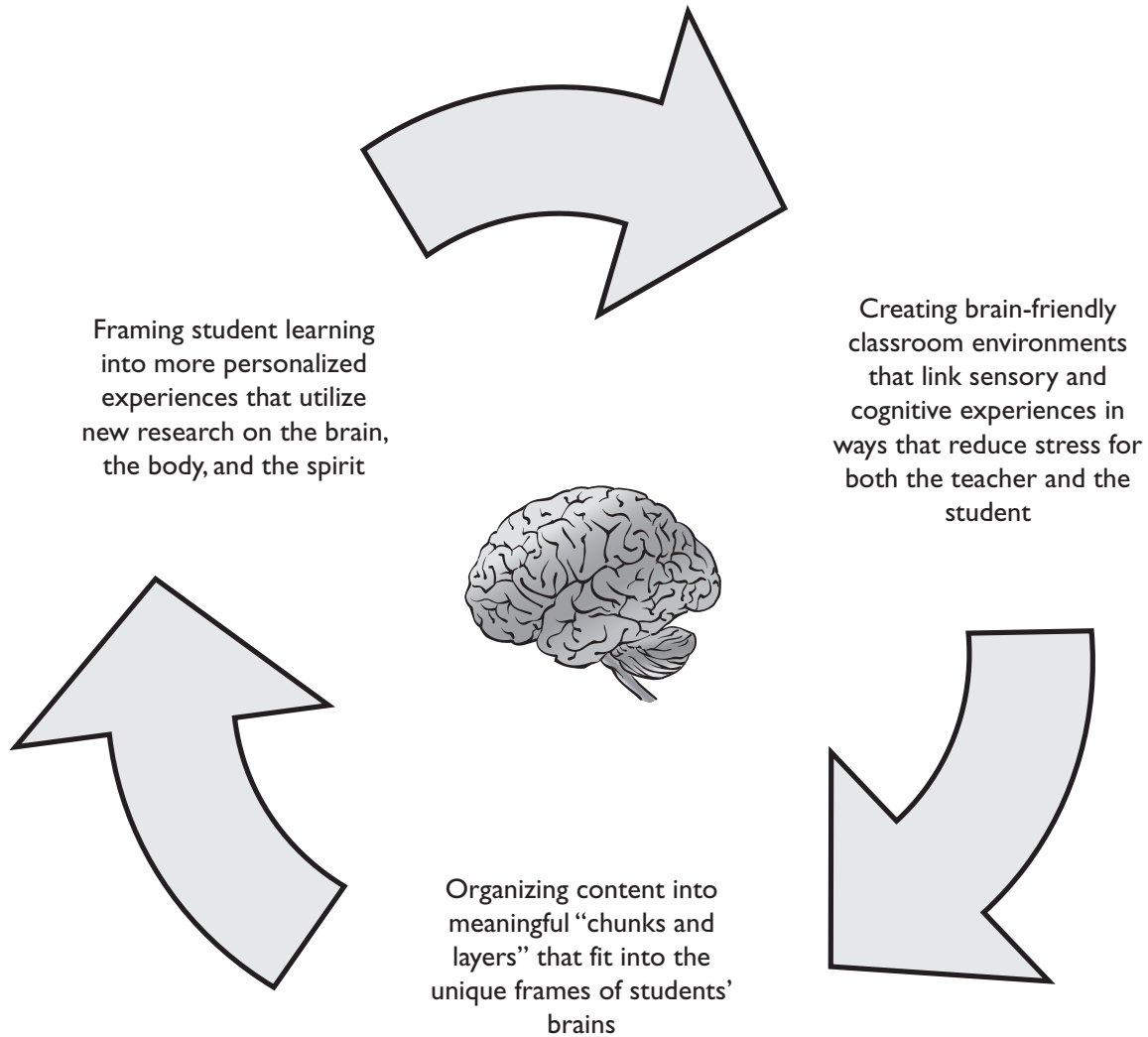
A valuable piece of art demands attention and critical perspective when framed lovingly and appropriately, and so it is with the brains of students. And by "brains," I suggest the plural on many levels. Not simply multiple brains as in number of students, but multiple *types* of brains, including gender, personality, effects of culture, health, and different intelligences and challenges, as defined by experts such as Gardner<sup>1</sup> and Jensen<sup>2</sup>. Framing the brain is an art form that requires as much care as the creation of the work of art itself, and the earliest teachers, such as Socrates, acknowledged this, saying:

*"I cannot teach anybody anything; I can only make them think."*

<sup>1</sup> Gardner, Howard. *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books, 1993.

<sup>2</sup> Jensen, Eric. "Fragile Brains." *Educational Leadership* 59, no. 3 (2001): 32-36.

*Brain Framing* is a book about **metacognition**<sup>1</sup> for teachers. It is a set of ideas for “thinking about thinking” in the classroom, a way to help us frame the brains of students in ways that are productive, powerful, and personal. This book will help teachers to engage brains in three fresh ways:



What is the energy behind brain framing? I suggest that it is the enormous capacity for change and possibility inherent in the sheer number of **neural connections**. Few have captured this critical potentiality as clearly as Nobel Laureate Gerald Edelman:

*If we take the pre-frontal cortex and smooth out the convolutions, it is about the size of a linen dinner napkin. But if we begin to count the synapses or neural connections at the rate of one per second, we would finish 32 million years after we began<sup>3</sup>.*

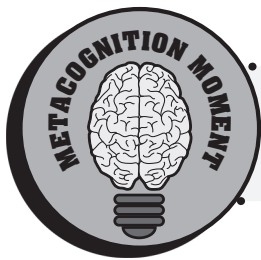
Think about it – 32 million years! A fabulous testimony to the complexity and creativity of the human brain. Yet, teachers often find themselves at a loss to reach difficult students, and retreat from engagement saying: “I can’t get through,” or “I’ve done all I can.” How can that be if there are so many millions of possible neural pathways to stimulate and from which to coax a response? Perhaps the answer lies in giving ourselves permission to be creative and flexible in the realm of instructional planning; start planning with *the brain in mind*, and let the standards and curriculum follow.

<sup>3</sup> Edelman, Gerald M. *Bright Air, Brilliant Fire: On the Matter of the Mind*. New York: Basic Books, 1993.

*Brain Framing: Instructional Planning with the Brain in Mind* offers a fresh look at designing instruction that is:

- gender-friendly
- integrated through a process called “chunking and layering”
- considerate of the continuum of ability levels
- aware of the role of the classroom environment
- supportive of technology infused within instruction
- tied to themes and essential questions
- linked to **learning styles**<sup>iii</sup> and **multiple intelligences**<sup>iv</sup>
- aware of the importance of embedding *values* into teaching
- designed to enhance diversity and creativity
- informed of the importance of language and key vocabulary to strengthen cognitive connections

Planning with the brain in mind is at once about changing *your mind* figuratively, as it graciously considers the role of planning in the teaching and learning process, as it is about changing *students’ minds* literally as you take advantage of neural plasticity to shape neural pathways.



Consider the scope of 32 million years of possible connections in a child’s brain. How can we give up on any student?

## What’s New in Brain-Based Planning?

One might ask: is there a need for another book on instructional planning? Hasn’t the story been told, and re-told? Lesson planning. **Long- and short-range planning**<sup>v</sup>. Curriculum mapping. Coherent curriculum. Spirals. Matrices. Webs. Models. Teachers have lots of choices. What can possibly be new and useful in this script? I think the fresh perspective is found in the emerging, engaging literature of cognitive science and its offspring, **differentiated instruction**<sup>vi</sup>.

Brain research compels teachers and coaches to change the ways that they frame questions about instructional planning. I like to call this *brain framing*, and it compels us to change the questions that we ask during the planning process.

### Instead of asking:

Which standards shall we teach?

How much content can we cover?

When is it time to test?

How many students are in this class?

Where will the scope and sequence take us?

How can we motivate students?

### Reframe the question:

How can we entice the brain to pay attention to the standards?

Where can we chunk and layer concepts?

How will I measure students’ knowledge, skills, and dispositions?

What capacity for growth and learning do my students possess?

What is valuable and significant in the journey?

How can we create brain-friendly environments that encourage compassion, response, and curiosity?