WHAT YOUR COLLEAGUES ARE SAYING . . .

At last! A book about teaching foundational writing skills to school-aged students. This practical, insightful, and evidence-based book is just what every teacher ordered. Make it part of your classroom.

Steve Graham, Regent and Warner Professor, Arizona State University

Foundational Skills for Writing is packed with everything you need to pinpoint and strengthen the underlying skills every writer relies on from oral language to handwriting and spelling. Grounded in research yet brimming with practical strategies and a wealth of classroom resources, Melanie and Maggie have artfully synthesized the work of leading experts to create a go-to guide that will help your students write with confidence, independence, and creativity.

Maria Walther, literacy consultant and author of *The Ramped-Up Read Aloud*, *Shake Up Shared Reading*, and *More Ramped-Up Read Alouds*

Meehan and Roberts go deep and specific, uncovering why some learners can tell amazing stories but freeze up when a pencil and paper appear. They connect the dots between everything from working memory overload to underdeveloped core strength. I especially love the book's treasure trove of "brain basics" that explain the neurological "why" behind writing struggles, plus immediately usable strategies like sentence-combining games and spelling-pattern hunts that make foundational skills feel like play. This research-backed (and research-packed) guide opens a whole new and needed focus on transcription skills as an essential focus in writing instruction, not just composition. They teach us how to spot whether a student needs more finger strengthening activities or executive function support, discussing a whole set of skills rarely present in any curriculum or program. Kudos!

Patty McGee, coauthor of *Not Your Granny's Grammar: An Innovative Approach to Meaningful and Engaging Grammar Instruction*

Finally! A comprehensive resource that helps unpack the complexity of writing. Each chapter is a goldmine of research, theory, and practice. As a teacher educator, I'll be sure to hand this book to my preservice teachers and graduate students—all of whom are clamoring for practical and research-based ways to support student writing.

Molly Ness, author and teacher educator, Dirigo Literacy

After reading *Foundational Skills for Writing*, you'll look at writing with a wider lens: not just as an academic task but as a complex cognitive process. This book reminds us of the rich cognitive activity required to write even a short piece of coherent writing. The traditional writing process has tended to deemphasize skill work, particularly in the early part of the process. Melanie Meehan and Maggie Beattie Roberts make a powerful argument that attending to foundational skills is crucial if our students are going to grow into the writers we want them to be. *Foundational Skills for Writing* is a wise guide that will help teachers strike a balance between practicing essential skills and writing from the heart.

Ralph Fletcher, author of *Tapping the Writer Within: Practical Ways to Help All Students Claim Their Wri-dentity*

Keep this remarkable book by Meehan and Roberts close by so you can read, revisit, and reread sections of each chapter to understand the seven foundational skills that shape young writers' development and growth and your teaching of the writing process. Besides research, each chapter has practical suggestions you can use immediately that support students' writing growth and their ability to communicate their stories, thoughts, and understandings.

Laura Robb, author of *Read Talk Write: 35 Lessons That Teach Students to Analyze Fiction and Nonfiction*

This book brilliantly connects brain research to the art of teaching writing. As a teacher, I found its insights both practical and inspiring. It deepens understanding of how students learn to write and equips educators with tools to guide them. A must-read for anyone passionate about literacy and learning.

Lydia Bagley, Literacy Support Specialist/RtI Facilitator,
Cobb County School District

Foundational Skills for Writing offers a reminder that we each bring our whole self to the mental work of composition and the physical actions of writing. Writing instruction must therefore be fundamentally concerned with creating inclusive conditions for bodyminds to access and engage the writing processes with motivation and flexibility.

Rachael Gabriel, Professor of Literacy Education,
Neag School of Education, University of Connecticut

This is not just a resource for younger grades. The research-based tools, progressions, strategies, and activities in this book are classroom-ready for elementary and beyond. Each chapter focuses on a foundational skill necessary for the writing process, which allows us to meet our writers where they are, and support them with the foundations that they need to be successful, automatic writers across all subjects.

Julia Schaperjohn, Curriculum Facilitator and Teacher,
Rock Rest Elementary School

This book is dedicated to the community of Simsbury writers and colleagues. Teachers and students—you have supported and inspired my work throughout my career. Thank you.

—Melanie Meehan

To my family—it is an honor and a joy to write our story together. This book is for you.

—Maggie Beattie Roberts

Foundational Skills for Writing

A Brain-Based Guide to Strengthen Executive Functions, Language, and Other Cornerstones for Writers

Melanie Meehan

Maggie Beattie Roberts

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From Both of Us:

Larkin Meehan, Melanie's oldest daughter, gets a special shout-out in this section! Thank you for your patience as we described our hopes for visuals. You created graphics and art that express our beliefs and ideas—your ability to capture ideas through art shines throughout our book.

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Colleagues from around the country met with us, leading to the Conversations With a Colleague text feature in each chapter. We have deep gratitude and respect for these experts who were generous with their time and their knowledge. Dr. Young-Suk Kim, Dr. Nelson Cowan, Dr. Rebecca Treiman, Dr. Julie Booth, Patty McGee, Christy Cestone, Katie Bristol, Jaime Spencer—thank you for deepening our understanding and sharing your expertise for our book.

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And Maggie . . . Writing partnerships can be challenging, but you've been an incredible partner. You've cheered, reflected, nudged, questioned, and then gone in and made things better. Thank you for being my writing partner and friend.

Finally, I have an incredible family. Mom, thanks for always believing in me, even when my work takes too much time. Garth, thanks for knowing when to leave me alone with my computer and when to show up with coffee or wine—and for sharing this fun life we have! Larkin, Julia, Clare, and Cecily—you provide constant inspiration to celebrate the joys in life. You are my foundation.

From Maggie:

Landmark College, designed exclusively for students who learn differently, is one of the most affirming places I've studied. I'd like to give special thanks to Melissa Deem, instructor, advisor, and mentor—thank you for encouraging me to begin this project and enthusiastically seeing a need for this book.

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About the Authors

Melanie Meehan

Having begun her teaching career as a special education teacher, Melanie was the Elementary Writing and Social Studies Coordinator in Simsbury, Connecticut, for almost fourteen years. She has since opened The Writing Clinic, focused on building the writing lives of students. Her passion for writing has led to several books and publications.

Melanie's first book, *Every Child Can Write,* was published by Corwin in October 2019. With a foundational belief that all students can learn to write, this book provides strategies and resources that teachers can use, duplicate, and gather inspiration from. *The Responsive Writing Teacher,* cowritten with Kelsey Sorum, was published in February 2021 and emphasizes the importance of knowing and understanding students across many platforms in order to teach them powerfully. Melanie's most recent book, *Answers to Your Biggest Questions About Teaching Elementary Writing*, is part of Corwin's Five to Thrive Series. Melanie is also a coauthor of *Two Writing Teachers*, a blog dedicated to the teaching of writing. Additionally, she cohosts the companion podcast.

Melanie holds a BA from Cornell University, an MA in Special Education from the University of Hartford, and a second MA in Educational Leadership from Central Connecticut State University. Melanie also has her Master of Fine Arts in Creative Writing through the Solstice MFA Program of Pine Manor College.

Maggie Beattie Roberts

Maggie Beattie Roberts began her teaching career in the heart of Chicago before moving to New York City and completing graduate studies as a Literacy Specialist at Teachers College, Columbia University. Today, she is a national literacy consultant, author, and highly sought-after professional learning facilitator. Known for her ability to build strong relationships with teachers and school leaders, Maggie thrives working side-by-side with educators.

Maggie is passionate about supporting teachers in creating inclusive classrooms that meet the needs of all students. She has post-baccalaureate certification in Learning Differences and Neurodiversity with specialization in Executive Function from Landmark College. Her work has been featured in peer-reviewed journals, such as the National Council of Teachers of English's journal, *Voices From the Middle*, and the Texas Council of Teachers of English Language Arts's journal, *English in Texas*. As coauthor of *DIY Literacy: Teaching Tools for Differentiation, Rigor, and Independence* (with Kate Roberts), Maggie continues to empower educators with tools that enhance student learning and independence. She looks forward to sharing *Unboxing the Curriculum* (in press, with Kate Roberts), which helps teachers, administrators, and district leaders navigate prepackaged curricula and tailor them to their students' needs.

Introduction

Humans have written for thousands of years. We reached for sharp stones and sticks, carving symbols and drawings into cave walls. We reached for brushes made from reeds and quill pens from bird feathers. We reached for the fountain pen, the typewriter, the ballpoint pen.

We are still reaching to write. From keyboards to voice-to-text technology, we write to send messages, share stories, and preserve memories. We write to teach and learn, to connect and make meaning. We write to engage in debate, get the word out, and mobilize one another.

Words hold infinite power.

But getting the words down is a complex and complicated process.

See, our brains aren't "wired" to write. Whereas speaking is an evolutionary trait, writing is a cultural invention. While researchers estimate humans have existed for upward of three hundred thousand years, writing has only been around for about five thousand years (Handwerk, 2021; Wright, 2015). Relatively speaking, writing is a new skill for human brains. There hasn't been enough time for evolution to build a writing center in the brain. In a way, our brains are retrofitted, recycling and reorganizing different systems to support writing. So while we aren't born to write, our brains learn to write by linking together multiple systems of the brain.

We, Maggie and Melanie, the authors of this book, instantly became friends and colleagues, meeting over ten years ago. We quickly uncovered our shared passions, and found ourselves bonding over one in particular—written expression.

Written expression is the complex, cognitive process to communicate ideas and thoughts through written language.

We began a conversation about this book after Melanie attended a presentation Maggie gave at a national conference. One of the key messages in Maggie's presentation centered on the complex neurological involvement of written expression. At the time, Melanie was wondering about the diminishing representation and importance of writing in schools and students' lives. While she participated in many conversations about reading and the research around its foundational skills, those conversations were not happening about written expression. The two of us envisioned this book during that conversation, drafting an outline right then and there on the back of a conference napkin.

That conference napkin has evolved. We began writing and immediately realized we had a lot to learn. Research consumed us. One of our main goals for this project became clear: to integrate the brilliant work of cognitive scientists, neurologists, and brain researchers into all we know about how children learn to write from our vantage point as practitioners in the world of teaching.

Although the book's outline has shaped and shifted over time, our guiding beliefs and commitment to high-impact writing instruction remained constant:

1. The writing process is recursive and personalized.
2. Research-informed, evidence-based instruction leads to strong written expression.
3. Writers rely on internalized and automatized foundational skills to fuel their written expression and writing process.
4. Written expression is the capstone for all language processing, as it involves, coordinates, and integrates the skill sets for listening, speaking, and reading.
5. Strong writing depends on the coordinated use of key executive functions.

Our research kept guiding us back, reinforcing our beliefs and commitments. But we noticed a gap between this research and the resources available to teachers. We wanted to write into this gap, creating a support and a bridge for teachers to use when teaching young people how to write.

SKILLS FOUNDATIONAL TO EVERY WRITER

This book focuses on nurturing the development and internalization of specific sets of skills, ones that are foundational to the growth and development of young writers. These skills aren't the end destination for a writer, but rather an entry ticket into and a support system for a recursive writing process. Strengthening this set of skills, no matter the age, helps students expand themselves into a writing process that transports them into a world of opportunity to make meaning, create impact, and be remembered.

Transcription skills are one set of skills foundational to every writer. Writing involves getting words down onto paper, and transcription—the skills of handwriting, keyboarding, and spelling—enables that process (Harris et al., 2023). Handwriting and keyboarding development rely on both large and small motor skill development, ranging from postural control and shoulder stability to finger and hand control. Spelling is an essential transcription skill as it ensures words are transcribed correctly. Without strong spelling skills, the accuracy of the transcription is impacted.

Oral language skills are another set of skills important to every writer. Strong oral language skills are essential for writing, as ideas and thoughts must first be formulated in oral language before being transcribed into written text (Harris et al., 2023). One important oral language skill that affects writing quality is sentence structure (Harris et al., 2023). Strong sentence structure supports writing development, as it helps students structure their thoughts, use appropriate syntax, and build complex ideas before transcribing them into written form.

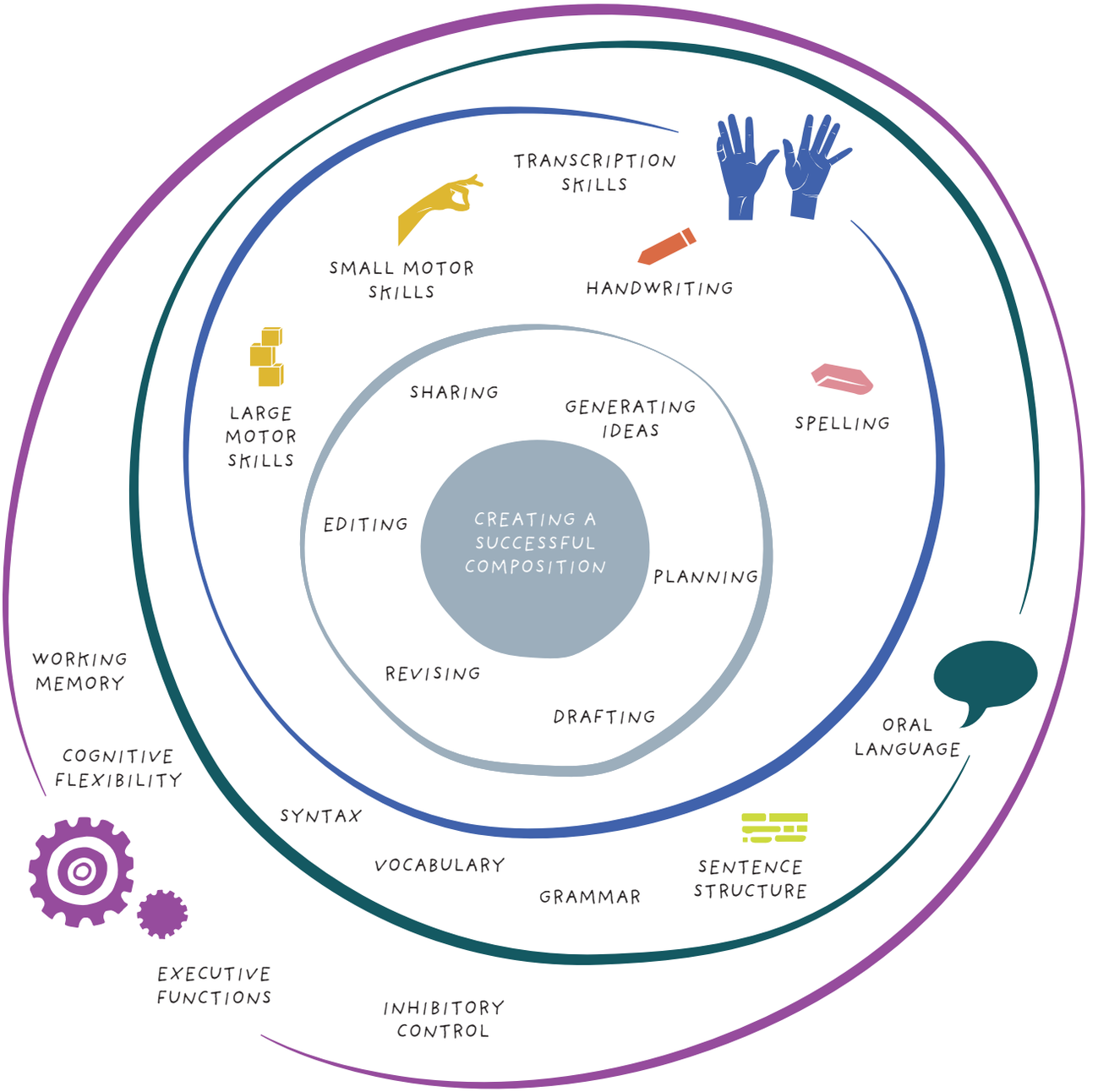
Executive function skills are a third set of skills foundational to every writer. We address three key executive function skills that have been studied recurrently by researchers. The first, working memory, encompasses the skill to hold onto and manipulate incoming information. Inhibitory control, the second, is the skill to hold off on one response in favor of another response; and the third skill, cognitive flexibility, allows writers to switch flexibly between tasks or processes (Diamond, 2013; Miyake et al., 2000).

Writing leans on executive functions because it asks students to coordinate multiple processes at the same time (Drijbooms et al., 2017; Kim & Graham, 2022; Kim et al., 2021). For example, "To successfully write their ABCs, a child needs to retain the sequence of letters written so far while producing new ones (working memory), to keep in mind the goal of the task while inhibiting distractions from the environment (inhibition), and for every new letter, redirect their attention to a new set of subprocesses (attention shifting)" (Valcan et al., 2020, p. 3). As students move into sentences and essays, the same skills scale up: working memory holds the prompt, claim, and evidence; inhibitory control helps them stay on task and manage frustration; and cognitive flexibility lets them move between planning, drafting, and revising.

These three sets of skills—transcription, oral language, and executive functions—are interrelated and undergird written text composition, as they all engage and interact during the writing process. They are each foundational in their own way, helping writers competently experience the writing process and build pieces of writing from the ground up.

This book is a resource that teachers can use to teach and strengthen these skills, equipping young writers with what they need to enter the writing process with independence, flexibility, and confidence. As we developed this book, we began imagining ways to visually capture the foundational skills of writing. Luckily, Melanie's daughter, Larkin, is a talented professional artist and has the ability to capture ideas and translate them visually (see Figure 0.1).

FIGURE 0.1 The Foundational Skills for Writing visual places the goal of creating a successful composition at the center. The next ring represents the writing process. The outer rings show the foundational skills categorized by executive function, oral language, and transcription skills, which are the focus of this book.



Illustrations by Larkin Meehan

You'll see this visual throughout the book; as you consider it, notice how it centers the goal of creating a successful composition, which is always surrounded by the writing process. This reminds us to strengthen the surrounding foundational skills not in isolation, but in service of the writing process and the ultimate goal of text composition.

Teaching Foundational Skills and the Writing Process

Debates exist in the field about whether or not children should be developed in their transcription skills before they enter the writing process. Karen Harris and her colleagues acknowledge this debate and write,

> Teaching transcription skills and sentence construction while simultaneously teaching writing strategies and the writing process has been discouraged by those who claim this approach may cause working memory constraints, cognitive overload, problems due to lack of discourse knowledge, problems due to motor skills and handwriting fluency, and other difficulties. (Harris et al., 2023)

Those in agreement suggest instruction in the writing process should hold off until students have developed a more solid foundation in transcription skills, oral language, sentence construction, and grammar.

Others view it differently, advocating for a process approach that combines writing skill and strategy development with the self-regulatory skills needed to engage in the writing process (Harris et al., 2023; Harris & Graham, 2016). This view resonates with what we've seen with our own eyes over the years. We have watched young children engage in the writing process while their sentence-construction skills, for example, were still in development.

A panel of researchers and practitioners, led by Steve Graham, a leading scholar in writing instruction, reviewed the research on this debate in the *What Works Clearinghouse Practice Guide* on elementary writing (Graham et al., 2012), which was revised in 2018. This educator's guide outlines clear, evidence-based recommendations for teaching writing in elementary classrooms. The panel recommended writing instruction focus on *both* skills and writing process beginning in first grade.

We kept returning to the debate because we've seen the effect that underdeveloped foundational skills have on writers. We've watched students stop in the middle of a sentence to head to the word wall in the classroom, copy a word on a sticky note with painstaking care, and return to their writing to transcribe the word into their piece. We've watched children pause in the middle of words to contemplate which way their "b" should go, holding their fingers up, making a "b" with their left hand and a "d" with their right. We've watched children survey available adults or classmates for the correct spellings of words.

We marvel at the ingenuity of these writers, as well as their independence, for tapping into the available tools and resources of their learning environments. But time and time again, we notice some students getting stuck and needing to interrupt writing. We observe children running out of cognitive steam when it comes to composing a piece of writing from start to finish. We notice students allocating their cognitive resources to foundational writing skills, like spelling, and then not having enough in the tank to continue composing.

This tension guided us toward a big goal of this book—to help children reserve steam to enter and stay engaged in the flow of writing, in a writing process. For this to happen, foundational writing skills should ultimately feel automatic for children, facilitating a kind of mental cruise control as they do the hard work of composing. We can and should strengthen children's transcription skills, grow their oral language skills, and nurture their executive function skills, all of which support their ability to enter the writing process and create successful compositions.

AN EVOLUTION OF WRITING MODELS, FRAMEWORKS, AND PROCESS

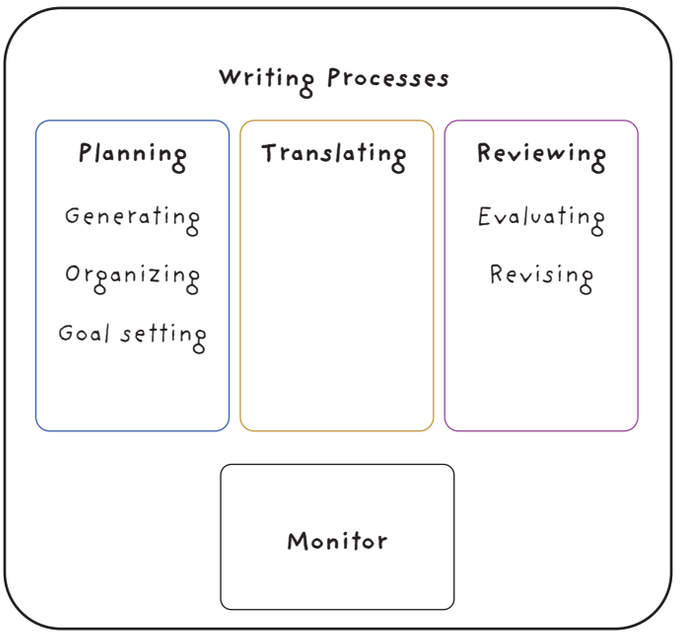
Before moving forward, it's important to look back and study the evolution of the writing process and different writing models. There is so much wisdom in the cognitive and developmental frameworks that explain how writing works in the brain and body. These models illustrate the following:

- Writing depends on coordination of multiple systems.
- Instruction should nurture transcription fluency early, while also supporting language, idea-development, and executive function.
- Assessment and intervention can identify which parts of the writing system need support.
- Writing is both a cognitive and developmental process.

Prior to the 1980s, the dominant understanding of the writing process was a linear, three-stage model consisting of prewriting, writing, and revision. In 1981, Linda Flower and John Hayes proposed a shift from the traditional linear sequence models to a process-based model. **The Flower & Hayes Cognitive Process Model of Writing** (1981) emphasizes the dynamic and recursive nature of the writing process, as well as how a writer's long-term memory and the environment of the task plays into the act of writing.

Their model of the writing process identifies three key processes (see Figure 0.2). One process is planning which involves idea generation, goal setting, and organizing thoughts. Another is translating or converting ideas into written text. A third process is reviewing which encompasses evaluation and revision. Planning, translating, and reviewing are not seen as separate, distinct stages, but rather ongoing processes that writers use fluidly and repeatedly as they compose a piece of writing.

FIGURE 0.2 Part of the Flower & Hayes Cognitive Process Model of Writing, 1981



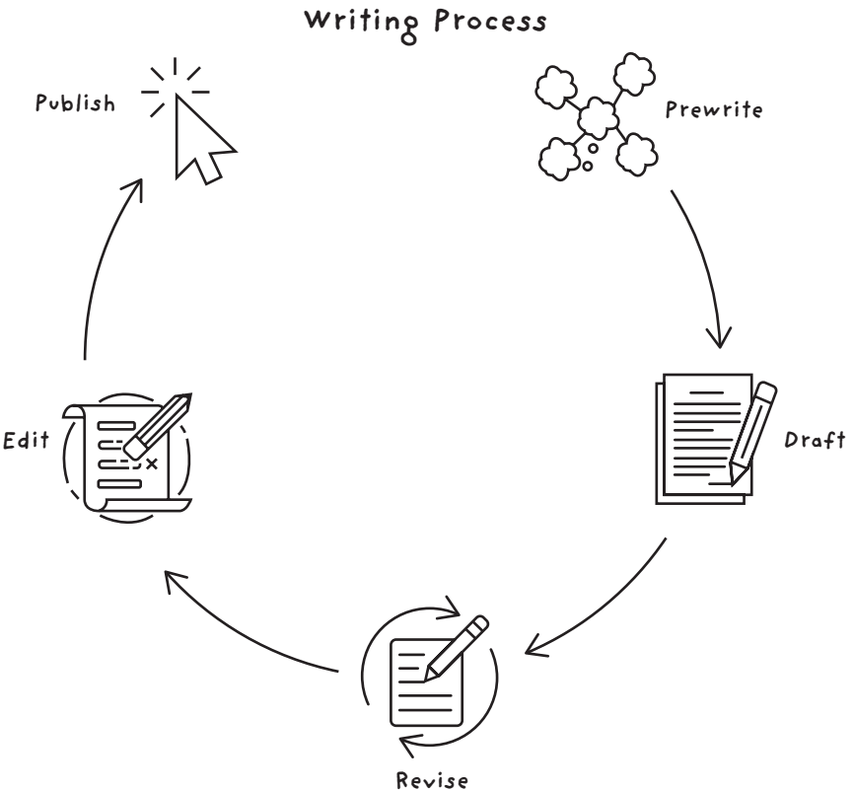
Information from Flower & Hayes, 1981

Flower and Hayes describe writing as "highly goal-oriented" and "both a strategic action and a thinking problem" (Flower & Hayes, 1977, p. 449), laying the foundation for understanding that writing is both a goal-directed process and a problem-solving activity. Agency, self-direction, and metacognition are crucial to their model, as they note "a great part of the skill of writing is the ability to monitor and direct one's own composing process" (Flower & Hayes, 1980, p. 39). Their model captures how writers monitor and adjust their strategies as they write, staying aware of their goals, their progress, and whether they are reaching their intended audience and purpose.

Around the same time, Donald Graves, a pioneer in writing instruction, founded the Writing Process Laboratory at the University of New Hampshire, where he conducted studies that informed his seminal book *Writing: Teachers and Children at Work* (1983). Graves conducted groundbreaking observational research in classrooms, highlighting how young children develop as writers when given time, choice, and community. Widely considered the "father" of the writing process, his work ignited the writing workshop approach to teaching writing to children.

Similar to Flower and Hayes, his approach represented writing as a dynamic and recursive process consisting of five stages: prewriting, drafting, revising, editing, and publishing (see Figure 0.3).

FIGURE 0.3 Donald Graves Writing Process, 1983



Information from Graves, 1983

Graves's work reflects the innate nature of children's desire to write:

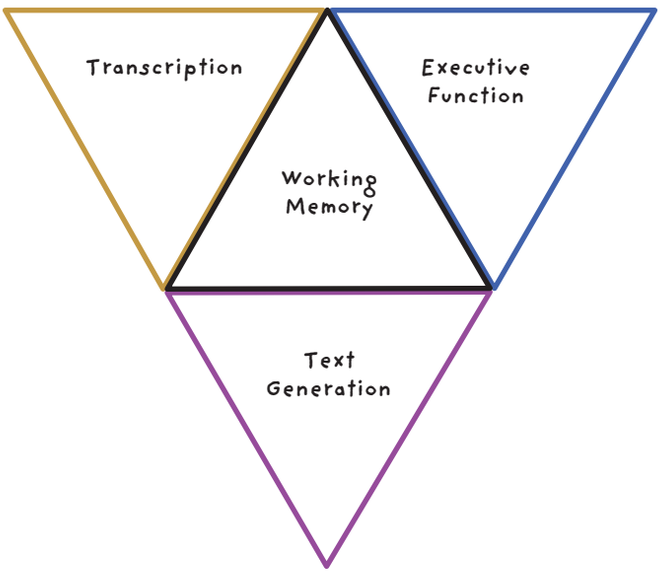
> Children want to write. They want to write the first day they attend school. This is no accident. Before they went to school they marked up walls, pavements, newspapers with crayons, chalk, pens or pencils . . . anything that makes a mark. The child's marks say, "I am." (Graves, 1983, p. 3)

Graves's work harnesses children's instinct to write and lays out a path for teachers of writing to follow. His commitment to fostering creativity, providing time for revision, and integrating mechanics into meaningful contexts continues to be a beacon for many writing teachers of students both young and old.

The Not So Simple View of Writing (Berninger & Winn, 2006) theoretical framework builds on the earlier writing models and methods of the 1980s and focuses on the integration of transcription skills and text generation with brain development. This model emphasizes the interdependence of lower- and higher-order writing skills and how they influence each other.

Berninger and Winn incorporate executive functions (e.g., attention, goal setting, planning, and self-regulation) and working memory in their model (Figure 0.4). While earlier models described planning and monitoring, Berninger and Winn make executive function an explicit, central component and link it directly to transcription and text generation. They emphasize that young writers especially depend on support for developing executive function and that difficulties in these areas can significantly impact writing fluency and quality. Their model highlights the importance of teaching strategies for goal setting, self-monitoring, and planning.

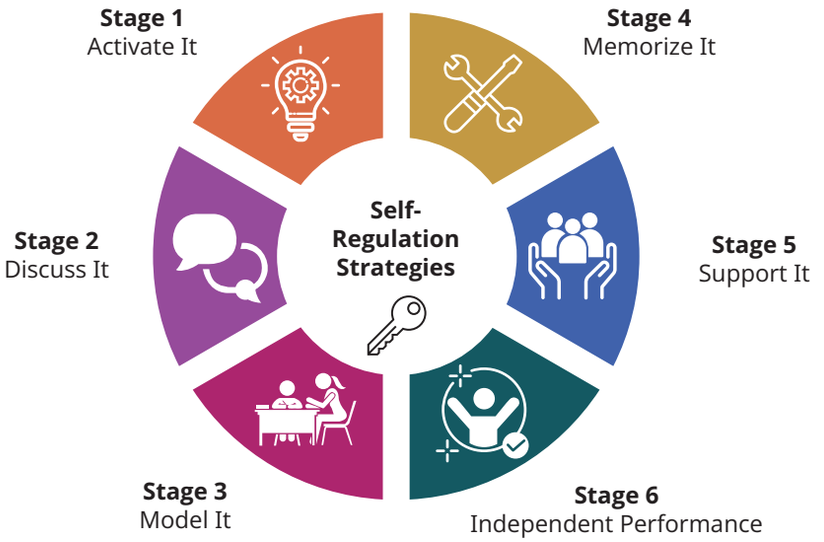
FIGURE 0.4 The Not So Simple View of Writing, Berninger and Winn, 2006



Information from Berninger & Winn, 2006

Self-Regulated Strategy Development (SRSD), co-developed by Karen R. Harris and Steve Graham, grew from Harris's foundational work in the 1980s and their joint development beginning in the 1990s (Harris & Graham, 1996). The SRSD model of instruction uniquely blends strategy instruction with self-regulation development (Harris, 2024; see Figure 0.5). Rather than just describing how writing happens, SRSD is an instructional framework, containing six recursive stages, designed to teach students how to write more effectively and independently. Standing on a firm research base, SRSD uses a model of gradual release (Pearson & Gallagher, 1983) and incorporates a recursive writing process.

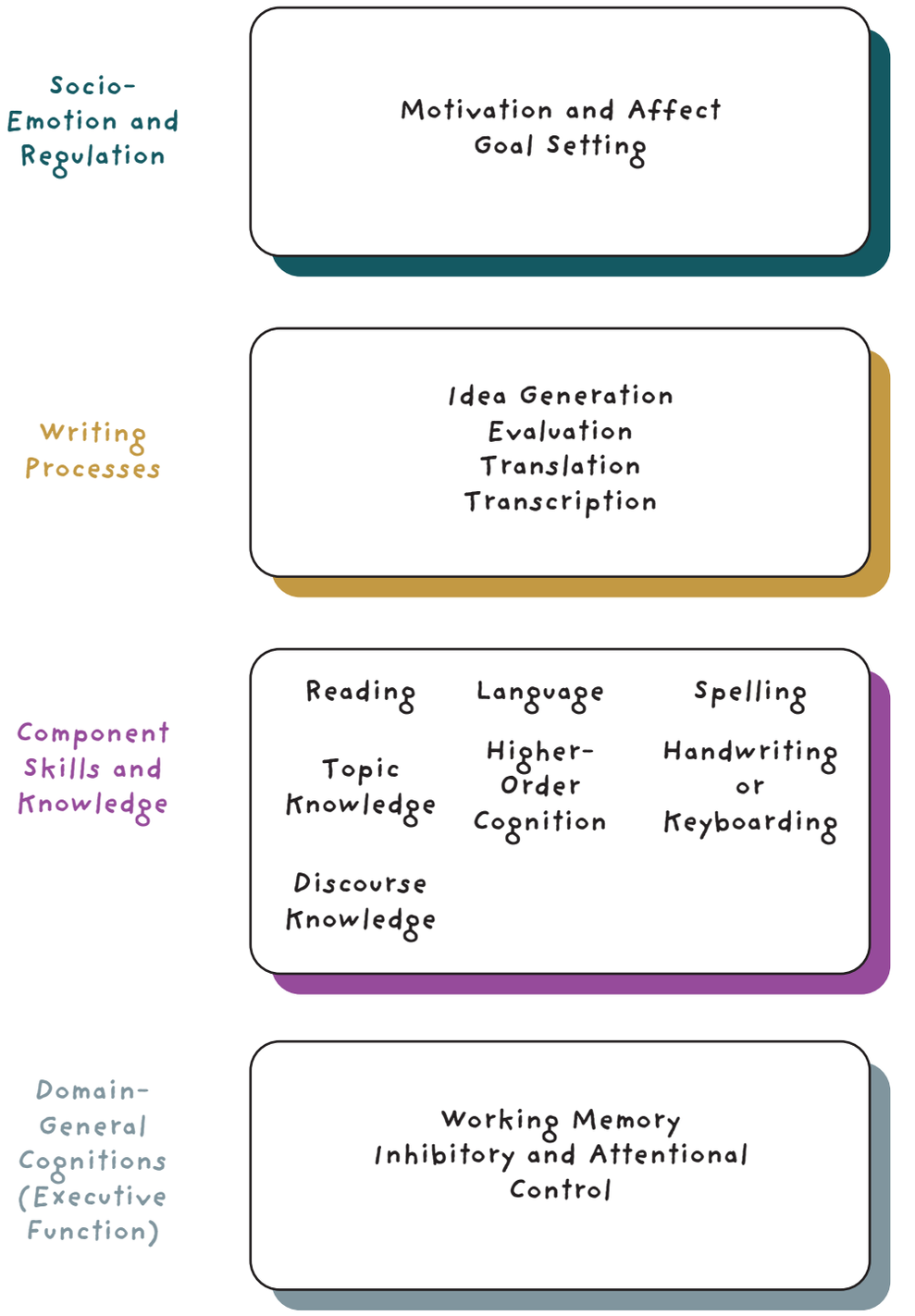
FIGURE 0.5 The Self-Regulated Strategy Development (SRSD) model for writing instruction, 1996



Adapted from Harris & Graham, 1996

Well-known scholar and researcher in the field of literacy and language development, Young-Suk Kim's **Direct and Indirect Effects model of Writing** (DIEW) is a component skills model of writing that explains how multiple components jointly support the complex, recursive writing process. The model was first articulated by Kim and Park (2019) and later expanded by Kim and Graham (2022, see Figure 0.6). DIEW combines not only transcriptive skills, idea generation skills, working memory, and executive function but also elements such as background knowledge, reading comprehension, and socio-emotional involvement (Kim & Graham, 2022). Kim's work on how factors like working memory, inhibitory control, and motivation influence literacy development and written expression captures the complexity of writing with nuance and specificity.

FIGURE 0.6 The Expanded Direct and Indirect Effects Model of Writing Where Writing Processes Are Mapped With Component Skills and Knowledge, Kim and Graham, 2022



Information from Kim & Graham, 2022

In writing this book, these writing models, frameworks, and processes were our roadmaps—Flower and Hayes's writing as recursive, Graves's writing process, Berninger's executive function, Harris's self-regulation and goal setting, and Kim's socio-emotion and background knowledge. Combined, they became the ultimate GPS, guiding us through the process of writing this book.

WELCOMING WORDS

One afternoon, close to our writing deadline, we met on the sidelines of one of Maggie's kids' soccer practices to go over some final revisions.

In the background of our conversation, young kids practiced. They practiced drills and exercises designed to strengthen their foundational soccer skills: passing, shooting, stopping the ball without their hands. They also scrimmaged with another team, leaning on the skills they had just practiced.

Now, the scrimmage was far from perfect practice. Some kids stopped mid-scrimmage to pick dandelions scattered throughout the field. There were definitely a few kids who ran toward the wrong goal to score.

But the coaches knew the importance of practice—that scrimmages are a place to allow young players to try out, practice, and eventually, automatize certain skills.

Young players spend lots of time in their development, only looking down at the ball when they play. But striking the right balance between practicing skills and practicing game play creates an alchemy kids need to trust in themselves and their dribbling skills, so they can look up at the game being played on the field.

Just as a child's soccer skills improve with skill practice and scrimmages, a child's writing skills improve with both skill practice and engaging in the writing process. They need both.

We believe that children want to share their words, be seen, and be understood. We believe explicit writing instruction, in both foundational writing skills and more advanced composition skills, helps them manifest these hopes.

We believe that children want to share their words, be seen, and be understood. We believe explicit writing instruction, in both foundational writing skills and more advanced composition skills, helps them manifest these hopes

The chapters in this book each tackle a foundational skill for writing. As you read the chapters, whether you read sequentially or dip in and out, we encourage you to keep a student in mind; it could be the child we introduce within the chapter. It could be a student in your classroom. Maybe it's a child you know on a personal level.

As you read the case studies, research, and ideas for teaching and practice, we hope you find strategies and structures that strengthen skills, boost confidence, and expand possibilities for the student in your mind.

We hope this book becomes a resource for you to supplement your curriculum and carve out spaces to nurture the writing development of your students.

We hope this book creates a celebration for the writers in your world and the incredible power it is to be one.

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CHAPTER 1

An Invitation to Explore the Foundational Skills for Writing: Navigating the Book

As you begin this chapter, we invite you to write a capital L. Start the line at the top, move toward the bottom, then over to the right. No need to even pick up your pen between lines.

Think about all the things your brain did in order to complete that task. You had to set the intention. You had to know what an L looks like and decide on print or cursive. You gripped a pen or pencil in your fingers, applied consistent pressure, and had the coordination to stop and start in specific places. All for one letter, and a relatively simple letter at that.

Wait! There's more. While all of these processes were in motion, there's also the motor component involved in writing. Writing is physical; large and small motor skills are needed for everything from sitting up straight to holding a pencil or typing on a keyboard. There's the coordination of both visual and sensory information, from feeling the weight of the keys when typing to watching the text appear on the screen.

Now, just think about what a brain has to do in order to write a one-scene, one-page story. The writer has to remember or think of an event and then organize it into a beginning-middle-end sequence, using skills that require memory and planning. Then, the writer has to sit down and focus on the task at hand, thus requiring skillful task initiation and sustained attention. Forming sentences requires extensive language processing, while writing words challenge writers to use their visual, orthographic, and phonetic skills, coordinating the input and the output from all of them simultaneously.

Writing is quite a cognitive feat.

Science confirms this cognitive complexity of writing. Magnetic Resonance Imaging technology (fMRI) provides a picture of how the brain activates different regions depending on the type of writing tasks, from handwriting to sentence construction (Yuan & Brown, 2014). Many regions of the brain must work together to produce coherent writing and ensure a smooth experience with the writing process.

This chapter is an invitation. It shares how we envision using this book, the way the chapters flow together, and the recurring sections that appear in each chapter. We also give quick descriptions of some guiding theories, terms, and concepts that can be helpful to know as you read this book.

Margaret Atwood has said, "A word after a word after a word is power" (Lang & Raymont, 2019). It is our hope for every child to feel that power. And it is our hope this book will help teachers guide the way for students to feel that power.

Onward.

HOW TO USE THIS BOOK

We envision all writers engaged in the writing process, composing pieces that share their stories, knowledge, opinions, and interpretations with others. Yet we also know through research and firsthand experiences that some students struggle to enter that writing process independently, confidently, and fluently; they are dedicating much more of their limited cognitive capacity to foundational writing skills.

What is cognitive capacity?

▸ Cognitive capacity is how much mental work (like thinking, focusing, solving problems) your brain can handle at one time.

Everyone has a limit to how much mental work they can do at once, kind of like how a bag can only hold so much. It can vary from person to person, as limits also come from brain development and genetics. To add to the complexity, cognitive capacity is fluid and can change depending on how you feel. You might have more cognitive capacity when you are happy, well rested, and fed, but less if you're sleep deprived or hungry.

Source: Kleinsorge, 2021

Throughout our careers in writing classrooms, we have seen young children thrive in the work of the writing process. Fearlessly, many children share their stories through pictures and labels, phonetic representations of words, and approximations of sentences. But some students face challenges with language, motor skills, handwriting, spelling, or sentence structure that interfere with both the quality and quantity of their writing compositions—no matter what they're writing or where they are in the writing process.

"How do I know where to even begin?" one teacher recently asked Melanie.

The complexity of writing makes the answer to that question equally complex. Recognizing and understanding the progression and interplay of skills that lead

to successful writing provide a strong place to begin, driving impactful instruction and supporting deeper learning. In practice, teachers can observe and assess students as they write, gathering insights into their skills, strategies, and behaviors. Such assessment includes noting not only how students approach tasks, express ideas, and engage with the writing process but also the strength of their foundational skills.

So where to even begin? You might consider the following questions:

- How does the student manage themselves when approaching any task that involves writing?
- How is the student's oral language?
- Would the student benefit from building core strength and strengthening fine motor skills?
- Does the student know and write letters with automaticity?
- What are the strengths and opportunities within spelling?
- Does the student understand the basic components of a sentence?
- Are the student's sentences varied with strong syntax?

What is automaticity?

▶ Automaticity is a process that can be carried out rapidly and without much effort, attention, or awareness—an automatic process. Thinking back to cognitive capacity, having automaticity in something frees up cognitive energy. Therefore, developing automaticity in skills such as handwriting, keyboarding, or spelling frees up cognitive energy for other writing skills and processes, like idea generation or revising.

"The mastery of any skill—whether a routine daily task or a highly refined talent—depends on the ability to perform it unconsciously with speed and accuracy while consciously carrying on other brain functions."
—Bloom, 1986, p. 70

Your answers to these questions can guide you as you read this book. Perhaps you observe a child who appears to struggle with focus when they write. Chapter 2 on executive functions may hold some insight for you. Notice something up with a child's posture or positioning as they write? Chapter 4 on large motor skills can help. Maybe you see a student ready to experiment with constructing different kinds of sentences. Chapter 8 on sentence structure has lots of ideas.

So while some books are meant to be read cover to cover, we don't necessarily envision this book as a sequential read. We imagine this book as a helpful sidekick—a reference to consult after observing the foundational skills that are in motion in your classroom. We imagine this book as a companion—a colleague by your side supporting you as you lean in and teach this cognitive feat.

Some of you teach younger writers; it's likely those students will need intentional instruction and practice with all the skills featured in this book. This instruction can happen in your writing blocks within whole class formats, as well as small group and individualized lessons. Others of you teach older writers. You might

realize that some core strength leads to increased writing volume or that prioritizing spelling instruction helps students with writing fluency. A few students may need more work on fine motor skills, while many students might benefit from explicit instruction about how executive functioning works and supports writing.

Depending on your observations and responses to these questions, you can dig into the chapters based on where you see opportunities for growth, reminding yourself and students of the ultimate goal: to compose authentic, compelling, and skillful written compositions.

What are foundational skills?

▶ In this book, we tackle three skill groups: transcription skills, oral language skills, and executive function skills.

You'll notice, at times, we use foundational skills as a shorthand that refers to all three skill groups. Each set of skills are foundational to writers and their writing experiences. Teaching and coaching into transcription, oral language, and executive function provides a solid and necessary foundation for writers as they use the writing process to build compositions.

AN EXPLANATION OF CHAPTERS AND HOW THEY FLOW TOGETHER

Our exploration of the foundational skills for writing begins with a chapter on executive functions. Executive functions encompass three key components including working memory, cognitive flexibility, and inhibitory control. We consolidate the research in practical ways, addressing the general principles of executive function and the specific strategies that support writers' executive functions required for successful writing. Ultimately, all written expression relies on intention, focus, regulation, and goal setting. **Chapter 2** is an important overlay to use when reading every other chapter in this book.

Chapter 3 takes on oral language. Speaking and written language both fall into the realm of expressive language, as opposed to reading and listening which are receptive language. However, researchers agree that humans were speaking to each other for thousands of years before the emergence of any written systems (Schmandt-Besserat, 2014). Likewise, children develop oral language before they develop written language, and metastudies have shown the strong correlations between oral language and writing skills (Kent & Wanzek, 2016).

Written expression doesn't happen without motor skills, regardless of whether it's through handwritten or digital formats. **Chapter 4** centers on large motor skills with ideas not only on how to develop them but also how to engage them in playful and purposeful ways, all while engaged in the writing process. The importance of small motor skills, the focus of **Chapter 5**, is more intuitive since the creation of shapes, lines, drawing, letters, and words, as well as efficient keyboarding, all require hand and finger dexterity.

Chapter 6 is about handwriting. With instructional minutes at a premium in elementary and middle school classrooms, handwriting might not get a lot of real estate in terms of time. But it should, since letter formation deeply supports the development of readers and writers. Handwriting serves as the bridge, facilitating the communication of thoughts and language into written expression.

Spelling is complicated and foundational to both decoding and encoding, as well as to vocabulary development and the appreciation of language. **Chapter 7** takes on the development and nuances of spelling as it relates to the lives of writers.

Chapter 8 is about sentence structure. In order to create compositions, writers have to understand and construct sentences that become building blocks for larger ideas. How do writers shift from words to sentences, and how can teachers simplify the complexity of syntax and grammar? Chapter 8 helps navigate those questions.

A CLOSER LOOK: WITHIN EACH CHAPTER

Each chapter follows a common structure. We begin each chapter with a case that highlights or references a conversation with a teacher and their work with a particular student. Our hope is that you see students and issues familiar to you within the chapter openings. The faces of students and the conversations we've had with them ground our work and keep us focused on the admiration and awe we have toward all developing writers. From there, the chapters proceed as follows:

Learning the Language

Many of the chapters contain a lot of terminology related to the foundational skill at hand. In those chapters, we include a Learning the Language section where we spend time reviewing the key terms and vocabulary we discuss throughout the chapter. We've worked hard to distill the terms down to the ones that are really helpful for the work teachers do with students in writing classrooms.

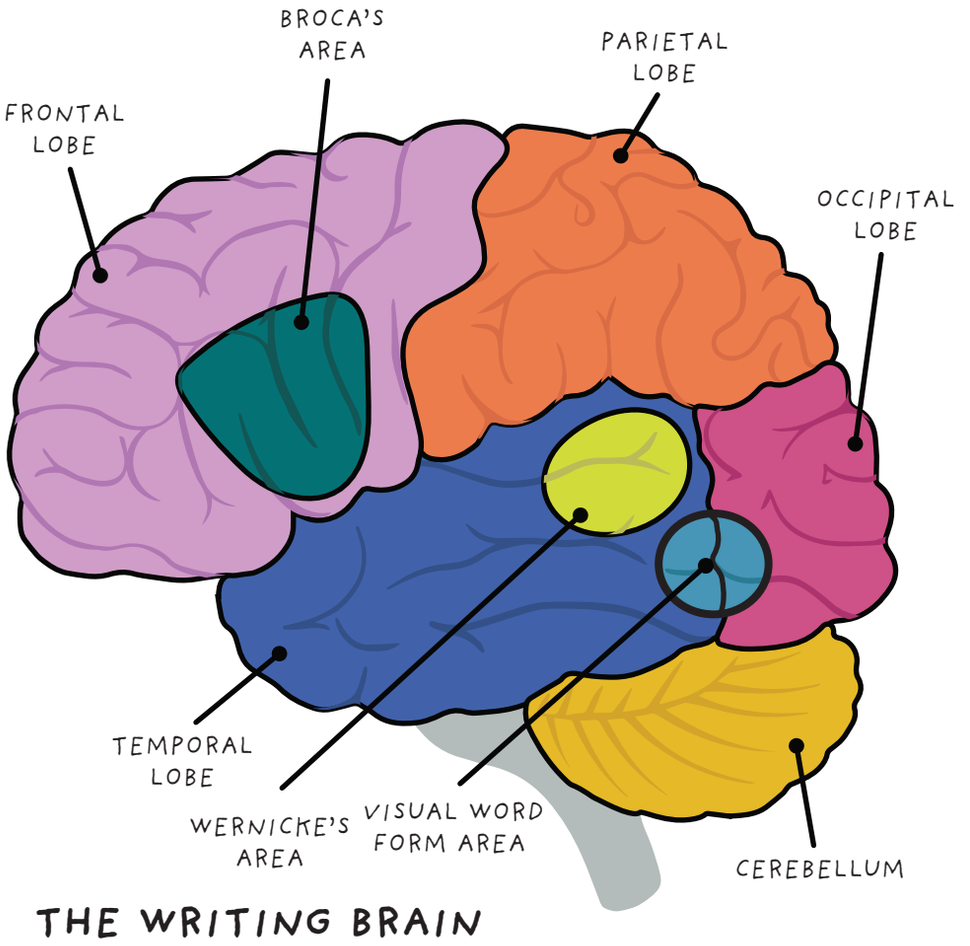
What's the Why?

The core message of Simon Sinek's seminal TedTalk (2010) about great leaders is that they lead with *Why*—their purpose or belief—rather than focusing solely on what they do or how they do it. He argues that people don't buy what you do; they buy *why* you do it. We will emphasize—now and throughout this book—that our *why* is to empower and inspire young people by equipping them with the skills, knowledge, and confidence of writers. Likewise, we aim to support teachers in developing the same mindset.

In the What's the Why? sections, you'll find the research, theories, and ideas that support the importance of each skill. This section lays the groundwork for why this skill is foundational for writing and why it matters that we teach it. Because some of the foundational skills of writing are so automated for experienced writers, it's easy to overlook their importance in the overall writing process.

Brain Basics

Despite the title of this section, nothing about the brain is basic! During our research, we became fascinated with all the ways our brains orchestrate writing and the cognitive science behind how we learn. While we went down some extremely technical pathways, we have distilled what we learned about how each foundational skill works in the brain; these Brain Basics sections explain complex neurological anatomy in a way that clearly applies to students. At the start of each Brain Basics section, you'll see The Writing Brain visual, with the relevant brain areas for that skill shaded in color:



THE WRITING BRAIN

While the brain is infinitely more complex than this image, for the sake of our chapters, it is important to have the following working knowledge:

- The **frontal lobe**, located in the front of the brain, plays a primary role in decision-making, concentration, intention, and overall executive functioning.
- **Broca's area** and **Wernicke's area** are important for production and interpretation of language.
- The **temporal lobe**, although far from acting alone, is involved in memory. Memory, however, requires many neurological interactions and networking of different brain regions depending on the type and the function.
- The **parietal lobe** is involved with sensory feedback and integration, as well as spatial awareness. It plays an important role with integrating and

processing sensory information from various parts of the body, particularly touch, temperature, pain, and body position.

- Toward the back of the brain is the **occipital lobe**, a part of the brain that is highly involved in vision.
- Writing wouldn't happen without movement and motor skills, and those skills require the activation of the **cerebellum**.
- The **Visual Word Form area**, located in the left ventral occipital-temporal (VOT) cortex, is specialized for recognizing and encoding written words and letter patterns.

None of these spaces operate in isolation when writing. The involvement and interactions are complex depending on the task, as well as the level of mastery and automaticity the writer has achieved. It's important to know that brain involvement changes depending on the level of skill mastery. Throughout the book, we highlight the parts of the brain that activate for the writer who is developing the skill in focus, as opposed to the writer who has achieved mastery.

We include key researchers in the field that relate to the skill in focus for readers who find interest in learning more about the brain and the science of writing.

The involvement and interactions are complex depending on the task, as well as the level of mastery and automaticity the writer has achieved.

What is cognitive load theory?

▸ Cognitive load theory is a framework for understanding the demands for cognitive processing power (Sweller, 1988). All learning relies on cognitive capacity.

Since cognitive capacity is limited, cognitive load theory aims to prevent overloading working memory by helping to locate all the elements of a learning task, separating them into necessary elements (intrinsic load) and unnecessary elements (extraneous load).

In other words, cognitive load theory values that brains can only take on so much at any given time, and we, as educators, must be careful how many cognitive demands are placed on the student during any given learning task.

Cognitive load theory also values that different brains have different processing capacities, and we should be in tune with how the demands of a learning task might impact the different students in the classroom.

Predictable Progressions

Think of a time you learned something new. Perhaps it was when you learned to cook a new recipe. At first, you likely referred to the recipe every step of the way. But over time, you began making it your own, consolidating a few steps or adding your own seasoning along the way. Your technique probably improved too, moving from uneven, hesitant cuts to smoother, more confident slices that happened without much thinking. There were steps in between, as the new learning has a progression to it—a progression of progress.

When we think about acquiring literacy skills, it's helpful to think about their development on a progression. Sure, there are ebbs and flows when learning something new—starts and stops, even regressions. But overall, learning happens on a progression toward proficiency.

Each chapter features a progression section—a section that takes the chapter's featured foundational skills and outlines their development across a progression. This way, you have a reference that gives a snapshot to the levels of development kids tend to move through as they learn the skill. Then, you can teach into the level you notice your students need, meeting them where they are and teaching their Zone of Proximal Development (Vygotsky, 1978).

What is the Zone of Proximal Development (ZPD)?

▶ Vygotsky's Zone of Proximal Development (1978) is a theory in educational psychology that describes the ideal range of learning for a child. It describes the zone of what students can do on their own and what they can do with help. It's a zone of readiness.

Learners thrive when tasks challenge them but don't overwhelm them. If we ask a child to try a skill that is far beyond their capability, the likelihood of giving up is high. On the other hand, tasks that are too easy can lead to boredom and lack of engagement.

Leveraging Literacy

The Leveraging Literacy section offers strategies, practices, and activities that can be integrated into your classroom to support students' progress on the featured foundational skill. Since many schools structure writing instruction in literacy blocks, this feature is designed to help you make the most of those minutes, offering practical ways to strengthen writing instruction and help students grow as confident and capable writers. The strategies, practices, and activities are curriculum-agnostic.

Some of you might be in a situation where you do not have an existing writing curriculum, or the curriculum you do have does more assigning writing than teaching how to write. If you find yourself in one of those situations, this section can help!

When are you scheduled to *teach* writing?

▶ Many children spend over half of their school day writing. In fact, students can spend up to 60% of their school day actively engaged in writing or equivalent fine motor-related tasks (Feder & Majnemer, 2007). Writing is often the default way students are asked to demonstrate their knowledge. For something so frequent and important in a student's school day, it's critical we carve out time to teach them to write.

The panel of the IES What Works Clearinghouse Practice Guide for Teaching Elementary School Students to be Effective Writers recommends that by first grade, educators dedicate at least thirty minutes a day "teaching a variety of writing strategies, techniques, and skills appropriate to students' levels" (Graham et al., 2018, p. 2).

Your eyes may be widening, eyebrows lifting, wondering how to fit that into an already crowded teaching schedule. If that's you, we understand. We encourage you to do what you can, striving to meet this recommendation. School and district leaders, we compassionately urge you to gather with colleagues and make sure there is daily protected writing instruction programmed for your school communities. A lot hinges on students' ability to write—protected writing instruction can be just the thing to make a huge difference in students' performance, confidence, and well-being.

MINUTE MOVES

▶ Perhaps you're waiting in line. Or you need an activity for a morning meeting. Maybe the specials teacher is running a few minutes late, or you need an activity to weave into snack time. We envision the ideas in this section happening during those unaccounted for minutes in the day (some of you may have more than others!).

Minute Moves are designed to feel playful in places, but the tips are clear, purposeful, and connected to the foundational skills required to write well. They may take the form of warm-ups, exercises, prompts, activities, or instructional moves that, while not taking long, have potential to nudge students along their learning process.

Revisiting

We end each chapter returning to the students we introduced at the beginning. How does the content of the chapter impact the work that could or did happen for that student? Every child in every chapter is representative of children everywhere. As you read the chapters, we hope that you identify with them, finding reasons and ways to support them along their journey to become competent and confident writers.

Conversations With Colleagues

▶ Our conversations with colleagues aim to foster collaboration across disciplines to enhance student learning.

Occupational therapists and speech therapists, for example, possess valuable expertise that extends far beyond students with IEPs. Their insights, often overlooked in traditional teacher preparation programs, can benefit all learners. When we spoke with Jamie Spencer, an occupational therapist from New York, we asked what change she would make if she were in charge of the educational world. One of her top priorities? Embedding occupational therapists into kindergarten classrooms on a monthly basis to provide hands-on, developmentally appropriate support from the start.

Beyond the walls of schools, research offers further insight into how children learn. Experts like Nelson Cowan, a leading researcher in working memory, contribute vital perspectives that validate and inform instructional practices. The professionals we've highlighted represent just a fraction of the brilliant minds within our educational spheres. We hope their knowledge inspires you to seek out other untapped sources of expertise, bridging gaps and broadening the collective understanding of how students learn best.

LET'S GET STARTED

By now, we hope you feel not only invited into this book but also supported in the work ahead. We hope it helped widen the lens through which you view writing, not just as an academic task, but as a complex cognitive process, a powerful

form of communication, and a deeply human act. You've also seen that this book is not just about what to teach; it's about how to notice, how to respond, and how to partner with young writers on their journey.

Maybe you're feeling excited. Maybe a little overwhelmed. That's okay. Teaching writing is a big task, and you don't have to do it all at once. This book is here to help you take it one piece at a time, with clarity, compassion, and practical strategies.

Writing calls on us to be attentive not only to *what* our students write but *how* they write—and what gets in the way.

And that's exactly what this book sets out to do—to help you see the foundations beneath every written word. When you notice a student struggling to get started or finishing just one sentence while others are on their fifth, this book can help you ask questions designed to uncover what kids really need. When you sense that something is happening below the surface of the writing itself, this book can help you look more closely and teach more skillfully.

So let's begin. Maybe you'll start with Chapter 2 on executive functions, since it threads through so many other skills. Or maybe you'll jump to the chapter that speaks most urgently to a student you're thinking of right now. Wherever you begin, and however you move through, remember, this book is a companion, not a prescription.

We're here alongside you as you read, reflect, and teach. We're here alongside you with curiosity, care, and a deep belief in what's possible when we give students the tools they need to write with confidence, clarity, and power.

We're so glad you're here.

Let's get started.

Conversations with a Colleague

Young-Suk Kim

▶ Young-Suk Kim is a professor and researcher at the University of California in Irvine whose research focuses on language and literacy development. She has received numerous accolades for her work, including the 2012 Presidential Early Career Award for Scientists and Engineers. She was recognized as one of the most productive scholars in educational psychology between 2015 and 2021, and she continues to contribute tremendously to the field.

Kim's writing model, the Direct and Indirect Effects Model of Writing (DIEW) and the Expanded DIEW, combines many skills including text production, idea generation, and reading comprehension, as well as subject knowledge, mindset, and executive functioning.

Dr. Kim's model shares many of the same elements that our visual graphic does, and we invited her to share some of her knowledge as it relates to writing instruction. We talked to her as we wrote this chapter and have included some of her insights.

Key takeaways:

- The recognition of the multidimensionality of written expression. Writing involves lexical literacy which is closely related to transcription, and it also encompasses oral language, reading, and knowledge, as well as social-emotional outlooks and executive functioning.
- Reading and writing are closely related. Writers need to read in order to access content, and they also need to read in order to revise their own written work.
- The evaluation and assessment of written composition should involve several dimensions including volume, fluency, language, and conventions, as well as the overall quality of the content.
- There is no magic wand or silver bullet when it comes to writing instruction. Everything matters when it comes to teaching children how to write; curriculum is really important, but teachers need to know how to use it.
- Building foundational skills is important for young students, as well as older students.

"People have a hard time with complexity," Dr. Kim stated, as we talked about the hierarchy of skills and her Dynamic Relations Hypothesis that encompasses the DIEW and emphasizes that writing development is a fluid process that involves many component skills. "Curriculum is really important—but teachers need to know how to use it, incorporating it into their instruction based on the students in their classrooms."

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