The Canon of Literacy:

The Three Sciences Framework

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The Canon of Literacy represents a call to integrate three distinct but interconnected bodies of scientific knowledge—the science of reading, the science of learning, and the science of instruction—into a coherent, evidence-based approach to teaching children to read.

Why a Canon of Literacy?

For decades, literacy education has been shaped by pendulum swings between competing philosophies—from whole language to phonics-first and back again. The science of reading movement has been a critical corrective, bringing renewed attention to decoding, phonemic awareness, and the alphabetic principle, while elevating comprehension, vocabulary and background knowledge. However, the science of reading is not the science of instruction, and, alone, it is not sufficient to ensure high levels of learning. Knowing what to teach is only part of the equation. Educators also need to understand how children learn and how to design instruction that supports that learning. *The Canon of Literacy* addresses this gap by arguing that effective literacy instruction must draw on three sciences rather than just one.

The Three Sciences Framework

The Canon intentionally shifts the familiar language from “the science of reading,” “the science of learning,” and “the science of instruction” to “literacy science,” “learning science,” and “instructional science.” The change is deliberate and meaningful. Semantically, “the science of” implies a settled, bounded body of knowledge. Although some knowledge is settled and confirmed, science is always evolving. The more we learn, the more we ask, and better questions lead to better answers. By naming each field a living science rather than a fixed body of findings, the Canon signals that educators must remain open to new and compelling evidence and be willing to change practices accordingly. Literacy science, learning science, and instructional science together constitute a complete science of literacy—one that grows as each part grows.

1. Literacy Science

The field has come to know the domain science of reading as “the science of reading,” referring to the accumulated body of research on how skilled reading develops and what

processes underlie proficient reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. The Canon of Literacy expands this to literacy science, broadening the lens beyond reading to encompass the full range of literacy development, including proficient language use, writing, spelling, and the reciprocal relationships among them. The expansion matters because reading, writing, and language use are not separate skills; they draw on shared knowledge and reinforce each other. Literacy science tells us what developmental pathways and instructional components lead to proficient reading, writing, and language use. It answers questions like: What skills do readers and writers need to develop? What is the structure of the English writing system? How do reading and writing develop together? What challenges do some learners encounter in developing literacy skills?

2. Learning Science

Learning science draws on cognitive, developmental, and educational psychology to explain how people acquire new knowledge and skills. It encompasses principles such as retrieval practice, spaced practice, interleaving (cumulative practice), and cognitive load management. Critically, the Canon of Literacy argues that learning science extends beyond cognitive science alone—it also includes motivation, engagement, self-regulation, and the social and emotional dimensions of learning. The science of learning tells us *how* students learn. It answers questions like: How does memory work? What conditions promote durable learning? How do motivation and engagement interact with cognition?

3. Instructional Science

Instructional science translates knowledge from domain science and learning science into effective teaching practices. This includes research on explicit instruction, guided and purposeful practice, scaffolding, formative assessment, feedback, differentiation, frequent response opportunities. and responsive teaching. Literacy Science provides the “what” and instructional science provides the “how”—if we want lasting change in literacy education, we need to align pedagogy with science. Instructional science tells us *how to teach*: how to organize, sequence, and deliver content in ways that align with how students learn. It is the bridge between scientific knowledge and classroom practice.

Key Takeaways

1.The science of reading is necessary but not sufficient. Knowing what to teach does not automatically tell us how students learn or how to teach effectively. All three sciences are needed to move from research to high-quality practice.

2.Learning science goes beyond cognitive science. A complete account of learning includes motivation, engagement, self-regulation, social interaction, and the affective dimensions of the classroom experience—not just how memory and attention work.

3.Instructional science is the critical bridge. Without a robust science of instruction, research findings remain abstractions. Instructional science provides the actionable principles that guide curriculum design, lesson planning, and responsive teaching.

The three sciences are interdependent. A change in our understanding of one science has implications for the others. Effective literacy instruction emerges at the intersection of all three.

Programs and practices should be evaluated through a three-sciences lens. When selecting curricula or instructional approaches, educators should ask: Is this grounded in what we know about reading? About how children learn? About effective instruction?

Implications for Practice

The Canon of Literacy invites educators to move beyond debates that pit one science against another. Rather than asking whether phonics or comprehension matters more, or whether explicit instruction or student-centered learning is better, the three sciences framework asks us to consider how these bodies of knowledge work together. For curriculum developers, this means designing materials that reflect not only the content of reading research but also the principles of how students learn and the practices of effective instruction. For teachers, it means developing fluency across all three sciences—understanding the reading system, understanding learners, and understanding the craft of teaching. This also means rejecting teacher shame and instead investing in professional learning that builds capacity across all three sciences, reduces stigma for struggling readers, and equips educators with the integrated knowledge they need.

Continue the Conversation

The ideas in the Canon of Literacy are generating rich discussion across multiple platforms. Deepen your understanding through these additional resources:

edWebinar Recording: The Canon of Literacy, sponsored by Center for the Collaborative Classroom

Learning Can't Wait Podcast: Dr. Paige Pullen discusses the three sciences, common instructional missteps, and the importance of bridging research to practice across district ecosystems

Progressively Incorrect Podcast (Education Rickshaw): S5E02 — Linda Diamond & Paige Pullen on Connecting Learning, Literacy, and Instruction, with host Dr. Zach Groshell