READING & LITERACY EXPLAINER

‘Encoding’ Explained: What It Is and Why It’s Essential to Literacy

Often overlooked, it deserves equal attention to its counterpart, decoding

By Elizabeth Heubeck — January 17, 2023 7 min read

— iStock/Getty

Ask an early-elementary teacher what the recently popularized term “science-based reading instruction” means, and the response is likely to include something about decoding—the process of translating words from print to speech by matching letters and their combinations to the sounds they make.

This makes sense, as decoding is an undisputed hallmark of early literacy. So, too, is encoding, decoding’s opposite, whereby a spoken word is broken down into its individual sounds in the act

of spelling and writing.

But encoding doesn't get nearly the attention that decoding does, despite evidence that, from the earliest grades on, writing practice is a powerful aid and complement to reading instruction. As a result, say some literacy experts, students suffer.

"Encoding and decoding go hand in hand; they're like two sides of a coin," said Crystal Whitman, an instructional coach at Rosman Elementary School in North Carolina's Transylvania County. "Our hands have been heavier on the decoding side, so we have some weak spellers, weak writers."

As literacy experts strongly suggest, encoding is often underrepresented in early literacy instruction, even in programs that claim to be steeped in evidence-based practices.

Education Week spoke to literacy experts, researchers, and educators to find out why and what students miss when their exposure to encoding is irregular or minimal. We also culled strategies from structured-literacy advocates on how to embed encoding into daily classroom instruction.

How did encoding get overlooked?

Literacy consultant Steve Graham has spent more than four decades studying the "hows" of writing: how it develops, how to teach it effectively, and how writing can be used to support reading and learning. The lack of emphasis on teaching writing, he points out, is nothing new.

"In pre-revolutionary days, you could teach someone how to read. But without additional instruction, they didn't necessarily learn how to write," said Graham, a professor at Arizona State University's teachers college.

In many of today's early-literacy programs, the weight of the pendulum remains firmly rooted on the side of teaching reading over writing. Inadvertently, the recent rise of evidence-based literacy programs based on the 2000 results of the congressional National Reading Panel may be partly to blame.

Heavily publicized nationwide, the panel recommends combining the following techniques for teaching children to read: phonemic awareness, phonics, fluency, guided oral reading, teaching vocabulary words, and reading-comprehension strategy.

The report does reference writing, particularly in the context of phonemic awareness and phonics, as students are learning how to manipulate sounds and letters. But it does not specifically mention encoding—or other granular aspects of writing. And even today, there is much less published research on the elements of effective writing instruction.

"I've done a number of national surveys," Graham said. "Writing and encoding see much less emphasis in the curriculum than reading does."

Other literacy experts share similar experiences. "Most phonics instruction is heavily focused on decoding. They want kids to learn how to read words. They might do some encoding, but it's often an afterthought," said Margie Gillis, a nationally recognized literacy expert and the president of Connecticut-based Literacy How, Inc., a company that creates professional-development curricula for pre-K through middle school.

Reading professor Amy Murdoch says she's seen schools "plop in" phonological-awareness programs that are disconnected to the other important elements of early literacy like spelling and writing.

Why encoding matters, and what it looks like in the classroom

"You can't separate the different strategies of language," said Murdoch, an assistant dean and associate professor in the School of Education at Mount St. Joseph University in Cincinnati.

That's particularly true for encoding and decoding. "We really drive home the point that [decoding and encoding] are reciprocal, and they bootstrap each other," Gillis said.

The brush strokes that, ideally, children begin practicing even before kindergarten form the essential building blocks of encoding: letters and, subsequently, words and sentences. Teaching proper letter formation through repetition breeds automaticity, which is critical for the writing process, say literacy experts.

"I'm a stickler for letter formations. If our kids are not forming letters correctly to automaticity, that impedes them in spelling and writing, because they're having to then think of how to form those letters," said literacy expert Casey Harrison.

When students develop letter automaticity, they can shift their focus to whatever it is they're writing, points out Harrison, an Austin, Texas-based licensed dyslexia therapist and founder of The Dyslexia Classroom, which provides resources for dyslexic learners as well as online courses for educators, parents, and therapists.

Carrie Norris, the director of K-8 curriculum and instruction for the Transylvania County schools in North Carolina, has witnessed firsthand the advantages that come with a focus on early letter formation among her district's kindergartners. "They learn how to do strokes first—students doing horizontal, vertical, diagonal, and circle strokes," said Norris, who added that she's seen a significant improvement in students' ability to form letters correctly when given consistent and step-by-step practice opportunities in kindergarten.

But even the earliest stages of encoding should not be happening in a vacuum, the experts explain. "We are tying muscle movement and tactile kinetic letter formation with hearing the sound and associating it with its name," said Gillis.

Spelling assignments often miss the mark

Very young students just beginning to connect their understanding of phonetic awareness to writing letters and words may struggle with the fine motor skills these tasks require. Making it fun can help. Gillis suggests having students write on a plate of shaving cream. Colored sand is another favorite, as are grooved surfaces that feel good on students' fingertips. "It doesn't have to be 'drill and kill'," shes said.

Despite ample evidence of the reciprocal and necessary relationship between decoding and encoding, some traditional assignments continue to miss the mark. Take spelling lists, for instance.

"I still see spelling instruction whereby lists of [spelling] words are sent home that may or may not have some spelling patterns in there," Harrison said. "It makes me realize the deep connection between sound-spelling for reading and sound-spelling for writing is not fully understood."

She doesn't suggest getting rid of the age-old spelling list, rather, revising how it's used. "Spelling instruction should be part of daily literacy lessons," Harrison said. "But we want students drawing on their sound-symbol knowledge and connections to reading instruction."

> If our kids are not forming letters correctly to automaticity, that impedes them in spelling and writing, because they're having to then think of how to form those letters.
>
> **Casey Harrison, licensed dyslexia therapist**

Harrison explains her version of the spelling test. As a former classroom teacher, and now as a licensed dyslexia therapist, she'll make a video of the spelling concept of the week (for example, spelling with the final /k/ sound or vowel-consonant-e pattern) and use it all week in class as the students focus on decoding and encoding words containing the rule. On Friday, students have their spelling test. Harrison picks 10 to 20 words containing the rule and has the students write the words using the concept they'd learned that week.

When students spell the words correctly, Harrison knows they haven't simply memorized a list of words they were apt to forget later. Rather, they've mastered a phonetic rule of the English language that they could apply to other words they attempt to read or spell.

"I tell them: I can't teach you every word in the English language. But I can give you the tools to apply to new, unknown words for reading and spelling," Harrison said.

The science of reading movement has been largely led by advocates of students with language disabilities. And as with decoding, teaching encoding in a systematic, explicit manner can benefit all kids but is particularly critical to those with processing disorders.

"These are our students who are struggling in accessing the phonological code," Harrison said, referring to students with dyslexia. "They really need it broken down into a very systematic approach, where things are explicitly taught."

Students who are unable to spell words experience cascading effects like lower scores on assignments and a disconnect between oral and written language, which can lead to poor self-esteem and a negative outlook on schoolwork, Harrison observes. When students become proficient readers and spellers, the opposite can occur.

"I want to empower students," Harrison said. "We do that by connecting the reading and the spelling."

Elizabeth Heubeck

Staff Writer

Elizabeth Heubeck is a staff writer for Education Week.