IES Institute of Education Sciences

Montana ELA Standards Revision: Brief 1
Reading Instructional Practices and Models

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Introduction

For this first of five briefs, REL Northwest summarized research and common theoretical frameworks to respond to the following question: *What instructional practices and models contribute to reading instruction at different grade levels?*

The set of briefs aims to provide the Montana Office of Public Instruction (OPI) with relevant research to help their English Language Arts (ELA) standards development team generate actionable, evidence-based state standards that will form the foundation for literacy instruction.

The brief is organized into two sections:

1. Overview of common literacy models
2. Evidence-based reading instructional practices

Throughout the brief, REL Northwest has defined key terms to establish shared understanding of relevant concepts and has embedded guided questions that prompt the reader to pause, reflect on what was read, and consider how the information presented can be used to inform the standards revision process.

As sources for evidence, this brief draws upon

- large **meta-analyses**, which are quantitative syntheses of empirical studies from multiple independent researchers who used causal (e.g., quasi-experimental, experimental) methods to evaluate a particular literacy approach and effects on specific learner outcomes,
- **Institute of Education Sciences (IES) practice guides** developed by the U.S. Department of Education to synthesize hundreds of individual studies and translate the available rigorous research evidence over the past few decades into actionable recommendations for practitioners, and
- **individual peer-reviewed research studies and research reviews** on underlying theoretical frameworks, extensions and considerations for reading instruction, and additional evidence identified by subject matter experts or included in other briefs within this series.

Overview of common literacy models

This section describes common literacy models that are informed by decades of research on reading that span multiple disciplines (i.e., cognitive psychology, developmental psychology, education, implementation science, linguistics, neuroscience). These models theorize how reading skills develop and describe the processes that occur in the human brain when learning to read (Petscher et al., 2020).

⇒ To learn more about the science of reading, see two special issues from *Reading Research Quarterly* (Goodwin et al., 2020; Goodwin et al., 2021).

No single reading model captures all components of these processes; therefore, this section pulls from a variety of commonly cited literacy models identified by subject matter experts to provide insights into how learners acquire literacy strategies and skills and to prompt reflection about implications for how literacy instruction is designed.

The Simple View of Reading

The Simple View of Reading posits that reading comprehension is the product of two distinct competencies: **word recognition and language comprehension** (Gough & Tumner, 1986; Hoover & Tunmer, 2022). According to the Simple View of Reading model, instruction is only effective when it addresses learners' specific skills in one or both areas. This model presents a high-level overview of the skills necessary for reading comprehension, as opposed to the process underlying them (Hoover & Tunmer, 2022).

Scarborough's Rope

Scarborough's Rope model represents the **specific skills that underly word recognition and language comprehension** (Scarborough, 2001). Scarborough's Rope emphasizes that both word recognition and language comprehension are necessary for reading but are also not wholly independent of one another.

The Active View of Reading

The Active View of Reading contextualizes the process of reading by illustrating that readers have different **content knowledge as well as specific motivations for interacting with text** (e.g., for enjoyment, to extract specific information to answer a question; Duke & Cartwright, 2019). Having content-specific knowledge and purpose when reading can help readers better comprehend and fluently read a text (Cartwright & Duke, 2019). The Active View of Reading also notes the novel contribution of word recognition and language comprehension to reading comprehension and "bridging processes" like vocabulary, reading fluency, and morphological awareness (i.e., understanding parts of words) that require both word recognition and language comprehension skills (Duke & Cartwright, 2021). Finally, the Active View of Reading highlights additional factors that are important but indirectly related to reading comprehension. These include active **self-regulation skills around motivation and engagement, executive function, and strategy usage** that can be taught to help learners coordinate processes, flexibly deploy strategies, persevere in the face of complex texts, and actively engage with texts (Cartwright & Duke, 2019; Duke & Cartwright, 2021).

Pause and reflect

How are these three models similar? How are they different?

Direct and Indirect Effect Model of Reading

The Direct and Indirect Effect Model of Reading (DIER) suggests cognitive domains that affect the way in which word recognition and language comprehension produce comprehension (Kim, 2017; Kim, 2020). These include **working memory, inference, comprehension monitoring, and perspective taking.** DIER depicts a multilevel, hierarchical process to reading, whereby readers first parse what they read (e.g., word reading, knowledge of vocabulary and grammar) and hold it in memory and then apply a series of strategies—such as knowledge-based inferring, perspective taking, and comprehension monitoring—to create meaning. DIER draws attention to cognitive processes that work to transform word recognition and language comprehension into comprehension.

Construction-Integration Model

The construction-integration model is a cognitive theory that frames comprehension as being the result of **short-term memory processes in which learners interpret text through the lens of what**

they know (Wharton & Kintsch, 1991). Construction-Integration features two ordered steps: knowledge construction and knowledge integration. During knowledge construction, word meanings are activated, mental representation of the connections between concepts and propositions are formed based on current knowledge and experiences, and inferences and elaborations are produced (Kintsch, 1988).

During knowledge integration, the reader refines these connections to create a coherent and interpretable whole, referred to as the final text representation, which can then be interpreted and evaluated.

Four-Part Processing Model of Word Recognition

The Four-Part Processing Model of Word Recognition illustrates how the brain recognizes words (Seidenberg & McClelland, 1989). Specifically, it suggests that four different areas of the brain—or processors—are active when reading. The first is the **phonological processor** that detects, recalls, and understands sounds that make up spoken words. The second is the **orthographic processor** that recognizes, stores, and recalls print information needed to recognize and recall written. A third is the **meaning processor** that helps interpret word meanings. Last, the **context processor** supports the meaning processor by interpreting words based on specific contexts and/or background knowledge. Decoding is the result of the orthographic and phonological processors connecting speech sounds to symbols or letters. Once a word is read, the meaning processor considers all possible definitions of a word, and the context process helps the reader understand what has been read.

Four Resources Model

The central premise of the Four Resources Model is that readers construct meaning and analyze texts **within specific sociocultural context** (Serafini, 2012). Specifically, the Four Resources Model suggests that readers assume different roles as they read, with each role utilizing specific resources (Freebody & Luke, 1990). The first role is the "code breaker," who maps written words to sounds and associates the representation of the resulting words with their meanings. The second is the "text participant"—also referred to as "meaning maker"—who integrates text and previous knowledge to understand the meaning of what is being conveyed. Third, the "text user" considers the function a specific text serves in the present context. Last, the "text critic" unpacks the sociocultural assumptions behind a text and its consequences. All roles are necessary but not sufficient, and all need to be brought together and coordinated to become a successful reader (Pearson & Cervetti, 2015).

Compensatory model of second language learning

Reading comprehension is situated within a sociocultural context; understanding text is influenced by the world around the reader. For students learning English, reading can be challenging because they have to figure out how reading works in a language that is new to them. However, if the learner reads in their first language, the process of reading and learning in a second language can be similar. **Literacy skills developed in one language are transferable to another** (Bunch et al., 2014). The compensatory model of second language learning says that when it comes to understanding what you read in a second language, 20 percent of it depends on literacy in your first language, like vocabulary and the structures of texts. Another 30 percent depends on knowledge of the second language, like recognizing similar words (cognates). The remaining 50 percent is a mix of different factors, like comprehension strategies, engagement, content and domain knowledge, and motivation (Bernhardt, 2011). Readers may compensate for shortages in one area by drawing more heavily on others.

Pause and reflect

What additional components do the last five models address?
What considerations should be made for literacy instruction?

Overview of evidence-based reading instructional practices

This section defines five simultaneously developing competencies—namely phonics, phonemic awareness, fluency, vocabulary, reading comprehension, and motivation and engagement (Buckingham, 2020; Cartwright & Duke, 2019)—that are important for reading development. It further describes how each competency contributes to overall reading development, presents a sample of evidence-based practices for incorporating it into classroom instruction across grade levels, and provides evidence-based considerations for embedding technology, supporting multiliteracy, and incorporating writing into reading instruction.

This section primarily draws from on three IES practice guides: *Preparing Young Children for School* (Burchinal et al., 2022), which provides recommendations based on 49 causal studies around instructional practices contributing to early school success; *Foundational Skills to Support Reading for Understanding in Kindergarten through 3rd Grade* (Foorman et al., 2016), which includes recommendations based on 56 causal studies on instructional practices for supporting foundational skills development in kindergarten through grade 3; and *Improving Reading Comprehension in Kindergarten through 3rd Grade* (Shanahan et al., 2010), which includes strategies for improving reading comprehension in kindergarten through grade 3 based on 27 causal studies.

It also includes evidence from a large meta-analysis conducted by REL Southeast that reviewed 109 causal studies on the effectiveness of early literacy instructional practices between 1997–2017 (Herrera et al., 2021) and from peer-reviewed articles and seminal reports that provide theoretical support and practical considerations for adapting reading instruction.

⇒ To learn more about evidence-based reading instructional practices in the early grades, see Brief 3, entitled *Stages of Emergent Literacy and Language Development,* within this series.

⇒ For more information on evidence-based reading instructional practices in adolescence, see Brief 4, entitled *Components of Adolescent Literacy Development,* within this series.

Evidence-based reading instructional practices across grades

Phonics

Explicit, systematic phonics instruction refers to directly teaching letter (grapheme) to sound (phoneme) correspondences in a planned sequence (Buckingham, 2020). Having a planned sequence, however, does not specify that sound units be taught in one specific order as long as they are intentionally (i.e., explicitly) taught and differentiated for the learner (Fletcher et al., 2022).

The evidence supports the **systematic and explicit teaching of phonics** as an important part of reading instruction for both typically developing and struggling readers (Buckingham, 2020; Burchinal et al., 2022; Fletcher, Savage, & Vaughn, 2020; Herrera et al., 2021; National Reading Panel, 2000). Phonics instruction may center on phonetically regular words that follow the Consonant-Vowel-Consonant (CVC), CCVC, and CVCC patterns and then move on to more sophisticated patterns such as Consonant-Vowel-Consonant–silent e (CVCe); these are typically taught within single syllable patterns. As learners encounter longer and polysyllabic words, phonics instruction may center on building morphological knowledge (e.g., root words, inflectional and derivational endings).

Competencies for reading development

Phonics: The knowledge of sounds that correspond to each letter or group of letters in the English language

Phonemic awareness: The ability to hear and manipulate the individual sounds in spoken words

Fluency: Accuracy, automaticity, and expression when reading (e.g., using appropriate pitch, tempo, and pauses when reading)

Vocabulary: The knowledge of individual words used to communicate effectively when listening, speaking, reading, and writing

Reading comprehension: The process of simultaneously extracting and constructing meaning through interaction and involvement with written language

Motivation and engagement: Expecting value in, having interest in, and having desire to read, which facilitates active participation in reading and interaction with text

Phonemic awareness

Phonemic awareness is the ability to hear and manipulate the individual phonemes (or sounds) in spoken words and includes such skills as being able to identify, isolate, categorize, blend, segment, delete, and substitute phonemes (e.g., substituting /c/ in the word /cat/ with /m/ to make the new word /mat/; National Early Literacy Panel, 2008; Rice et al., 2022).

The literature highlights the importance of early and explicit instruction on phonemic awareness (Burchinal et al., 2022; Foorman et al., 2016; Herrera et al., 2021). Phonemic awareness instruction is effective for both at-risk and low-risk learners across the early grades (e.g., preschool and early elementary school) and across settings (e.g., one-on-one, small group, whole group; National Reading Panel, 2000; Rice et al., 2022).

Systematic and explicit instruction

Explicit instruction: Instruction that is teacher-directed and includes modelling, guided practice, and independent application with immediate corrective feedback

Systematic instruction: Instruction that follows a planned sequence

Fluency and vocabulary

Fluency refers to accuracy, automaticity, and expression when reading, while vocabulary refers to the knowledge of individual words used to communicate effectively when listening, speaking, reading, and writing.

Teaching fluency requires **explicit vocabulary instruction and morphological instruction that helps learners analyze word parts** (i.e., prefixes, suffixes, and bases; Spichtig et al., 2022). Furthermore, instructing learners on **how to recognize high frequency words as well as irregular words** with nondecodable sound-spelling patterns or sound-spelling patterns that learners have not yet learned, both in and out of context, is essential to developing fluency (Foorman et al., 2016). As soon as learners are able to identify a few words, they should be **reading connected texts daily that reflect student interests and are comprised of multiple, related sentences** to support reading fluency. In doing so, learners learn to identify words quickly, which motivates learners and allows them to engage in reading with little conscious effort or attention. Learners are then able to attend to comprehending the ideas in a text instead of spending cognitive resources on decoding (Spichtig et al., 2022). Although fluency is an important part of reading, if it is attended to devoid of attention to comprehension, it may not result in an understanding of what was read. Instead, learners should be taught how to read fluently while also attending to the meaning of the text.

Fluency instruction

Morphological instruction: Morphology refers to knowledge of the meaningful word parts in a language. Through morphological instruction, learners are taught how to break down words into meaningful sublexical parts (e.g., prefixes, bases, and suffixes).

Whole word or sight word instruction: Instruction focused on holistically identifying individual words without breaking down the words into phonemes or other sublexical parts.

Reading comprehension

Reading comprehension refers to the process of simultaneously extracting and constructing meaning through interaction and involvement with written language. The ability to understand what one reads is at the heart of what it means to read. Often misunderstood, learning to read and reading to learn are complementary processes, with different forms of knowledge being both prerequisites for successful reading and the results of successful reading. Learners—even those still learning foundational skills—understand what is new in a text by connecting to and building on what they already know.

Comprehension instruction should, thus, focus on **intentionally building and activating relevant knowledge (including vocabulary), explicitly teaching age-appropriate comprehension strategies, helping learners self-monitor their comprehension (e.g., metacognition), empowering learners to determine which comprehension strategy or strategies to deploy in a particular setting, and facilitating learners' reintegration of what they have learned into their knowledge base** (Afflerbach et al., 2020, Burchinal et al., 2022; Foorman et al., 2016; Herrera et al., 2021; Shanahan et al., 2010). Then, learners should be given ample opportunities—both individually and in collaboration with peers—to actively interact with a variety of narrative and informational texts across different genres and within the content areas. These may include shared book reading, high-quality discussions about texts, and authentic application of complex, higher-order thinking skills (e.g., evaluating, analyzing, comparing, and synthesizing) to texts that results in new products, arguments, or insights (Herrera et al., 2021; Shanahan et al., 2010).

Motivation and engagement

Motivation in the context of literacy refers to expecting value in, having interest in, and having desire to read, which facilitates engagement, or active participation in, reading and interaction with text (Duke & Cartwright, 2021). Motivation and engagement positively influence learners' word reading, reading fluency, and reading comprehension and empowers them to persist throughout reading tasks, even in the face of difficulty (Cartwright & Duke, 2019).

These skills not only predict reading achievement but also can be **taught through instruction on self-regulation and instruction that shifts learners' mindsets around reading success and difficulties** (Duke & Cartwright, 2021). Furthermore, motivation and engagement can also be enhanced by **providing reading materials aligned to learners' interests** (Duke & Cartwright, 2021).

Pause and reflect

How can competencies work together or complement one another during reading instruction?

Considerations for technology and reading instruction

Technology and reading instruction have become increasingly integrated in the classroom as the internet has become indispensable for producing and publishing writing and gathering relevant information from multimodal (e.g., print, digital, visual) sources. However, rapidly changing technologies and the constant generation of new information requires that reading instruction adapt to ensure that learners have the competencies they need to successfully navigate these new literacy

contexts (Leu et al., 2018). In fact, many additional competencies may be required in digital spaces compared to offline spaces. Thus, online literacy is its own form of literacy that may require overlapping or different skills from offline reading instruction (Leu et al., 2018).

Another important consideration is that technology can be an effective partner in supporting literacy instruction. Although more research on the use of different types and quality of technology in reading instruction—especially around specific apps—is needed, evidence suggests that technology can be an effective tool for supporting learners who need reading intervention (Leu et al., 2018). Recent research suggests that computer-based phonemic awareness programs may be more effective for learners at risk of reading difficulties compared to low-risk learners (Rice et al., 2022). Although more research is needed on why this might be the case, researchers point to the individualized nature of computer programs with adaptive levels of difficulty, repetitive practice, instant feedback, and game-like features that may provide the scaffolds struggling readers need to reach mastery (Rice et al., 2022).

One additional consideration is that, although learners may be "digital natives" that are skilled in social networking, gaming, and texting, they may not have the necessary skills—such as locating and critically evaluating information—that are needed to produce academic work in digital spaces. Thus, technologically-informed reading instruction should also attend to developing these specific skills so that learners have the competencies they need to be literate across contexts (Leu et al., 2018).

Considerations for multiliterate reading instruction

With an increasing number of learners coming to school with the knowledge of more than one language, it is imperative that researchers and practitioners attend to the specific literacy strengths of multilingual and multiliterate learners (Afflerbach et al., 2020; Rice et al., 2022). Learning to read in one language promotes reading achievement in another language, specifically in the transfer of linguistic gains and content knowledge from one language to another (Bunch et al., 2014; Krashen, 2005). It is important to promote multiliteracy among learners that speak more than one language. If these skills are not nurtured, learners are not only in danger of losing their literacy skills in one language but also of having difficulty acquiring literacy in another language (Ríos & Castillón, 2018).

Some practices for supporting multiliterate reading instruction include, for example (Ríos & Castillón, 2018):

- exploring and making cross-language connections,
- encouraging free reading in different languages,
- providing access to a variety of interesting and high-quality multiliterate texts, and
- facilitating opportunities to function in multiple languages and/or writing systems.

On a programmatic level, dual language bilingual programs that feature high-quality literacy instruction in more than one language are effective in developing multilingual and multiliterate academic competencies among both English learners and heritage-English speakers (Thomas & Collier, 2003). These programs allow multiliterate learners to not only continue learning and reading in their primary language at school but also to use their knowledge of one language to develop metalinguistic connections that serve as a foundation for learning and reading in another (Ríos & Castillón, 2018).

Considerations for incorporating writing in reading instruction

There are also evidence-based considerations for incorporating writing into reading instruction. Reading and writing are mutually reinforcing processes that draw on shared knowledge to influence literacy development and reading comprehension. Many of the same concepts presented in this brief apply to effective writing instruction (e.g., explicit, direct instruction, teacher scaffolding, differentiation based on individual student needs, and developing supportive and motivating environments for reading and writing).

⇒ For more information on evidence-based considerations for incorporating writing in reading instruction, see Brief 2, entitled *Relationship Between Reading and Writing,* within this series.

Pause and reflect

How do these additional considerations potentially add to or effect how Montana envisions literacy instruction and reading development?

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