THE SCIENCE OF READING IN MULTILINGUAL K-12 CLASSROOMS

THE OFFICE OF BILINGUAL EDUCATION AND WORLD LANGUAGES
BRIEF 5

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The Science of Reading and English Language Learners and Multilingual Learners

The term **Science of Reading (SoR)** denotes a body of research that documents and describes how children develop reading and writing skills and competencies. Insights gained from these studies support the existence of common processes that students deploy while learning to decipher and comprehend the language of print (The Reading League, 2022).

NYSED's Literacy Initiative has published a series of topic briefs to help educators better understand SoR and guidance documents that provide information on best practices and strategies to implement SoR concepts, primarily in the general education classroom.

Much more study is needed, however, to understand the degree to which these processes occur uniformly for all students, especially as it relates to adoption of SoR practices for linguistically diverse students (Athanases & Wong, 2018; Gonzalez & Huynh, 2024). This BRIEF serves to provide further information for administrators and educators of English Language Learners (ELLs) and Multilingual Learners (MLs).

The content of this BRIEF will inform application of SoR learning to classrooms in which ELL and ML students are learning to read. Principles of SoR appear most often prescribed and applied in classrooms where students are learning to read in English. While the focus of this BRIEF relates to ELL and ML students, the insights are applicable to all students whose culture and language factor differently in how they most efficiently learn to read and write. Support for literacy in languages other than English vary by program but all schools must teach the integration of skills necessary for academic and vocational success in English (Ortiz et al, 2021). It is therefore essential that we adopt practices that enable ELL and ML students' maximal rather than conditional access to literacy instruction and engagement with text. Practices must equitably benefit ELL and ML students at every stage of learning (Kittle et al., 2024).

When implementing SoR in the classroom, educators should not take a universal approach but rather must consider the linguistic diversity of their students.

Big Studies and the Big Six Skills and Competencies

In 2000, the National Reading Panel (NRP) published findings of their review of over 100,000 studies related to the skills embedded in learning to read. Given language proficiency variables, no studies addressing 'what works' for ELLs and MLs were included in this meta-analysis.

Nevertheless, the NRP report specified six areas of knowledge deemed essential for learning to read. Educators commonly see this 'Big 6' labeled as phonological awareness, phonics, vocabulary, fluency, comprehension, and oral language.

Exclusion of ELLs and MLs in the initial NRP report prompted a call to review available research that included students learning to read in a second or additional language.

Published in 2006, the National Reading Panel on Language Minority Children concluded that the 'Big 6' skills and competencies of literacy were also important for ELLs and MLs with key differences and considerations. Despite identification of caveats, attention to critical considerations for ELLs and MLs remains lacking in much of the material and guidance provided teachers to this day (Ludwig et al., 2019; Sassi, 2024).

As noted by Hoover, Baca & Klingner (2016), *'Most commercially produced curricula in the United States are created to meet the needs of middle-class native English speakers. They are designed based on assumptions about the cultural and linguistic knowledge this demographic of student brings to the instructional situation.'* (p. 85)

Big 6 Skills and Competencies

01 Phonological Awareness
02 Phonics
03 Vocabulary
04 Fluency
05 Comprehension
06 Oral Language

Phonological Awareness

01

Phonological Awareness

Monolingual English Assumptions
Learning to hear, blend, segment, and manipulate sounds can be taught and practiced outside of meaningful speech. Connections to meaning will occur automatically when decoding develops. Sound and syllable patterns practiced are familiar to English speakers (Pawlicka, 2012; Zoubek, 2016).

ELL and ML Considerations/Realities
Unlike students who have been processing English since birth, ELL and ML students are not able to automatically picture the meaning of a word upon hearing it. For example, monolingual English students barely need to finish hearing the sounds 'p--l--ae--n--t' before mentally hearing the word and conjuring a picture of a 'plant'. Each child's image likely differs but there's usually a snap connection with plant. What happens when the word presented is 'k--ee—t—ah--b'?

Such sound strings will either 'click' with a known word or reside only within the surface memory for a matter of seconds (Matchett & Burns,2009).

Sample Instructional Strategy

- Develop a bank of words the student is known to express.
  - This can be achieved by quickly presenting the student pictures from a deck.
  - Words spontaneously used to label pictures can be assumed to be within the students phonological / semantic assets.
  - These words (in either L1 or L2) will more reliably probe skills such as sound blending and manipulations of speech sounds in words.

Phonics

02

Phonics

Monolingual English Assumptions
Instruction typically involves pairing speech sounds with print symbols. Most curricula provide key words with pictures to help students associate sounds with letters, for example: ***A is for apple, 'a' 'a' 'a'***

Decodable texts are structured to increase students' experiences with targeted phonics patterns. Decodable texts are engineered to control complexity and include higher rates of words with the target pattern than would typically occur in natural interaction or any form of narrative, expository text (Gonzales & Tejero, 2021; Hall et al., 2019).

ELL and ML Considerations/Realities
ELL and ML students are frequently taxed with learning 'the new word' in addition to symbol association.

Bilingual students also activate L1 and L2 knowledge jointly at the phonemic level. When this student sees the picture of an apple, their mind may think of /m/ for 'manzana' or /t/ for 'tufaha' instead of, or in addition to, /a/ for 'apple'.

Decodable texts permit practice with decoding. For ELL and ML students, lack of context and natural syntax add little to acquisition of English for meaningful purposes and may foster habits of reading without attention to meaning (Parker et al., 2022; Share, 2021). .

Sample Instructional Strategies

- Invite and elicit examples of student/family words that begin with the target sound.
- Have the student or family provide/draw pictures of the association if the spoken word matches the targeted sound.
- Use these referents to reinforce the sound being associated with the grapheme or pattern of English phonics.
- Classmates who are not ELL or ML also benefit by discrimination and affirmation of the sound associated with phonic's target (Cardenas-Hagan, 2020).

Vocabulary

03

Vocabulary

Monolingual English Assumptions
Measures of word knowledge are normed on English speakers and how words are learned in that language. The more words a student knows, the more attachments can be made to new words and concepts.

Targeted vocabulary can be taught explicitly, but the majority grows through oral, social, and print interactions with language. Monolingual English speakers are advantaged over ELLs and MLs when only English words are counted as 'vocabulary' (Frates et al., 2022).

ELL and ML Considerations/Realities
First learned words differ by culture, language, and home. Because words are tools, children exposed to two (or more) languages avoid redundancy in early word learning.

They will often know words in one language that they may not know in the other, and vice versa.

Lower scores on tests designed for monolinguals can further disadvantage ELLs and MLs by relegating them to less rich, limited scope, structured programming to 'teach' vocabulary (August et al., 2005; Zeng et al., 2025).

Sample Instructional Strategies

- Proactively assume that students' vocabulary assets are represented across languages and settings.
- Words are like Velcro hooks, poised to attach new forms in either language.
- Ask students to say or draw associations they have with the ideas, events or objects featured in the lesson or story.
- This helps ELL and ML students affirm and recruit related knowledge from experiences and language use outside of school (MacLeod et al., 2019).

Fluency

04

Fluency

Monolingual English Assumptions
Reading fluency correlates to reading comprehension. Print words and passages must be decoded and processed at a rate that allows maximal comprehension.

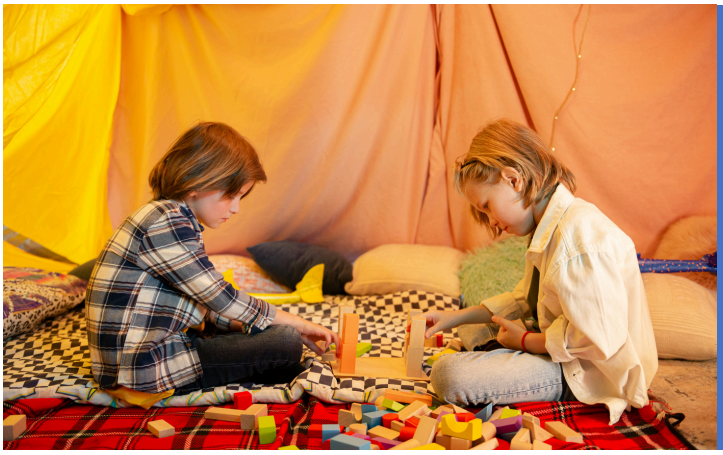
Decoding that is too laborious or slow interferes with comprehension. Benchmarks for optimal rate (words read correctly per minute) are used to determine students' success toward becoming fluent readers (Weaver & Kieffer, 2021).

ELL and ML Considerations/Realities
Decoded words and passages may not trigger meaning as efficiently for ELL and ML students who must deploy additional processes (memory, translation, executive functions) to decipher the meanings of words and phrasings represented by the grammar of another language.

Benchmarks for fluency rates encourage if not 'train' many ELLs and MLs to 'read faster' than the rate of their optimal comprehension in English (Luft-Baker et al., 2022).

Sample Instructional Strategies

- Correlate fluency measures with checks for understanding.
- Emphasize that reading rate goals relate to one's ability to read with understanding.
- Add self-rating components to fluency practice which encourage monitoring and self-assessment of comprehension.
- Model adaptation to reading rate or prosody when comprehension dips (Flegal et al., 2010).



Comprehension 05

Comprehension

Monolingual English Assumptions
Text is highly reflective of oral language. For native speakers of English, the meaning of text may be largely unlocked or unzipped through efficient decoding. Language, vocabulary, syntax, and contexts are readily understood by the reader (Echevarria et al., 2006).

ELL and ML Considerations/Realities
ELLs and MLs in programs designed for English speakers will often have experienced:

- Skills-driven instruction
- Structured teaching of select words
- Less opportunity for meaningful, interactional use of language, and
- Placement in programs to remediate comprehension deficits that result from emphasis on the above.

Such experiences can ironically lessen students' access to, and acquisition of, the robust oral language needed for grade level comprehension of texts (Cotham, 2024; Haynes & Zacarian, 2010).

Sample Instructional Strategies

- Provide opportunities for students to demonstrate comprehension by showing, drawing, pointing, or reenacting what they have heard or read.
- Incorporate games that require attention to syntactic/semantic detail (e.g. Guess Who, Battleship, Twenty Questions).
- Have students sketch out key features of a story or passage. This can be done in response to hearing the story (oral listening) or a student read passage where the student acts as 'illustrator' to the page with printed words or passage.
- Sentence or passage level comprehension can also be probed and practiced by matching text choices to pictures created by a peer or teacher (Opitz et al., 2009).

Oral Language

06

Oral Language

Monolingual English Assumptions
Oral language is foundational to reading. In a language such as English, speech sounds combine to form units of meaning (words) that are elaborated upon by features, prefixes/affixes, and structures that refine meanings in ways that make sense for that language. The vast majority of children can understand and generate complex ideas using the L1 by the time they enter school.

Oral language skills also expand and deepen through exposure to the new words and expressions encountered during reading. These systems then work in tandem to build skills in every aspect of oral and print-bound language (Peña et al., 2020).

ELL and ML Considerations/Realities
As noted in preceding sections of this table, ELL and ML students will typically have well-developed language represented uniquely across the language(s) of exposure.

These skills and phases of development are cumulative over time but may not resemble monolingual speakers of either language on measures that assume single language exposure.

Screener results that inaccurately suggest deficiencies in oral language can result in assignment to classes and structures which conversely dampen access to oral language (Murphy & Evangelou, 2016).

Sample Instructional Strategies

- Embed targeted expressive skills in activities which promote authentic use of; clarification strategies (e.g. barrier games), elaboration (e.g. CLUE), narrative (journalism, storytelling), procedural (explain how) or expository (tell about) language (Huang et al., 2020).

Learning to Read While Reading to Learn

Both learning to read and reading to learn are essential elements of K-12 programs. The ways these literacy skills are approached impact educational outcomes of ELL and ML students.

Learning to Read	Reading to Learn
Develop foundational reading skills.	Develop the skills to acquire and assess content knowledge through increasingly complex print.

When approached synergistically (see Brenda in the example on the next page), the relationship between reading for meaning is embedded in every stage of skill development. Brenda will also continue to advance her decoding skills (i.e. morphology) through advanced reading of educational and self-selected texts.

Conversely, emphasis on decoding print to speech sounds and word production can result in students who appear to have learned to read yet do not fully or adequately understand the written text (see Bibi, example below).

Individual Impacts

Take, for example, the experiences of Brenda and Bibi. Both Brenda and Bibi arrive at school with unique histories and assets. They share a common home language (Spanish) but the schools they attend represent differing interpretations of the straightest path to skilled reading in English.

	Brenda	Bibi
Pedagogical Premise	*Reading to Learn is concurrent and reciprocal with Learning to Read*	*Learning to Read precedes Reading to Learn*
K	Brenda follows imitative phonemic awareness activities in English. She can isolate initial sounds in Spanish words and blend spoken syllables to form familiar words. Brenda refers to her personal alphabet book or class generated posters to isolate initial sounds and determine the first letter in English words. She independently writes letters and letter strings to label and describe pictures.	Bibi follows imitative phonemic awareness activities in English. She can isolate and imitate the initial sound of CVC words with a model. Bibi can name 4 letters and tell their sounds. She correctly points to 8 letters but struggles with sounds. Sometimes the sounds Bibi says are not even close (as in 'mmm' for the letter A.) She has been referred to check hearing.
Grade 1	Brenda did not meet benchmark for naming English letters and sounds. Informal probes demonstrate however that she points to print letters accompanying sounds in familiar English words with 90% accuracy. In Spanish, Brenda can read syllable cards and assemble them to create multisyllabic words. She loves to draw and spontaneously labels features that she wants the viewer to notice most.	Bibi is speaking more with classmates but did not meet the screening benchmark for naming English letters and sounds. Bibi has difficulty remembering the names of pictures on the sound wall. She works with a paraprofessional or teaching assistant to memorize the pictures and their accompanying sounds.
Grade 2	Brenda did not meet benchmark for reading fluency in English but shows comprehension of what she reads by correctly matching phrases and sentences to pictures.	Bibi can decode CVC and CCVC words with 80% accuracy. She struggles with naming and applying rules that change pronunciation of vowels. Bibi receives small group paraprofessional support during ELA to help her learn phonics.
Grade 3	Brenda can read an English passage with 98% accuracy. Fluency rate is below benchmark. Informal assessments of L1 proficiency indicate that English reading comprehension is on par with grade level peers.	Stand-alone ENL time is used to double dose decoding and fluency with decodable texts.
Grade 4	Brenda reads grade-level BRIEF books. She can discuss and compare genre and authors' purpose.	Decoding and accuracy have improved but remain below grade level. Teacher concerns have shifted to comprehension.
Grade 5	Screener data shows significant growth in vocabulary. Brenda occasionally mispronounces words learned from reading but uses them correctly in context.	Bibi's difficulties may be due to 'low language' or learning disability. She receives small group instruction for comprehension and vocabulary in addition to tiered level of support as evident in RtI/MTSS-I.

	Brenda	Bibi
Pedagogical Premise	*Reading to Learn is concurrent and reciprocal with Learning to Read*	*Learning to Read precedes Reading to Learn*
6	Brenda participates in ELA enrichment during RtI or tiered levels of support. She enjoys reading e-books at home.	Bibi describes herself as speaking mostly English but not understanding everything in class.
Grade 7-8	Brenda is achieving well with grade level content and texts. She created a graphic novel/novella for her 8th grade project.	Bibi is doing well with sheltered content courses offered for Long Term English Learners. She loves National Geographic resources and talking about science.
Grade 9-10	Brenda successfully participates in and meets criteria to pass honors English and Social Studies. She does not participate in extracurricular activities due to employment after school.	Bibi learns quickly during application-based courses. She shows detailed recall for steps during hands-on processes such as culinary arts, and biology lab. Poor written products and test performance requires Bibi to retake biology before enrolling in another science.
Grade 11	Brenda plans to attend college and is on track to receive the Seal of Biliteracy when she graduates next year.	Bibi receives extra support during advisory period. She will pass biology with a C but is not approved to take another science. Bibi will need to attend summer school to improve reading and writing skills in order to graduate next year.

Systemic Impacts

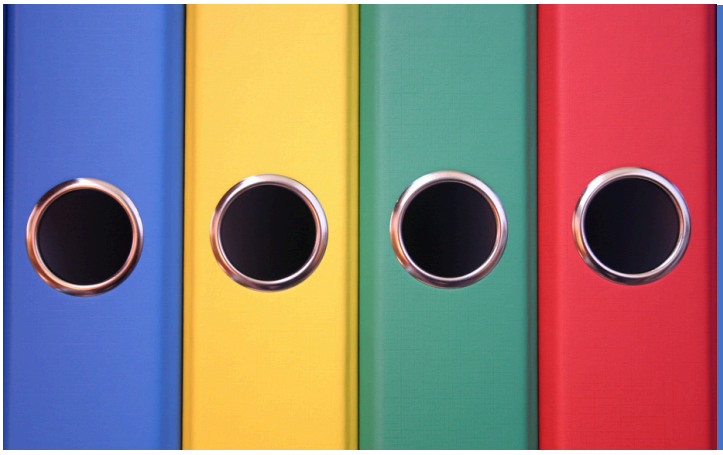
Bibi and Brenda are individuals sharing instructional settings and experiences with peers. School- or system-wide data may be telling us that our:

- instructional methods and programming need revision,
- multiple methods of assessment are needed to measure what our students know, and/or
- interventions have become educational tracks rather than fluid responsive supports (Hoover & Tunmer, 2022).

The data may also indicate that:

- connection to student words/sounds can hasten the acquisition of phonics,
- vocabulary and reading grow through all reading, and
- meaningful interaction with print at every level will result in fewer students struggling to comprehend what they read in the secondary years (Richards-Tutor et al., 2016).

For data to inform practice and outcomes it must be viewed as more than a measure of students' potentials and proficiencies. These students are, however, the proverbial canaries in the coal mine of learning to read. Delayed benchmarks, or early skill development that doesn't correlate with text comprehension are a telltale sign of insufficiently breathable, unsustainable air. What is missing from our reading program, curricula, and methods? Are there components or practices which disconnect or constrain ELLs' and MLs' access to robust literacies?



Reflect and Apply

Reflect and Apply

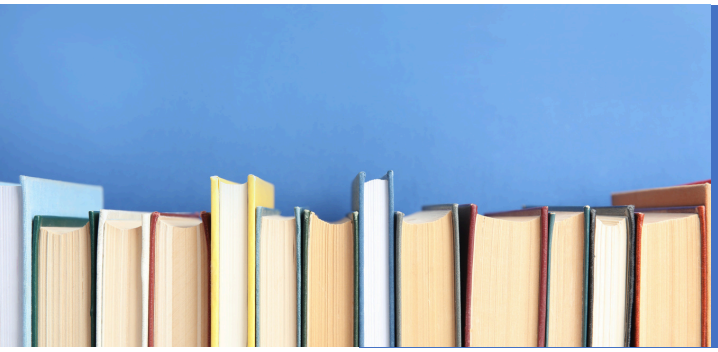
- How can screener data inform and misinform our sense of the effectiveness of literacy curricula/programs used with ELL and ML students in our school(s)?

- Why is it particularly important for ELLs and MLs that meaning connections occur throughout all stages of learning to read?

- Discuss the pros and cons of structured instructional settings on ELL and ML students':
  - access to rich oral language models
  - access to grade level curricula, and
  - exposure to the vocabulary breadth and depth needed to support skilled reading.

- What does the data in my school/district indicate about our current implementation of SoR to support ELL and ML students' successful attainment of school and life goals?

- What plan does your school or district have to address teaching literacy to ELLs and MLs? Upon reflection of the information shared in this document, what, if any, any changes should be made to improve support for these students?



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