

The Intersection of the Science of Reading and Biliteracy Development via 4 Instructional Spaces

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In recent years there has been a huge momentum shift in education regarding “the Science of Reading.” We would like to provide dual language bilingual education (DLBE) teachers practical information to address the use of the Science of Reading for their multilingual students learning in English and Spanish using the framework of 4 instructional Spaces (see Figure 1).

The Science of Reading

The Science of Reading is built on Scarborough's Reading Rope (2001), an image that envisions skilled reading as the fluent execution and coordination of word recognition and language comprehension skills. English reading's critical components for word recognition include phonological awareness, decoding, and sight recognition. Language comprehension includes background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge. Since Scarborough's Reading Rope was developed with only English in mind, DLBE educators must consider how well each component reflects the development of skilled reading in languages other than English. The language comprehension strand of background knowledge, vocabulary, language structures, verbal reasoning, and literacy knowledge can all be developed by a focus on oracy: the specific subset of oral language skills that more closely relate to literacy objectives (Escamilla et al. 2014).

The Development of Oracy

The three components of oracy development that make up the subset of skills and strategies are: language structures, vocabulary, and dialogue. These three components are clearly represented in Scarborough's Language Comprehension strand and are critical in both the *English and the Partner Language Spaces* (see Figure 1) for multilingual learners. In each space, students must be given ample opportunities to express their ideas and complete instructional tasks, both orally and in writing. Clear connections must be made between the students' prior knowledge and the new information shared with them. Vocabulary must be continuously broadened and more complex grammatical structures must be introduced and practiced. Students' literacy knowledge must be addressed by exposing them to various genres, concepts of print, and providing many opportunities to engage with fiction and nonfiction selections through class discussions and small-group dialogue.

Figure 1 depicts the Partner Language (Spanish) and English Space anchored in appropriate grade-level standards with the intentional use of scaffolds (e.g., sentence frames, OCDE Project GLAD®'s input charts). Multiple structured peer collaboration strategies are used to provide students with many opportunities to practice and rehearse the target language with classmates. Teachers encourage students to translanguage - utilize their entire linguistic repertoire to develop key understanding. This approach empowers students to process content

delivered in the target language using any language practices that they need to make sense of the information, while still guiding students to ultimately produce using the target language.

In both the English and the Partner Language spaces, activities and experiences that support students' development of oracy are similar. The difference lies in the need for scaffolds that specifically target a highly diverse population of multilingual learners, regardless of the fact that they speak the same home language. For example, Spanish is spoken in 21 different countries with very different cultures, influences, traditions, and lifestyles. Differences in the type and amount of background knowledge related to a topic can vary. It is essential that teachers take the time to develop shared experiences with their classes so that all of the students approach new information with similar background knowledge.

Teachers must also be aware of students' bilingual profiles; those identified as English learners might have WIDA ACCESS scores and should also have proficiency levels derived from language-specific assessments such as Avant's STAMP Language Proficiency Test in Spanish. Careful examination of the scores beyond the single composite score can yield valuable information concerning the student's understanding and use of more complex grammatical structures and vocabulary. An analysis may point to the need for intentional practice in language functions, such as describing, defining, or comparing, or in complex syntax, such as the appropriate use of prepositions, verb tense, pronoun referents, and plurals. Beyond simply exposing students to these language features, multilingual learners require opportunities for conversations and dialogue with their classmates about academic topics that require the use of those language features during multiple exchanges. This kind of meaningful interaction allows for the practice of language structures and vocabulary that are inherent to the academic topic of the class and provide important exposure to agreeing and disagreeing in appropriate ways, stating and defending an opinion, answering questions, and otherwise articulating their own thinking.

Early Reading Instruction - English and Spanish Spaces

While the Language Comprehension strand of Scarborough's rope (along with critical scaffolds) is equally adaptable to both language spaces, the Word Recognition strand takes on a very different look in the English and Partner Language spaces. Using Spanish as the partner language, the reason for these differences lies in the orthography of each language. While both English and Spanish are alphabetic languages, using almost identical letters in the visual representation of the language, English is considered to have an opaque orthography, while Spanish has a transparent orthography. What does this mean? English includes many letters and letter combinations that have multiple sounds. For example, the *-ough* in the word through, in the word though, and in the word tough all represent different sounds. There are also 14 vowel/vowel sound combinations with different pronunciations for the same spelling pattern in English. This reality underscores the importance of the phonological awareness and decoding skills that represent the bulk of the Word Recognition strand and the focus of some teacher professional development programs. This kind of phonic-centric training suggests extended instructional time for students to master these very specific skills, often to the exclusion of the English-language comprehension activities and specific scaffolds that multilingual learners need in order to become fluent, successful readers and writers. This

extended time for phonics and decoding also limits the time DLBE teachers have to address literacy development in the partner language. There is only so much time in an instructional day!

The Spanish language has a more transparent orthography with most letters representing only one sound. This fact shifts the focus of early reading instruction from a more phonic-centric approach to a focus on the regularities of the letter-sound relationship and syllabic boundaries of the language. Instruction in the Spanish-speaking world often begins with teaching vowels, which make only one sound, then consonants and combining them into simple syllables (ma, me, mi, mo, mu). This leads to the identification of words that begin with the syllables learned (mano, masa, malo). The syllable, therefore, is a more important unit of phonological awareness in Spanish than it is in English. Spelling instruction is integrated into learning to read syllabically and is achieved through extensive reading and vocabulary development, rather than formal instruction in letter names and spelling. Students learning to read in Spanish move quickly to writing as a way to develop a deeper understanding of letter-sound association.

Recognizing where English and Spanish language pedagogy intersect is of critical importance to DLBE teachers. Of equal importance is recognizing and understanding the methods and approaches that respond to language-specific features of the two languages and developing strategies and activities to honor each language in its own right.

Culturally and Linguistically Responsive (CLR) Classroom Environment

The foundational CLR Environment is not considered in Scarborough's Reading Rope, despite the extensive research on the importance of creating environments of belonging and connection for students to engage and thrive (<https://learningpolicyinstitute.org/topic/whole-child-education>). The CLR space depicted in Figure 1, encompasses the third goal of DLBE - socio-cultural competency. Every student who walks into the classroom must feel validated and affirmed. The teacher commits to understanding the many facets of their students' identities through an asset lens and works to ensure that students see themselves, their values, traditions, and experiences in the curriculum and as a window into learning about and appreciating other cultures. Units of study are therefore expanded to include a more multicultural approach in which big ideas are studied with an eye toward developing student's critical consciousness. There is equity of voice (e.g., using name sticks to call on students) and data is gathered regarding students' proficiency and skill development in both program languages, as well as state/district mandated assessments, in-class assessments, and anecdotal records. This kind of holistic assessment system is reflected in the work on monitoring trajectories for biliteracy in reading and writing that Escamilla et. al (2014) have done, as well as the *Bilingual Classroom Profile* that Garcia et. al (2017) present.

DLBE educators have to develop a critical consciousness to dig deeper in order to understand student issues that may arise. Their instructional pedagogy, therefore, would include the understanding that all of the languages in their students' linguistic repertoires are equally critical to the development of bilingualism and biliteracy, not just in the service of English literacy.

Bringing the Two Languages Together

The space to bring the two languages together is also not anchored in any Science of Reading research and is not represented in any way in Scarborough's Rope. The research base does not acknowledge the critical role that metalinguistic awareness and socio-cultural awareness plays in biliteracy development. The original focus is on English-speaking students learning to read in English. Therefore, DLBE teachers must design lessons that facilitate students' authentic discovery of similarities and differences between English and the partner language, as well as further develop their students' multilingual identities when intentionally bringing the two languages together.

In the Space to Bring Languages Together depicted in Figure 1, for the metalinguistic purpose, Karen Beeman and Cheryl Urow's *The Bridge* (2013) and Literacy Squared®'s (Escamilla et al., 2014) *Así se dice* strategies, provide students the opportunity to analyze and compare languages. For the socio-cultural purpose, a Project GLAD® "Home-School Connection" assignment, where student's discuss content they are learning with their families using whatever languaging practices are used at their homes - intentionally encouraging translanguaging. This kind of activity build's cross-cultural respect and sensitivity and celebrates similarities and differences in the classroom community. A more extensive activity for the sociocultural context in this space might be having students write a "I Am/Yo Soy" poem, where they draw on their lived experiences as multilinguals and create a translanguaging text.

Conclusion

In summary, Figure 1 depicts the intersection of the Science of Reading and biliteracy development, as discussed above. Biliteracy development and English literacy development for multilingual learners is complex. They both require an understanding of the needs of students learning in a second language, bilingualism, and an awareness of the unique features of each language. It is not appropriate to try to force monolingual research and approaches on our multilingual learner student population or on the committed teachers who serve them. There is a better way; the DLBE community has vast knowledge about the intersection of the Science of Reading and biliteracy instruction and should be honored.

Figure 1: 4 Instructional Spaces

