USING Understanding by Design IN THE Culturally and Linguistically Diverse CLASSROOM

AMY J. HEINEKE & JAY McTIGHE

ASCD®
1703 N. Beauregard St. • Alexandria, VA 22311-1714 USA
Phone: 800-933-2723 or 703-578-9600 • Fax: 703-575-5400
Website: www.ascd.org • E-mail: member@ascd.org
Author guidelines: www.ascd.org/write

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Introduction

The Understanding by Design® framework (UbD® framework) has become widely used for curricular and instructional design in educational settings across the globe. Flexible by nature to promote purposeful thinking about curricular planning, the UbD framework focuses instruction on the development and deepening of understandings to promote the transfer of learning to both educational and real-world settings and performances. Rather than relying on textbooks and disjointed activities to transmit information to students, teachers plan instruction using a three-stage backward design process that begins with establishing long-term goals, followed by the crafting of authentic assessments and learning trajectories for students to successfully achieve those goals. In the last two decades, practitioners have used the UbD framework to transform teaching and learning—setting aside scripted curricula to instead design their own units of study to facilitate student learning in meaningful and authentic ways.

At the same time that educators have undertaken these pedagogical shifts promoting deeper learning and understanding, demographic shifts have changed the faces of students in classrooms and schools. Fueled by globalization and immigration, previously homogenous communities around the world now serve as homes to increasingly diverse populations. Typically with scant preparation, practitioners have found themselves teaching large and growing numbers of students who are *culturally and linguistically diverse* (CLD), an umbrella term used to capture a heterogeneous population of learners who use a language or language variety other than Standard English at home. These changes have led to the all-important question: How can educators best serve and support CLD students in schools and classrooms?

Stakeholders have struggled to respond to this question and changing reality, and the result has often been inequitable educational practices and outcomes for CLD students. We consistently see schools characterized by silos, where students are placed or pulled into separate classrooms apart from their so-called mainstream peers to focus on skill-based language curricula. Even in schools where teachers collectively embrace their roles in fostering all students' learning and language development, instructional considerations for CLD students are often characterized by one-size-fits-all strategies, after-the-fact lesson modifications, watered-down curriculum, and lowered expectations for learning. This is due not to the teachers, but to the larger educational system that has systemically limited CLD students' access to rigorous, grade-level teaching and learning.

Recent shifts in policy have resulted in stakeholders rethinking these previous approaches, leading to developments such as the New Standards formulated by the National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO). With increasingly rigorous expectations for disciplinary learning and language use spanning kindergarten through 12th grade (K–12), as outlined in the Common Core State Standards for English Language Arts and Mathematics, the Next Generation Science Standards, and the C3 Social Studies State Standards, educators have negotiated how to carry out instruction that meets the needs of all learners. Fortunately, there is a growing consensus that CLD students must engage in grade-level academic learning and develop language throughout a school day to stay on pace with long-term expectations. Nonetheless, this is easier said than done, particularly within the institutionalized structures that have long limited CLD students' equitable access to rigorous instruction.

This book provides a means to respond to these challenges faced by practitioners and educational stakeholders. By focusing on UbD for CLD students, we merge the widely used UbD framework for rigorous and authentic instruction with principles and effective practices to promote students' learning and language development in culturally and linguistically diverse classrooms. Our goals are twofold: (1) to provide CLD students with equitable access to rigorous curriculum and high-quality instruction and (2) to support simultaneous language development and disciplinary learning. We achieve these goals by purposefully integrating and maintaining an explicit lens on language throughout the instructional design process, rather than inserting one-size-fits-all strategies or after-the-fact modifications. This inclusive and holistic approach to instructional design applies in every educational setting, in recognition of the pertinence of language in all learning and the need to focus on its development throughout the school day and beyond.

How This Book Is Organized

Part I of this book provides readers with the foundations for understanding backward design and the role of language in learning and instruction. Chapter 1 provides an overview of the UbD framework, including its overarching principles of learning and understanding and its three stages of curricular design that prompt practitioners to set goals, gather evidence, and plan instruction. Chapter 2 lays the groundwork for readers to grapple with the complexity of language and to understand how it develops as a part of disciplinary learning and instruction. Chapter 3 begins the application of the language lens to the UbD framework by considering how culturally and linguistically responsive practice can inform instructional planning. Teachers probe the nuanced backgrounds and abilities of

students within the various labels ascribed in schools as a way to begin instructional design that taps into students' strengths and needs.

Part II adds the lens on language development to the three stages of UbD instructional design at the unit level. Chapter 4 explores Stage 1, in which teachers determine end goals by considering the discipline-specific language functions and features needed to engage in unit learning. Chapter 5 delves into Stage 2, which prompts curriculum designers to design culturally and linguistically responsive assessments to measure students' progress toward goals. Chapter 6 fleshes out Stage 3, in which practitioners plan learning trajectories to support students in reaching goals for disciplinary learning and language development. Student vignettes frame each chapter to illustrate how classroom diversity requires responsive and rigorous instruction. After reviewing the key aspects of UbD for each stage, we explore and demonstrate how to add the language lens throughout instructional design. We then summarize key steps for classroom application and provide snapshots of teachers' backward design and implementation of rigorous and meaningful instruction to support students' learning and language development.

Part III extends beyond unit planning to consider how UbD can be used to support students in daily practice in diverse classrooms and schools. Chapter 7 hones in on daily work in classrooms to probe how backward design can bolster language development at the lesson level. We explore how to create classroom environments that purposefully build community among learners, authentically promote communication and collaboration, and consistently scaffold for language development. Practitioners also learn how to plan daily lessons using backward design to set rigorous goals for content and language learning, design engaging and interactive instruction, and check for understanding and progress toward goals. Chapter 8 pans out to the school level to consider how the UbD framework with a language lens can be used to influence students' long-term achievement across classrooms, disciplines, and grade levels. We pull together key ideas from throughout the book to provide actionable steps that stakeholders can take to implement UbD in effective ways across schools.

3

Starting with Students: Preplanning for Language Development

CHAPTER GOALS

- **Transfer**: Educators will be able to independently use their learning to…
  - Embrace, validate, and incorporate the rich diversity of students to enhance their academic and language learning.
- **Understandings**: Educators will understand that…
  - Each individual student brings unique backgrounds, strengths, and needs into the classroom across dimensions of learning and development.
  - Instruction must build upon the linguistic and cultural resources and assets that students bring to classrooms.
- **Essential questions**: Educators will keep considering…
  - How do labels shape our perceptions of students?
  - How do students' languages influence learning?
  - What resources do students bring to classrooms?
- **Knowledge**: Educators will know…
  - The sociocultural, linguistic, cognitive, and academic dimensions of student learning and development.
  - The stages and domains of language development.
- **Skills**: Educators will be skilled at…
  - Analyzing multiple sources of data as an entry point to culturally and linguistically responsive instructional design.

Understanding and gathering information about the many facets of students' cultural and linguistic diversity is the prerequisite for planning instruction that responds to students' unique backgrounds, strengths, and needs.

Student Diversity in Classrooms and Schools

In 2014, white students ceased to be the majority in U.S. schools, dropping below 50 percent of total student enrollment for the first time in the history of contemporary American schooling (National Center for Education Statistics [NCES], 2015a). The

population of K–12 schools has indeed shifted in recent decades (see Figure 3.1), driven by expanding globalization and increased immigration from Latin America and around the world (Suárez-Orozco & Suárez-Orozco, 2006). With more and more people from every corner of the globe migrating to the United States, as well as to other countries such as Canada, France, Germany, and the United Kingdom, cultural and linguistic diversity has grown rapidly. In the United States, one in five people speak a *language other than English* (LOTE) at home, with more than 350 different languages represented in households across the country (American Community Survey, 2015). This heterogeneity emerges most noticeably in classrooms and schools, where urban, suburban, and rural educators seek to support the learning, development, and achievement of students with varied and unique backgrounds, strengths, and needs (Herrera, 2016; Wrigley, 2000).

Figure 3.1 | Enrollment in K–12 Schools by Race

Census Category	1995	2015
White	64.8%	49.3%
Black	16.8%	15.6%
Hispanic	13.5%	25.9%
Asian/Pacific Islander	3.7%	5.3%
American Indian/Alaska Native	1.1%	1.0%
Two or more races	n/a	2.9%

Sources: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "State Nonfiscal Survey of Public Elementary and Secondary Education," 1995-96 through 2011-12; and National Elementary and Secondary Enrollment Projection Model, 1972 through 2023.

Here we introduce two students, Zaia and Lorenzo. They, along with other children and adolescents who will be featured throughout this book, represent the large and growing population of CLD students.

Zaia, 3rd Grader

Born and raised in a culturally and linguistically diverse urban neighborhood, Zaia grew up speaking Assyrian and Arabic, as well as reading and writing in Arabic. Her parents came to the United States as adolescents, escaping the conflict in their homeland of Iraq. After meeting, settling, and marrying, they opened a small business in the main commercial region of the community. Zaia spent a lot

of time at the store, where primarily Middle Eastern families came to rent movies and video games, send and receive wire transfers, use the fee-based Internet services, and socialize with one another. When she was as young as 3 years old, she interacted and supported business transactions in both Assyrian and Arabic, able to switch back and forth flawlessly between languages depending on customers' linguistic preferences. Due to the family's strong Christian faith, weekends included religious services in the Assyrian community. When Zaia turned 5, her parents enrolled her at the neighborhood primary school, with predominantly Spanish-speaking students, as well as children speaking different African languages. In a self-contained kindergarten classroom of diverse students with families from around the globe, she began learning English as her third language. After two years of schooling, her 2nd grade teacher recognized her advanced intellect and referred her for gifted services. Now in 3rd grade and labeled both as gifted and as an English learner (EL), Zaia loves learning through inquiry projects that use her rich resources from home, community, and school.

Lorenzo, 12th Grader

Born and raised in a midsize industrial town in the United States, Lorenzo has been enrolled in general education classes at school since kindergarten. Now a senior in high school, he looks forward to enrolling at the local community college while he continues to work at his father's small business. A roofer by trade, his father established his own contracting company when Lorenzo was 10 years old, encouraging the boy to help with both construction and administrative tasks that became more demanding as he got older. When he isn't in school or working, Lorenzo enjoys making his own music and playing baseball. His music is a unique mix of his biracial identity and community surroundings, where he aims to tell stories through hip-hop that include both the African American Vernacular English spoken by his father, coworkers, and friends, as well as the Chicano English spoken by his mother's extended family, whom he visits on weekends. Growing up in a predominantly African American neighborhood and spending the majority of the time with his father, Lorenzo had self-identified as African American for most of his childhood. After making the high school baseball team, his social circle extended to include a number of his Mexican American teammates, and he began to explore more of his Latino identity. Following high school graduation, Lorenzo plans to travel with his mother to Guerrero, Mexico, as well as enroll in Spanish classes at the community college.

Responsive Pedagogy and Practice

With the increasing diversity in schools, many practitioners have embraced *culturally responsive pedagogy* to improve the educational experiences and outcomes of students from diverse backgrounds. Rather than provide students with

one-size-fits-all curricula, this approach to teaching recognizes the need to facilitate learning and development that align with and tap into students' cultural backgrounds, knowledge, and experiences. Geneva Gay (2010) defines culturally responsive pedagogy as instruction that validates and incorporates "cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them" (p. 31). Because of the vast array of cultural diversity, culturally responsive pedagogy is a dynamic framework rather than a prescriptive curriculum or instructional approach, taking different shapes and forms depending on the students in the classroom. In other words, teachers use personalized knowledge of individual students' cultural backgrounds and lived experiences to shape and craft meaningful classroom instruction. When learning goals and activities are situated within students' unique and diverse experiences and perspectives, students demonstrate increased motivation, engagement, and learning (Gay, 2010; Herrera, 2016).

Narrowing the broader lens on culture and cultural diversity, *linguistically responsive teaching* emphasizes practices that specifically recognize and respond to language and linguistic diversity (Lucas & Villegas, 2010; Lucas et al., 2008). In this approach to pedagogy and practice, teachers plan instruction with an explicit lens on language development, which results in rigorous disciplinary teaching and learning that vary depending on students' language backgrounds, experiences, and proficiencies. To be linguistically responsive, educators first work to understand principles of language learning and development and recognize students' unique and diverse language backgrounds and abilities as resources for learning. Linguistically responsive instruction then explicitly attends to language demands in academic tasks and scaffolds tasks to support language development and disciplinary learning (Heritage et al., 2015; Lucas et al., 2008; Walqui & Heritage, 2012). Linguistically responsive practice spans contexts and disciplines: whether teaching literacy, mathematics, science, social studies, special areas, or electives in early childhood, elementary, secondary, or special education settings, with bilingual or monolingual mediums of instruction, *all* teachers support students' language development. See Figure 3.2 for key points of both culturally and linguistically responsive practice.

As noted earlier, this book adds an explicit lens on language to the design of instruction for disciplinary learning as outlined in the UbD framework. The overarching goal of this framework is to provide equitable access to meaningful, authentic, and rigorous learning goals and experiences by tapping into students' rich and diverse backgrounds and supporting their language development (see Figure 3.3). To accomplish this, we embed the UbD framework within the principles of culturally responsive pedagogy (Gay, 2010) and linguistically responsive teaching (Lucas et al., 2008). Thus we place CLD students at the center of

curricular design and embrace an asset-based approach by conceptualizing students' backgrounds as resources for learning. Our framework differs from traditional approaches, in which students receive separate instruction apart from peers, such as ESL pull-out sessions; deficit-based accommodations, such as simplified texts and materials; or one-size-fits-all strategies within larger instructional plans, such as a differentiation box at the end of a lesson plan. To plan instruction that is culturally and linguistically responsive, teachers begin by recognizing, prioritizing, and integrating students' linguistic backgrounds, strengths, and needs.

Figure 3.2 | **Key Points of Culturally and Linguistically Responsive Practice**

Culturally Responsive Pedagogy	Linguistically Responsive Teaching
• Teaching is dynamic and flexible to reflect students' backgrounds. • Facilitation of learning taps into background knowledge and experiences. • Teachers shape and craft instruction to align with students' backgrounds. • Goal is to make learning more relevant, engaging, and effective for students.	• Teaching is grounded in theoretical principles of language learning and development. • Facilitation of learning taps into language backgrounds and proficiencies. • Teachers attend to language demands and scaffold instruction by language proficiency. • Goal is to promote disciplinary learning and language development for students.

Sources: Based on *Culturally Responsive Teaching: Theory, Research, and Practice* (2nd ed.), by Geneva Gay, 2010, New York: Teachers College Press; and "Linguistically Responsive Teacher Education: Preparing Classroom Teachers to Teach English Language Learners," by T. Lucas, A. M. Villegas, and M. Freedson-Gonzalez, 2008, *Journal of Teacher Education*, *59*(4), 361–373.

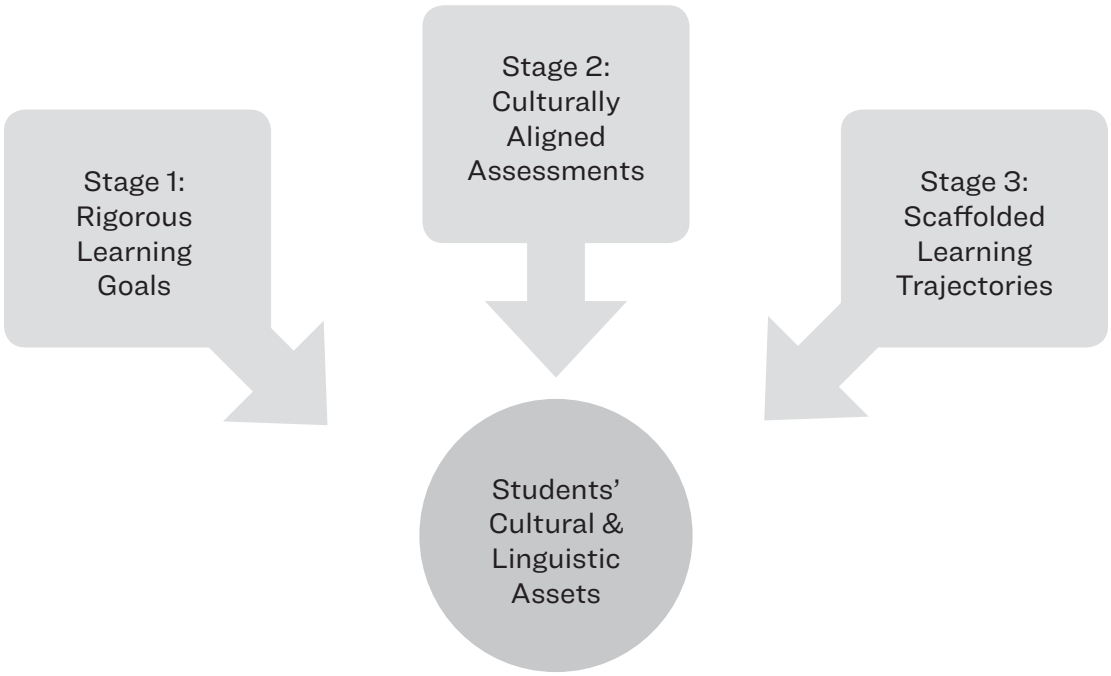
The upcoming sections of this chapter, organized to explore the myriad nuances of language development and cultural backgrounds, lay the groundwork for pertinent preplanning steps that precede the drafting of UbD units of instruction. We begin by looking within the labels commonly used by educators in classrooms, schools, and districts.

Looking Within Labels: Language Development and Today's Students

In our discussion throughout this book of instructional design for *CLD students*, we use that terminology strategically because of its wide reach across multiple facets of diversity. Whereas many labels specify ethnicity (e.g., Latino), country of origin (e.g., Romanian), circumstances of immigration (e.g., newcomer), cultural background (e.g., Mexican American), native language (e.g., Spanish-speaking), or second language (e.g., English learner), the term *CLD* encompasses learners more broadly to capture those who do not fall into what has been referred to as

mainstream: U.S.-born, white, and English-speaking. Other formal educational terms and labels used frequently in instructional design fall under this umbrella, specifically those focused on various facets of language, linguistic diversity, and language learning.

Figure 3.3 | **Critical Components of Instructional Planning**



Bilingual Students

Approximately 10 million students in the United States speak a language other than English (LOTE), making up 20 percent of school-aged children nationwide (American Community Survey, 2015). Approximately half of these students enter schools as proficient (or fluent) in both English and another language, meaning they are *bilingual,* with backgrounds and abilities in two languages. Although schools typically do not have formal labels to capture the bilingualism of students, scholarly literature provides important terminology to better conceptualize students with abilities in a LOTE. For example, children raised learning two languages concurrently are referred to as *simultaneous bilinguals,* whereas *sequential bilinguals* first develop their home language and then

learn a second language, typically in school. Although the demographics of bilingual learners typically center on students from nonnative English backgrounds, seemingly dominant English users can also be considered bilingual, including those raised in simultaneous bilingual homes or others participating in long-term, dual-language education programs. We must also expand our terminology to include *multilingual students*, like 3rd grader Zaia, introduced earlier, who are proficient in multiple languages (de Jong, 2011).

English Learners

Of the larger population of students who speak a LOTE, approximately half are labeled as *English learners* (ELs), comprising around 4.6 million learners, or 9.1 percent of the U.S. student population (NCES, 2017). Similar to the label for bilingual students, the EL label includes many different linguistic backgrounds (see Figure 3.4), including Spanish, Arabic, Chinese, English varieties, and Vietnamese (NCES, 2015). Synonymous with *English language learner* (ELL), this terminology specifies those students who have not yet demonstrated English proficiency as measured by standardized tests of listening, speaking, reading, and writing (Linquanti & Cook, 2013). Although *EL* has become the preferred term in most settings, teachers may be familiar with the *limited English proficient* (LEP) label, which emerged through No Child Left Behind despite criticism because of the deficit-based emphasis on a student's limitations in acquiring the nonnative language (English). Students who had not yet passed standardized language tests received the LEP label, whereas students who had recently passed were reclassified as *fluent English proficient* (FEP). In contrast to the deficit lens of LEP, *emergent bilingual* is a relatively new label that is becoming popular among scholars and educators because of its asset-based discourse (Garcia, 2009b): *emergent* implies that the student is still learning English, but in so doing is becoming *bilingual* because of already existing abilities in his or her native language.

Newcomers and Long-Term English Learners

While ample heterogeneity exists within the formal EL label, which we explore in upcoming sections, additional labels attempt to differentiate the unique needs of learners based on time spent in U.S. schools. On the early end of the temporal spectrum, *newcomers* are those students who have just enrolled and begun formal, school-based language learning in EL or bilingual programming. Identified with the label commonly ascribed to recent immigrants and refugees, newcomers typically do not speak English and are developing familiarity with cultural norms and school expectations (Cohen & Daniel, 2013). Whereas the *newcomer* label calls attention to recent entrants, the formal classification of *long-term English learner* (LTEL) refers to a student who has been enrolled in English-medium schools and labeled as an EL for an extended period of time,

normally six or seven years (Menken & Kleyn, 2009; Olsen, 2014). Typically enrolled in middle and high schools, LTELs are often orally bilingual and sound proficient in English, but they struggle with native language and academic literacy skills (Menken & Kleyn, 2009). Although both newcomers and LTELs fall within the same overarching *EL* label, they have widely divergent learning needs that must be accounted for when designing and implementing instruction.

Figure 3.4 | **Top 10 Home Languages of English Learners in U.S. Schools in 2015**

Home Language	Number of ELs	Percentage of Total ELs
Spanish/Castilian	3,770,816	76.5%
Arabic	109,170	2.2%
Chinese	107,825	2.2%
English	91,669	1.9%
Vietnamese	89,705	1.8%
Hmong	39,860	0.8%
Haitian/Haitian Creole	37,371	0.8%
Somali	34,472	0.7%
Russian	33,821	0.7%
Korean	32,445	0.7%

Sources: U.S. Department of Education, National Center for Education Statistics, EDFacts file 141, Data Group 678; Common Core of Data, "State Nonfiscal Survey of Public Elementary and Secondary Education." See *Digest of Education Statistics 2015*, table 204.27.

Students with Limited or Interrupted Formal Education

Another subgroup of ELs is organized based on formal educational experiences. A *student with limited or interrupted formal education* (SLIFE) has lacked consistent exposure to school settings for a variety of reasons depending on previous circumstances, such as living in isolated geographic locales, needing to enter the workforce, dealing with repercussions of civil strife or natural disasters, or aligning with societal expectations for school attendance (Wisconsin Center for Educational Research, 2014). SLIFE students are often newcomers, arriving as immigrants or refugees from difficult situations in varying contexts around the world. A similar label, *student with interrupted formal education* (SIFE), can also encompass students from established immigrant families, including LTELs who struggle in part due to extended breaks in school attendance to return to countries

of origin. Students with limitations or interruptions in their educational trajectories may lack literacy abilities and academic skills in native languages, as well as familiarity with the dynamics of formal schooling. Additionally, SLIFE students often have significant social and emotional needs due to traumatic events and experiences such as war, violence, and family separation.

Standard English Learners

Whereas the labels just discussed focus on users of a LOTE, the overarching population of CLD students can also include children and adolescents who speak varieties of the English language. As described in the previous chapter, language is complex and dynamic, with no single standard used across all members of a society. Language varieties and dialects exist within the same defined language (e.g., English, Spanish), with varying rules, forms, and structures spanning the linguistic components of phonology, morphology, syntax, lexicon, or semantics (LeMoine, 1999). Although English is formally considered as the home language, students' language use is influenced by ancestral linguistic structures, resulting in language varieties such as African American Vernacular English (AAVE) and Chicano English (Delpit, 2006). Nonetheless, Standard English is the consistently expected language for demonstrating mastery and achievement in schools, often without recognition of the fact that language varieties influence learning and language development (Lippi-Green, 1997). Just as EL and bilingual students' home languages play an integral role in school-based learning, nonstandard varieties of English must be recognized and tapped into as resources for instruction.

Labels such as those listed in Figure 3.5 exist in education for good reason. Within the complexity of classrooms, labels highlight students' particular learning needs. By being familiar with common labels used to describe CLD students, practitioners can ensure explicit attention to those students' abilities and needs when planning and implementing instruction. Nonetheless, the seemingly homogenous terms can mask ample heterogeneity, such as home language, language proficiencies, language varieties, and cultural backgrounds. To engage in culturally and linguistically responsive practice via UbD instructional design, teachers should first explore the diversity within labels to recognize the individual strengths and needs of students. We consider nuances of students' languages in the next section.

The Linguistic Dimension of Learning and Development

The labels in Figure 3.5 emphasize one key dimension of student learning and development: language, or what we refer to as the *linguistic dimension* (Collier & Thomas, 2007; Herrera, 2016). Looking beyond these homogenous labels commonly used in schools, we consider students' first, home, native, or dominant

language (L1) and their second language (L2) to know and use linguistic backgrounds, strengths, and needs, as well as the pertinent interconnection between students' languages and linguistic repertoires.

Figure 3.5 | **Common Labels and Corresponding Acronyms and Abbreviations**

Acronym/ Abbreviation	Label
CLD	Culturally and Linguistically Diverse
EB	Emergent Bilingual
ELL	English Language Learner
EL	English Learner
FEP	Fluent English Proficient
LEP	Limited English Proficient
LOTE	Language Other Than English
LTEL	Long-Term English Learner
SEL	Standard English Learner
SIFE	Student with Interrupted Formal Education
SLIFE	Student with Limited or Interrupted Formal Education

Native Language Abilities

Research demonstrates that students' L1 is integral to their literacy and content learning (Lindholm-Leary & Borsato, 2006). Thus it is important to know students' linguistic abilities so that teachers can tap into and develop their L1 in instruction. For the heterogeneous population of CLD students, L1 includes a vast array of formally defined languages (e.g., Spanish, English) and language varieties (e.g., Castellano, AAVE). Whereas some languages share commonalities with English, such as Indo-European languages that use similar alphabets and phonological systems (e.g., German, Spanish), others are quite distinct—such as nonalphabetic systems that use characters instead of letters (e.g., Chinese, Japanese). Regardless of similarities or differences between L1 and L2, linguistic abilities transfer across languages. Put simply, you only have to learn to listen, speak, read, or write in one language; those skills then transfer to other languages (August & Shanahan, 2008). Facilitating this transfer requires understanding of students' abilities in the L1, as well as knowledge about the language itself. In Figure 3.6 we

provide examples of the sign systems for the four primary languages spoken by students in U.S. schools—Spanish, Arabic, Chinese, and English.

Figure 3.6 | **Sign Systems of Spanish, Arabic, Chinese, and English**

Spanish *aprendizaje auténtico*	**Arabic** ئعام العةلةب
Chinese 货真价实的学习	**English** authentic learning

Spanish

The most commonly used language after English in the United States, Spanish is spoken in the homes of over three-quarters of ELs (Lipski, 2008; NCES, 2015b). Because both are Indo-European languages, Spanish and English share various features, including similar alphabets (Spanish has three additional letters: *ch, ll, ñ*), print directionality (reading and writing is done from left to right and top to bottom), and lexicon (for example, *cognates*, or words that look, sound, and mean the same across languages). Examples of key differences between Spanish and English are phonological (Spanish is highly phonetic, whereas English has multiple ways to spell various phonemes) and syntactical (for example, different rules for word order, such as noun-adjective in Spanish and adjective-noun in English). Despite millions of students sharing a common, mutually intelligible language, there are many varieties within the Spanish language in the United States. Depending on the dialect (for example, Mexican American, Puerto Rican, Cuban, Dominican, Central American), Spanish speakers may pronounce words distinctly or have entirely different words to describe the same object or action (Lipski, 2008). This complexity is further exacerbated by regional linguistic variations in both the country of origin and the United States (Zentella, 2005). Consider, for example, the differences that might be apparent in the Spanish spoken in urban Mexico City versus rural Jalisco, or the differences in English spoken in New York City versus Southern California.

Arabic

A language dating back over 2,000 years, Arabic is the L1 used throughout the Middle East and in parts of Africa. Whereas Classic Arabic is used for religious

purposes and Modern Standard Arabic is the official language of 22 countries, colloquial Arabic has various dialects depending on region (for example, the Arabian Peninsula, Iraq) and contextual factors such as education and urbanization (Versteegh, 2014). In their use of the language of the Muslim faith, people around the world have varying oral language and literacy abilities in Arabic as L1 and L2 as they engage in religious traditions (Razfar & Rumenapp, 2014). Rapid immigration from Muslim nations in recent years has further increased the use of Arabic; in U.S. schools, Arabic is the fastest-growing L1 of English learners, increasing by 68 percent in the past five years (NCES, 2015). Notably different from English is the language's sign system (see Figure 3.6), which uses the Arabic script (as do other Middle Eastern languages such as Urdu and Farsi) and is read from right to left, rather than left to right. Phonologically, vowels operate much differently than in English; whereas English is marked by complex vowel usage (e.g., short vowels, long vowels, vowel patterns, diphthongs, r-controlled vowels), Arabic's vowel system is so straightforward in oral language that vowels are not represented in writing (Razfar & Rumenapp, 2014). Thus Arabic users learning English may emphasize consonants when reading and omit vowels when writing.

Chinese

The Chinese language is complex, even prompting disagreement among linguists. For some, Chinese is conceptualized as one language with multiple dialects used in particular regions, including Mandarin (prevalent in Beijing) and Cantonese (prevalent in Hong Kong), which are the dialects most widely spoken in the United States (Kurpaska, 2010; NCES, 2015b). For others, Chinese is a family of languages, thus situating Mandarin and Cantonese (among others) as distinct languages that share a written sign system but are otherwise mutually unintelligible (Razfar & Rumenapp, 2014). Chinese is tonal, meaning that intonations distinguish between seemingly identical words; however, the various languages (or dialects) use different tones, often resulting in incomprehensibility across speakers (Sin-wai, 2016). Although Mandarin, Cantonese, and other regional varieties differ to the point that some speakers cannot orally comprehend one another, their common sign system allows for written communication. Chinese is one of the few remaining *logographic* languages: unlike alphabetic systems in which letters correspond phonetically with sounds, logographic systems use symbols (see Figure 3.6) to represent words or ideas; a helpful comparison is the use of emojis or emoticons, in which a symbol captures meaning (Razfar & Rumenapp, 2014). Due to this sign-word correspondence (rather than letter-sound correspondence), Chinese users learn tens of thousands of characters, differing significantly from phonics-based learning in U.S. schools.

English

Readers may be surprised to see English as an L1 of ELs. Possible rationales for this statistic include students living in simultaneous bilingual households (therefore English and another language are *both* considered home languages) or children born abroad and adopted into English-dominant households (McFarland, 2016). Whatever the reason, the data provide an opportunity to consider the diversity among English users, as Standard English cannot be considered the norm in every household. A prime example is AAVE, also known as *Black English* or *Ebonics*, a common dialect spoken in African American homes and communities (Perry & Delpit, 1998). Lippi-Green (1997) defines AAVE as a "functional spoken language which depends on structured variation to layer social meaning into discourse" (p. 176). AAVE is not simply a derivative of Standard English, but rather a hybrid language variety with linguistic influences from Africa, the Americas, and the Caribbean and historical origins dating back to slavery (Delpit, 2006). Thus, phonological, grammatical, and cultural variances in the language are not random but follow rules grounded in the storied African ancestry of its speakers (Lippi-Green, 1997). Similar to the languages just described, AAVE varies based on social and regional influences, such as differing vocabulary between the urban Midwest and the rural South (Lippi-Green, 1997). In sum, nonstandard varieties of English *are* home languages and should be used as resources for learning during instruction.

Focused on only four languages of the 350 spoken in homes by students and families, these nuances just scratch the surface of the heterogeneity and complexity of the linguistic landscape in the United States. Whether coming to school with oral language or literacy abilities in Bengali, Cherokee, Norwegian, Pashto, Puget Sound Salish, or Tarascan, students' L1 is an incredible asset and should be embraced and tapped into as a resource for instruction. Per federal law, U.S. schools must administer the *Home Language Survey* to collect data on all students' L1 upon enrollment. Educators can use this information as a starting point to learn more about the nuances of particular languages, as well as to support opportunities, resources, and personnel for formally and informally assessing students' L1 oral language, reading, and writing. For languages that are more common, schools should have access to assessments, texts, and individuals to discern and evaluate students' L1 abilities. For less common languages, educators can seek out web-based resources, as well as enlist the support of parents, families, and community organizations. Although assessments of students' L1 abilities are not required or commonplace in schools, the data are invaluable, allowing teachers to tap into students' linguistic strengths to support learning.

Second-Language Abilities

CLD students enter schools with abilities in their L1, which can then be used as resources to develop their L2. In the case of the United States, as well as other countries such as the United Kingdom, Canada, and Australia, L2 typically refers to English. In Chapter 2 we described theory and research related to the nuances of language in academic settings, as well as how students develop languages with discipline-specific learning. In this subsection, we put theory into practice by considering how language is used in schools, or the particular skills needed to actively engage in learning (see Figure 3.7). We also consider what learners can do across language domains (listening, speaking, reading, writing) based on levels of English proficiency. Whereas authentic learning tasks integrate all language domains, it is important to understand, recognize, and develop individuals' abilities, strengths, and needs within *receptive* language, which encompasses listening and reading, and *productive* language, which encompasses speaking and writing (O'Malley & Pierce, 1996).

Receptive language

Of the two receptive language domains—listening and reading—the latter gets the lion's share of explicit emphasis in classroom instruction. Starting in preschool and continuing through college and career, reading is central to learning. Whether reading picture books, poetry, recipes, manuals, reports, charts, maps, textbooks, letters, diaries, novels, essays, or policy documents, learners must access and comprehend written text to actively participate in instruction and develop disciplinary understandings, knowledge, and skills. Students apply knowledge of language and print—such as letters, sounds, word parts, words, sentence structures, text structures, and print directionality—to comprehend meaning, make inferences, and evaluate ideas. To accomplish this, students tap into their background knowledge and interact with the text to construct new knowledge related to the text's concepts, arguments, and ideas. Additionally, students use a variety of strategies to aid in comprehension (for example, visualization, predictions, self-monitoring), which vary depending on the myriad genres and texts spanning grades and disciplines.

Receptive oral language, or *listening*, receives less attention or overt support in classroom instruction. We often (falsely) assume listening to be a straightforward prerequisite to other language domains; however, effective listening requires ample knowledge and skills, particularly in the classroom context. Whereas reading involves comprehension of written texts, listening requires learners to make meaning of speech, which is characterized by various rates of delivery, run-on sentences, redundancies, elaborations, corrections, pauses, and colloquial language (Brown & Abeywickrama, 2010). Authentic listening involves interaction with others, thus requiring the use of nonlinguistic cues such as facial expressions, body

language, and personal proximity to aid in comprehension and performance. Similar to reading, listening requires comprehension—processing information, making meaning using background knowledge, and pulling out important ideas and concepts. In classrooms, students need to listen to extended discourse by teachers and classmates, being strategic in how they capture the ideas and information.

Figure 3.7 | **Domain-Specific Language Use in Schools**

Domain: Listening
Sample Language Skills:
- Discriminate among the distinctive sounds and stress patterns in speech.
- Process speech at different rates of delivery with varying pauses and errors.
- Infer situations, participants, and goals of speech using real-world knowledge.
- Use facial, kinesthetic, and nonverbal cues to decipher meaning.
- Use listening strategies, such as detecting key words and self-monitoring.

Domain: Speaking
Sample Language Skills:
- Monitor speech and use strategic devices (e.g., pauses, fillers, self-corrections).
- Produce speech in appropriate phrases with related pause and breath patterns.
- Use appropriate styles, registers, conventions, and conversation rules.
- Make links and connections between events, ideas, feelings, and information.
- Use speaking strategies, such as rephrasing and providing context for meaning.

Domain: Reading
Sample Language Skills:
- Distinguish among letters, letter combinations, and orthographic patterns.
- Recognize words and interpret word-order patterns and their significance.
- Recognize rhetorical conventions and communicative functions of written texts.
- Infer context that is not explicit by activating and using background knowledge.
- Use reading strategies, such as skimming and discerning meaning from context.

Domain: Writing
Sample Language Skills:
- Express meaning using different words, phrases, and grammatical forms.
- Communicate for various purposes (e.g., persuade, inform) with related form.
- Convey connections between events, such as main idea and supporting details.
- Distinguish between literal and implied meanings while writing.
- Use writing strategies, such as prewriting and using feedback for revising.

Source: Based on "Principles of Language Assessment," by H. D. Brown & P. Abeywickrama, 2010, *Language Assessment: Principles and Classroom Practices* (2nd ed., pp. 25–51), Boston: Pearson.

Although disciplinary listening and reading in classrooms can be difficult for all learners, consider the additional challenges for those who are doing so in their second language. Tune in to a Spanish-speaking radio station or browse a Japanese biology textbook, and it won't take long to empathize with CLD students who are attempting to decipher and comprehend oral and written texts in

English. Because we all use linguistic background knowledge to facilitate effective listening and speaking, it is beneficial to consider what students can do with language, including dealing with the linguistic complexity of speech and text, various language forms and conventions, and overall vocabulary usage (WIDA, 2012). Students in the early stages of acquiring English can process information via patterned sentence structures and recognizable content-related terminology. As students progress through levels of English proficiency, as illustrated in Figure 3.8, they understand more complex language at the discourse, sentence, and word/phrase levels. Being familiar with students' domain-specific abilities in listening and reading is integral to instructional planning with a language lens.

Productive language

The productive counterpart to listening, *speaking* is rarely used in isolation from other domains, which is why we usually refer to *oral language* to encompass both listening and speaking. Often used unknowingly by educators and noneducators alike, speaking abilities serve as the litmus test to gauge an individual's overall language proficiency. Consider a first encounter with a student, a coworker, or an acquaintance, which led you to make broader linguistic assumptions based on that person's speech. Because speaking is productive and is frequently used in daily interactions, we can hear the manifestations of a person's linguistic knowledge, including phonology (for example, production of sounds), syntax (for example, verb tense and agreement, pluralization, word order), and lexicon (e.g., reduced forms of words, expressions, idioms). Similar to listening, speaking requires understanding of sociolinguistic cues, rules, and expectations for oral conversation to assess comprehension and know when to interrupt, rephrase, or provide context (Brown & Abeywickrama, 2010). Speakers must produce language for a variety of social and academic purposes, with varying background knowledge depending on the topic.

Productive literacy, or *writing*, occurs in various genres and for varied purposes in instruction. We ask students to write essays, reports, stories, poems, journals, and letters, as well as less formal documents including lists, schedules, notes, forms, reminders, e-mails, and exit tickets. Writing may conjure up memories of your own schooling: learning print and cursive with appropriate penmanship, taking spelling tests, and diagraming sentences based on grammar rules. Most contemporary classrooms have embraced a more authentic approach to writing, in which students apply linguistic knowledge (e.g., of grammatical forms) and writing skills (e.g., communicating ideas) in ways that align with real-world practice, depending on the discipline. To effectively produce academic writing across the curriculum, students use their knowledge of the focal topic (such as global warming or geometry) and writing conventions (such as spelling and punctuation), and their skills related to organizing ideas (as displayed in the formatting and sequencing or grouping of ideas) and applying related strategies (such

as prewriting and revising) (O'Malley & Pierce, 1996). Learners also consider purpose, voice, and audience, and then use particular words, sentences, and discourse structures to meet their intended goals.

Figure 3.8 | **Receptive Language by Proficiency Level**

WIDA Performance Definitions—Listening and Reading, Grades K–12			
Within sociocultural contexts for processing language . . .			
	Discourse Dimension	**Sentence Dimension**	**Word/Phrase Dimension**
	Linguistic Complexity	**Language Forms and Conventions**	**Vocabulary Usage**
Level 6—Reaching Language that meets all criteria through Level 5, Bridging			
At each grade, toward the end of a given level of English language proficiency, and with instructional support, English language learners will process . . .			
Level 5 Bridging	• Rich descriptive discourse with complex sentences • Cohesive and organized related ideas	• Compound, complex grammatical constructions (e.g., multiple phrases and clauses) • A broad range of sentence patterns characteristic of particular content areas	• Technical and abstract content-area language • Words and expressions with shades of meaning across content areas
Level 4 Expanding	• Connected discourse with a variety of sentences • Expanded related ideas	• A variety of complex grammatical constructions • Sentence patterns characteristic of particular content areas	• Specific and some technical content-area language • Words or expressions with multiple meanings across content areas
Level 3 Developing	• Discourse with a series of extended sentences • Related ideas	• Compound and some complex (e.g., noun phrase, verb phrase, prepositional phrase) grammatical constructions • Sentence patterns across content areas	• Specific content language, including expressions • Words and expressions with common collocations and idioms across content areas
Level 2 Emerging	• Multiple related simple sentences • An idea with details	• Compound grammatical constructions • Repetitive phrasal and sentence patterns across content areas	• General content words and expressions, including cognates • Social and instructional words and expressions across content areas
Level 1 Entering	• Single statements or questions • An idea within words, phrases, or chunks of language	• Simple grammatical constructions (e.g., commands, Wh-questions, declaratives) • Common social and instructional forms and patterns	• General content-related words • Everyday social and instructional words and expressions

Source: Based on WIDA ELP Standards © 2007, 2012 Board of Regents of the University of Wisconsin System. WIDA is a trademark of the Board of Regents of the University of Wisconsin System. For more information on using the WIDA ELD Standards please visit the WIDA website at *www.wida.us*. Used with permission.

Instructional design should integrate ample opportunities for authentic language production, with specific attention to ELs. As illustrated in Figure 3.9, students develop speaking and writing over time, beginning with common words and patterned phrases and expanding to complex sentences with a range of grammatical structures, sentence patterns, and technical and abstract language (WIDA, 2012). It is imperative to note that ELs can produce discipline-specific language while still developing proficiency in their L2. Students should be encouraged to express ideas in L2 speaking and writing despite errors in fluency, mechanics, and conventions. In other words, correct spelling, appropriate punctuation, and flawless grammar are not prerequisites to engaging in academic tasks. ELs will make errors in productive language as they maneuver and develop their L2, often due to transfer from their L1, and their effort should be encouraged and supported. These miscues provide helpful data, opening windows into students' thought and language for educators to understand how learners are processing and producing L2 and using L1 to do so (Goodman, 1973). By considering students' domain-specific abilities, teachers can plan instruction that taps into strengths (such as speaking to support writing) and scaffolds by needs (e.g., using particular sentence patterns by discipline).

Distinct from L1, ample formal data exist in a student's L2. Per federal requirements, any student using a LOTE at home must be screened for identification, classification, and placement. For students labeled as ELs, standardized language proficiency tests are then given each academic year to monitor growth and provide snapshots of students' language abilities, strengths, and needs. For example, WIDA consortium members give the ACCESS test to students annually, which yields composite and domain-specific scores in listening, speaking, reading, and writing; these numeric scores correspond to "Can Do Descriptors," detailing what students *can do* with language depending on proficiency levels (WIDA, 2016). These data provide a starting point to understand the L2 abilities of ELs; however, practitioners need additional information to accompany the formal data collected only once per year, as well as to glean L2 data on non-ELs. Formative assessments of language across domains, as well as anecdotal data captured during authentic learning, can support the understanding of the linguistic dimension.

Bilingual and Multilingual Abilities

When home and second languages are considered as separate entities, we get only a limited sense of students' linguistic abilities. Daily discursive practices are complex and dynamic, not bound by what are considered formal languages, such as Standard English. In other words, bilingual individuals do not operate as two separate monolinguals, thinking and talking in one language at a time—for example, English at school and Spanish at home. Instead, when learning and

Figure 3.9 | **Productive Language by Proficiency Level**

WIDA Performance Definitions—Speaking and Writing, Grades K–12			
Within sociocultural contexts for language use . . .			
	Discourse Dimension	**Sentence Dimension**	**Word/Phrase Dimension**
	Linguistic Complexity	**Language Forms and Conventions**	**Vocabulary Usage**
Level 6—Reaching Language that meets all criteria through Level 5, Bridging			
At each grade, toward the end of a given level of English language proficiency, and with instructional support, English language learners will produce . . .			
Level 5 Bridging	• Multiple, complex sentences • Organized, cohesive, and coherent expression of ideas	• A variety of grammatical structures matched to purpose • A broad range of sentence patterns characteristic of particular content areas	• Technical and abstract content-area language, including content-specific collocations • Words and expressions with precise meaning across content areas
Level 4 Expanding	• Short, expanded, and some complex sentences • Organized expression of ideas with emerging cohesion	• A variety of grammatical structures • Sentence patterns characteristic of particular content areas	• Specific and some technical content-area language • Words and expressions with expressive meaning through use of collocations and idioms across content areas
Level 3 Developing	• Short and some expanded sentences with emerging complexity • Expended expression of one idea or emerging expression of multiple related ideas	• Repetitive grammatical structures with occasional variation • Sentence patterns across content areas	• Specific content language, including cognates and expressions • Words or expressions with multiple meanings used across content areas
Level 2 Emerging	• Phrases or short sentences • Emerging expression of ideas	• Formulaic grammatical structures • Repetitive phrasal and sentence patterns across content areas	• General content words and expressions • Social and instructional words and expressions across content areas
Level 1 Entering	• Words, phrases, or chunks of language • Single words used to represent ideas	• Phrase-level grammatical structures • Phrasal patterns associated with common social and instructional situations	• General content-related words • Everyday social, instructional and some content-related words

Source: Based on WIDA ELP Standards © 2007, 2012 Board of Regents of the University of Wisconsin System. WIDA is a trademark of the Board of Regents of the University of Wisconsin System. For more information on using the WIDA ELD Standards please visit the WIDA website at *www.wida.us*. Used with permission.

communicating inside and outside of school, they draw simultaneously from their vast array of linguistic resources (Grosjean, 1989). They cannot (and should not) turn off one language to prioritize the other. Nonetheless, traditional approaches to educating CLD students have exacerbated dual-monolingualism by separating languages in classroom environments, assessments, and instruction. Consider general education classrooms that allow students to use only English, or bilingual classrooms that rigidly separate language by teacher or content area. Formal assessments maintain the division of linguistic mediums, as seen in standardized language proficiency tests (e.g., ACCESS) that evaluate abilities in English only.

Collecting anecdotal data allows educators to capture students' authentic language use as they draw from all linguistic resources to engage in learning. Through observation and conversation with learners, teachers can glean ample information to better and more fully understand the linguistic dimension. Note that we want to consider students' *language preferences*. With multiple linguistic resources to draw from, students might prefer to use particular languages depending on the task or topic—for example, the elementary student who feels confident using English in the balanced literacy block but prefers Korean to process and solve mathematical problems. Depending on students' previous experiences with literacy and disciplinary learning, their language preferences will vary both by domain (e.g., speaking or reading) and content area (e.g., mathematics or physical education). Other students may prefer to simultaneously draw from multiple languages, tapping into unique abilities possessed by bilinguals, known as *translanguaging* (Garcia, 2009a). Because the UbD approach to curricular design builds upon students' backgrounds and strengths, it is important to recognize these preferences and abilities before planning instruction.

Facilitating the connection between languages is integral in instruction. A learner's L1 is a rich resource for literacy and disciplinary learning, as L1 abilities transfer to L2 development and academic learning. When they are familiar with students' primary languages, teachers can be aware of how languages compare and contrast. They can use this awareness first to understand linguistic transfer, or how learners use L1 to make sense of L2. For example, a Spanish-speaking EL may interchange the noun and adjective in English because of the syntactical structure in Spanish (for example, *la casa roja* translates to "the house red"). We want to encourage students' linguistic transfer to develop *metalinguistic awareness* (Bialystok, 1993; Nagy & Townsend, 1995). When students recognize how linguistic knowledge transfers across languages, they tap into the multiple resources that they bring to school. For example, Zaia's literacy in Arabic supports her literacy skills in English, including similarities (such as comprehension strategies) and differences (such as print directionality). Lorenzo might engage in contrastive analyses between AAVE and Standard English to understand linguistic components like morphology, syntax, and pragmatics (Siegel, 2006). Using anecdotal

data to understand how students connect and transfer language skills, teachers can facilitate metalinguistic awareness in instruction.

Throughout this book, we explore how to design efficacious instruction for culturally and linguistically diverse classrooms, specifically attending to language development within the UbD framework. This approach is purposefully broad to support practitioners as they plan for diverse educational settings and programs, including bilingual, ESL, sheltered, and general education classrooms. Although not the explicit focus of this book, principles of bilingualism and biliteracy underlie our framework of UbD with a lens on language development. Thus, regardless of context, home languages and language varieties should be the primary resources that are tapped into, authentically incorporated, and purposefully maintained in schools. Nonetheless, language is not the sole variable among CLD students, nor is it the only resource that learners bring to classrooms. In the next section, we consider the value of students' cultural backgrounds as they shape and influence language development and disciplinary learning.

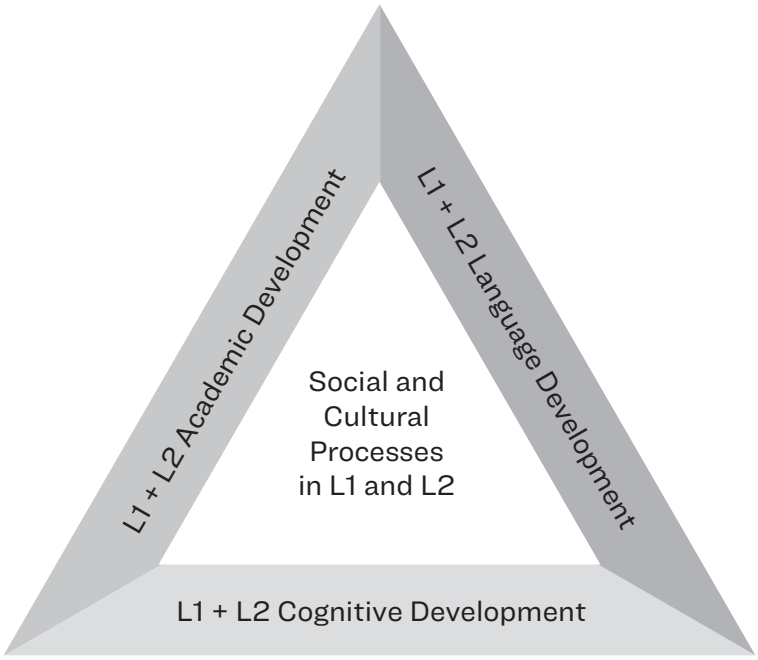
Cultural Diversity and Today's Students

Homogenous labels, such as *ELs,* tend to make us think of homogenous groups of students with similar needs in the classroom, with an emphasis on English-language abilities. In addition to heterogeneity in the linguistic dimensions, *culture* influences classroom diversity and corresponding instruction. Despite common misconceptions, culture is much more than an ethnic ascription or demographic category, such as Mexican, African American, or Latino. Gay (2010) defines culture as "a dynamic system of social values, cognitive codes, behavioral standards, worldviews, and beliefs used to give order and meaning to our own lives as well as the lives of others" (p. 9). In short, culture shapes every aspect of learning and development (Rogoff, 2003). To plan UbD instruction that is culturally and linguistically responsive, we first consider how language *and* culture influence school-based learning and development.

As we've said before, this book focuses on the simultaneous support of students' language development and their authentic literacy and disciplinary learning as planned through the UbD framework. To accomplish plans for language-integrated curricular design, it is imperative to understand that language development does not exist in a vacuum. To consider how language and culture intersect to influence learning and development, we use the prism model, which illustrates the multiple dimensions of language acquisition at schools (Collier & Thomas, 2007; Thomas & Collier, 1997). As you can see in Figure 3.10, this model emphasizes the interconnected nature of language development, cognitive development, and academic development, all centered on social and cultural processes from inside and outside school. Across dimensions, students' L1 and L2 play integral roles in holistic learning and development. We explored the nuances

of students' language development in the previous section. Now we consider the cognitive, academic, and sociocultural dimensions as a means to explore the cultural diversity of students in today's classrooms.

Figure 3.10 | **The Prism Model: Language Acquisition for School**



Source: From "Predicting Second Language Academic Success in English Using the Prism Model," by V. P. Collier and W. P. Thomas, in J. Cummins & C. Davison (Eds.), *International Handbook of English Language Teaching, Part 1* (p. 334), 2007, New York: Springer. Copyright © 2007 by V. P. Collier and W. P. Thomas. Reprinted with permission.

The Cognitive Dimension: Cultural Ways of Knowing and Learning

As learners develop language in schools, they also develop cognition, which refers to how a student's brain subconsciously processes and learns (Collier & Thomas, 2007). Often overlooked in instructional planning, the *cognitive dimension* considers how culture uniquely drives individual students' thoughts, knowledge, learning, and development (Herrera, 2016; Rogoff, 2003). Gay (2010) explains: "Even without our being consciously aware of it, culture determines how we think, believe, and behave, and these, in turn, affect how we teach and learn" (p. 9). Learners process information using culturally specific lenses and schema to tell stories, solve problems, and make decisions. These cultural ways of making meaning are mediated by students' multiple linguistic repertoires; for

example, depending on the linguistic dimension (such as L1/L2 strengths and preferences) and academic dimension (such as prior disciplinary learning in L1/L2), students will process information in a particular language or mix of languages. Despite traditional approaches to EL education that reduced schooling to low-level activities lacking cognitive rigor, theory and research support the premise that language and cognition develop simultaneously in schools (see, for example, Bowerman & Levinson, 2001; Clark, 2004; Collier & Thomas, 2007; Dromi, 1993; van Lier & Walqui, 2012; Vygotsky, 1962). As learning experiences increase in cognitive demand, students use and develop more advanced language (Walqui & van Lier, 2010). Thus, instructional design must embrace students' multiple perspectives, ways of knowing, cognitive and metacognitive strategies, and overall approaches to learning.

The Academic Dimension: Language Development for Learning

When exploring language development in schools, we also connect to student learning in the *academic dimension*. Academic development "includes all school work in language arts, mathematics, the sciences, social studies, and the fine arts for each grade level, K–12 and beyond" (Collier & Thomas, 2007, p. 335). In this era of accountability as measured by standardized tests, this dimension maintains primary importance in schools when considering educational goals for academic achievement more broadly; however, this dimension has often been removed in traditional approaches to teaching CLD students, based on false assumptions that language development precedes academic learning. With the demonstrated connection between language and cognition, as students learn and develop through their use of cultural and linguistic schema, the extension to learning and development in school-based academics becomes obvious. To engage in disciplinary learning in mathematics, for example, students use cultural lenses to conceptualize ideas and solve problems and linguistic abilities to process and communicate results. As illustrated in Figure 3.10, the academic dimension also includes attention to L1 and L2, as academic content knowledge and skills in a student's L1 transfer to L2 (Collier & Thomas, 2007). To support academic achievement in English-medium or other classrooms, effective teachers plan instruction that addresses linguistic, cognitive, and academic development equally, in both L1 and L2, while also tapping into the sociocultural dimension.

The Sociocultural Dimension: Background Knowledge for Learning

All facets of learning and development—language, cognitive, and academic—occur through social and cultural processes (Thomas & Collier, 1997; Vygotsky, 1978). The final facet to explore, the *sociocultural dimension,* represents what

students bring to the classroom from the assets and resources that they have learned from since birth, also referred to as *background knowledge* (Herrera, 2016). The heart of a learner's identity, these social and cultural processes are essential to learning across dimensions (Herrera, 2016). Because the sociocultural dimension is so essential to student achievement, we want to glean information on learners' background knowledge from home, community, and school. As shown in Figure 3.11, these three sources of background knowledge can be referred to as *funds of knowledge, prior knowledge,* and *academic knowledge,* respectively (Herrera, 2016). The sources are interconnected and should be considered holistically to capture the multiple dimensions of learners, but categories allow us to initially conceptualize these resources and explore related data sources. As will become evident throughout this book, the sociocultural dimension should underlie instructional planning, with teachers using students' backgrounds as a starting place for learning.

Figure 3.11 | **Sources of Student Background Knowledge**

Funds of Knowledge *from Home*	**Prior Knowledge** *from Community*	**Academic Knowledge** *from School*
Traditions	Community environment	Previous content knowledge
Values	Linguistic landscapes	School literacy practices
Native languages	Family employment	Academic language abilities
Home literacy practices	Community support systems	School-based cooperation and collaboration skills
Home numeracy practices	Bilingual speech communities	Formal school dynamics
Family dynamics	Language brokering	

Source: From *Biography-Driven Culturally Responsive Teaching*, 2nd ed. (p. 82), by Socorro G. Herrera, New York: Teachers College Press. Copyright 2016 by Teachers College, Columbia University. Reprinted by permission of the Publisher. All rights reserved.

Funds of knowledge from home

Central to an asset-based approach to teaching and learning, funds of knowledge emphasize the resources and experiences of students and families where they spend ample time—at home. *Funds of knowledge* refers to the "historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being" (Moll, Amanti, Neff, & González, 1992, p. 133). As active members in households, children learn varied knowledge and skills related to agriculture, business, construction, repair, and medicine. Additionally, cultural and religious affiliations shape family values and traditions, such as moral knowledge, ethics, baptisms, and holidays (Moll et al., 1992). Family dynamics include the roles that students play in their homes; for

example, in many Mexican families, children are central contributors to daily household management in areas such as cooking, cleaning, and childcare (Orellana, 2001). Amid these activities, family members use unique repertoires of language, literacy, and numeracy while playing, singing, dancing, praying, debating, telling stories, reading newspapers, making lists, or tutoring siblings (Heath, 1983; Zentella, 2005).

Getting to know students' funds of knowledge takes effort beyond looking at formal data provided by schools. Whereas teachers can glean basic information—such as home language, country of origin—from enrollment forms, rich information on students' experiences at home emerges from the collection of anecdotal data via meaningful and authentic interaction with students, parents, and families. To collect data on funds of knowledge, we recommend going straight to the source—the home. Home visits allow for firsthand observation, participation, and conversation to gain a holistic sense of students' daily lives (Moll & González, 1997). Following home visits, teachers can maintain open lines of communication between home and school. Rather than conceptualize parent-teacher conferences and school-based family events as opportunities for school personnel to pass information to parents, these should be embraced as two-way conversations to learn about students' homes, families, and funds of knowledge (García-Sánchez, Orellana, & Hopkins, 2011). When analyzing data, educators should deconstruct their own assumptions and biases as to what at-home practices are valuable for school-based learning; although they may have grown up with ample books and bedtime stories, other experiences are also valuable to classroom learning (Heath, 1983; Zentella, 2005).

Prior knowledge from the community

When students are not at home or school, they are interacting with friends, family, and others in various locales in the community—a restaurant, store, church, workplace, community organization, library, museum, sporting event, or social gathering. Connected to funds of knowledge accumulated at home, *prior knowledge* refers to students' experiences and understandings accrued from living in and being a part of a larger community (Herrera, 2016). Based on family employment, students might engage with language, literacy, and numeracy in workplaces, as illustrated by Zaia's many roles at the family store and Lorenzo's hands-on tasks for his father's small business. Using affiliations from work, cultural background, and religion, families regularly develop social networks, building mutually beneficial support systems to meet childcare, financial, educational, and other needs (Moll et al., 1992). Whether in an informal social network or a formal community organization, members participate in bilingual speech communities that merge linguistic repertoires via authentic engagement with religion, sports, and activities (Herrera, 2016; Zentella, 2005). Children and adolescents

play integral roles in these diverse linguistic landscapes, often serving as language brokers between L1 and L2 for other members of the community (Morales & Hanson, 2005).

Beyond the general inferences that can be made from formal data such as address and family or parent employment, anecdotal data elucidate the varied sources of prior knowledge. Just as home visits yield context-specific data on funds of knowledge, community walks provide genuine opportunities to observe and document trends in social interaction, linguistic repertoires, and cultural practices within the community (Moll et al., 1992; Zentella, 2005). Partnerships with community entities and stakeholders—such as collaboration between classroom teachers and community members who work with the same students in churches, language classes, or sports leagues—can support recognition and understanding of prior knowledge (Kenner & Ruby, 2013). In classrooms, conversations with students provide invaluable opportunities to collect data on any facet of background knowledge, including prior knowledge from community-based experiences. Whether orally or in writing, students and teachers can dialogue about out-of-school experiences, activities, and interests. Teachers can also glean helpful anecdotal data about how prior knowledge manifests in classrooms by observing students as they engage with authentic learning tasks, including think-alouds that provide windows into students' cultural ways of making meaning (Herrera, 2016; Rogoff, 2003).

Academic knowledge from schools

Whereas prior knowledge from homes and communities is often disregarded in instructional planning—particularly for CLD students, who likely have different experiences than the predominantly white, English-proficient teaching corps—academic knowledge is the form of background knowledge that is most widely used in classrooms. Herrera (2016) describes academic knowledge as that which students have acquired in formal educational settings, both in students' countries of origin and in the current school context. Academic knowledge includes students' understandings of and abilities with literacy and content, as well as experiences with formal school dynamics and patterns of collaboration. For students with previous schooling experiences in other countries, teachers can tap into their L1 abilities, content knowledge and skills, and familiarity with schooling practices; however, in many countries, schools maintain different expectations for student behavior and learning. By being aware of divergent school dynamics and norms, such as teacher-directed instruction with limited student interaction or expectations to find the right answer without showing work, teachers can recognize where students may need additional support to actively engage in learning.

Academic knowledge is the one type of background knowledge for which formal data are often readily available for educators to begin to understand students'

holistic backgrounds, abilities, and needs. For students with prior schooling in the United States, educators can access and explore academic records, such as grades and standardized test scores. Additionally, they can use knowledge of state standards and local curricula to gain a general sense of students' previous scope and sequence of learning. For students entering schools from other countries, often without formal documentation or school records, school personnel can research the broad educational trends and characteristics, such as what languages are used in instruction, the trajectory of various disciplinary curricula, and formal school norms and dynamics in the country of origin (Flaitz, 2006). Practitioners can then use this information as a backdrop to make meaning of anecdotal data collected in classrooms, such as teachers' observations and students' self-assessments of overall school engagement, content and literacy abilities, and preferences regarding language and learning.

In summary, with vast diversity among students in every classroom—ranging in age, ethnicity, cultural background, religion, native language, learning preferences, socioeconomic status, gender identity, and beyond—we embrace the need to be responsive in the design and implementation of UbD instruction. With a specific lens on CLD students, practitioners move beyond the educational labels ascribed by schools and embrace the complexity and multiple dimensions of student learning, including sociocultural, linguistic, cognitive, and academic (Collier & Thomas, 2007; Thomas & Collier, 1997). Doing so requires that teachers first deconstruct what is typically perceived to be valuable background knowledge in mainstream American schools, and then collect and analyze various sources of data (as shown in Figure 3.12) to understand students as holistic learners (Herrera, 2016). After preplanning for UbD instruction, teachers can then set goals and design classroom experiences that integrate students' unique backgrounds, strengths, and needs as learners.

Classroom Application: Supporting Students' Backgrounds, Strengths, and Needs

Drawing from the multiple dimensions of students' learning and development, we now outline the specific steps to follow in instructional planning using the UbD framework. In this section, we describe how to collect, analyze, and apply appropriate data to effectively preplan instruction for diverse students.

Amass Formal Data

Given the plethora of educational policies, related forms, and required assessments, educators should have access to ample data to begin to get to know students. When enrolling students in school, parents and guardians submit various forms that include general developmental information (such as age, grade) and specific cultural and linguistic details (such as ethnic background, home

language). Given annually, standardized tests, such as ACCESS, produce data related to students' language development; others, such as PARCC, produce data on academic achievement. Other assessment data may also be available for individual students, including data from screening tests for gifted services and individualized education plans (IEPs). Whether your school or district uses cumulative folders with data housed in the main office, computer software with data organized on online platforms, or a combination of both, you can purposefully seek and assemble helpful information related to students' learning and development.

Figure 3.12 | **Collecting Data on Students' Backgrounds**

Data Source	Directions
Classroom observations	Watch and listen to how students communicate and interact with other students and texts. Note how they use language to engage in tasks both inside and outside classrooms.
Community walk	Walk around the community of your school where your students live. Observe authentic language and literacy in action. Note community support systems and resources for learning.
Dialogue journals	Have students write about home, community, and school experiences in journals. Respond to their entries, creating a form of written dialogue. Provide prompts and questions to probe pertinent facts.
Home visits	Schedule time to visit a student's home. Draft open-ended questions to engage in a dialogue with the caregivers. Encourage caregivers to informally share information about the learner.
Parent-Teacher conferences	Use parent-teacher conferences as a two-way dialogue to collect information about students' background knowledge and experiences that can be tapped into as resources in classrooms.
Student records	Seek out extant data in cumulative folders or electronic databases, including age, grade, ethnicity, home language, country of origin, prior schooling, and standardized test scores of language and content.
Student self-assessments	Allow students to share strengths, needs, and preferences through self-assessments on language use and classroom learning. Have students set goals for learning and self-assess progress toward goals.
Student-Teacher conversations	Structure informal and formal opportunities to individually interact with students. Draft open-ended questions to engage in dialogue about interests, experiences, and preferences and evaluate oral language.
Think-alouds	Encourage students to think aloud. Observe and note how they process information to glean information on linguistic skills and culturally and linguistically specific cognitive and metacognitive processes.

Collect Anecdotal Data

Formal measures provide a starting place to get to know students on paper, but these data yield static and often limited snapshots of students' abilities. Moving beyond traditional tests and tools that are normed with mainstream students, you can produce richer portraits of learners by gleaning additional information related to background knowledge, cultural ways of making meaning, and language preferences in social and academic settings. In this way, you can collect anecdotal data on students' learning and development by seeking information directly from students and families—often while engaged in learning in classrooms and communities. Prioritizing qualitative methods such as observations and interviews, you can collect anecdotal data through formative assessment—using vehicles such as dialogue journals and student self-assessments, daily classroom interaction in situations such as reading conferences and small-group work, and family engagement during home visits and parent-teacher conferences.

Analyze Students Holistically

After amassing formal data and collecting anecdotal data to get to know students holistically as learners, you then analyze the data to discern individual students' backgrounds, strengths, and needs. To plan instruction that responds to students, consider the multiple dimensions of learners, including the *sociocultural* (background knowledge from home, community, and school), *linguistic* (listening, speaking, reading, and writing in L1 and L2), *cognitive* (culturally specific approaches to learning and problem solving), and *academic* (abilities spanning literacy and content areas). The Holistic Student Profile in Figure 3.13 is a tool to help organize and analyze multiple sources of formal and anecdotal data to identify an individual's resources, abilities, strengths, and needs. As we emphasize throughout the book, this holistic analysis focuses on students' assets to bolster learning and development.

Set Long-Term Learning Goals

After tapping into both formal and anecdotal sources to holistically profile students, use these data to set individual and whole-class goals. This process will vary by teacher and classroom context; for example, elementary teachers may target each student in a self-contained classroom, whereas high school teachers might generalize across a particular class section. Long-term learning goals for CLD students should align with the rigorous course-level goals for all learners, specifically when considering desired achievement in cognitive and academic dimensions. Add goals related to the sociocultural dimension—for example, acculturating to U.S. school practices and developing cultural identity; and the linguistic dimension—for example, maintaining L1 and improving L2 writing. Plan instruction for the academic year using these goals for student learning across sociocultural, linguistic, cognitive, and academic dimensions.

Figure 3.13 | **Holistic Student Profile**

Dimension	Formal Data	Anecdotal Data	Analyses and Goals
Sociocultural	Age: Grade: Country of origin: Prior schooling: Time in US:	Funds of knowledge (Home): Prior knowledge (Community) Academic knowledge (School):	Strengths: Need(s): Goal(s):
Cognitive	Gifted: IEP: 504: RtI tier: Other:	Student processing: Learning preference(s): Preferred grouping:	Strengths: Need(s): Goal(s):
Linguistic	Native Language (L1): L1 Overall: L1 Listening: L1 Speaking: L1 Reading: L1 Writing: Second Language (L2): L2 Overall: L2 Listening: L2 Speaking: L2 Reading: L2 Writing:	Language preference(s): Literacy preference(s): Language variety: Metalinguistic awareness: Translanguaging abilities:	Strengths: Need(s): Goal(s):
Academic	Standardized content test scores: Reading: Math: Science: Other:	ELA abilities/self-efficacy: Math abilities/self-efficacy: Science abilities/self-efficacy: Other:	Strengths: Need(s): Goal(s):

Sources: Based on "Predicting Second Language Academic Success in English Using the Prism Model," by V. P. Collier and W. P. Thomas, in J. Cummins & C. Davison (Eds.), International Handbook of English Language Teaching, Part 1, 2007, New York: Springer; and *Biography-Driven Culturally Responsive Teaching* (2nd ed.), by S. G. Herrera, 2016, New York: Teachers College Press.

Design Supportive Environments

Although this book focuses on instructional planning, specifically through the culturally and linguistically responsive UbD framework, contextual features of culturally and linguistically diverse classrooms and schools are equally important in supporting language development and disciplinary learning. Contextual features are broader elements, not limited to actual instruction, that aim to create, foster, and maintain positive learning environments that support students' multiple dimensions of development, including sociocultural, cognitive, and linguistic dimensions. These contextual features should respond to students' backgrounds and needs; examples include classroom communities that support students' risk taking with language and literacy-rich environments that provide multilingual celebrations and scaffolds for learning.

Plan Meaningful Instruction

As you seek to support students' achievement of long-term learning goals, plan meaningful and authentic instruction using the UbD framework. The chapters that follow will explore how to plan instruction to foster students' learning and development across dimensions, drawing from the holistic data analyses and long-term goals described earlier. In Stage 1 (Chapter 4), teachers analyze the unit of study for language demands and set unit learning goals via knowledge and skill indicators. In Stage 2 (Chapter 5), teachers analyze and revise for possible cultural and linguistic bias in performance tasks, summative tests, and other assessments. In Stage 3 (Chapters 6 and 7), teachers tap into background knowledge and provide appropriate scaffolds and supports before, during, and after instruction.

Classroom Snapshot: Starting with Students

Mrs. Karen Tellez is the 8th grade language arts teacher at Newton Bateman Elementary School in the vibrant and diverse Albany Park community on the northwest side of Chicago. Taught by 60 teachers spanning preschool through middle school, approximately one thousand students attend Bateman. Eighty percent, or 800, of those students speak a LOTE at home. At a school that is 85 percent Latino, the large majority of those students use Spanish at home, with a wide array of language varieties spoken by families from Mexico, Guatemala, El Salvador, Ecuador, Colombia, Puerto Rico, and Spain. In addition to Spanish, students come to school with linguistic backgrounds in Arabic, Tagalog, Farsi, Urdu, Malayalam, Russian, Swahili, Thai, Burmese, and French. Within the broader population of CLD learners, approximately one-third of Bateman students are labeled as EL based on scores from the ACCESS language proficiency test. Thus, one in three students across the school community is still developing proficiency in listening, speaking, reading, and writing English.

In the departmentalized middle school setting, Mrs. Tellez serves approximately 95 students across multiple sections of 8th grade language arts. In spite of teaching many students, she recognizes the importance of getting to know students' backgrounds and abilities before undertaking instructional design. Using data compiled by Bateman's EL specialist, Mrs. Tellez begins each school year by analyzing students' language abilities, including L1 backgrounds and L2 proficiencies. First, using the student list with L1 as indicated on the Home Language Survey, she familiarizes herself with any new languages not previously represented in her classroom, such as one newcomer and SLIFE student whose L1 is Swahili. Then, for each class section, she plots students' standardized language proficiency test scores, which gives her a snapshot of students' language abilities and needs by domain (listening, speaking, reading, writing) to inform instructional planning and supports.

In addition to using these formal data, Mrs. Tellez also purposefully integrates meaningful and interactive opportunities to get to know students and collect anecdotal information on their sociocultural, cognitive, linguistic, and academic backgrounds. She consistently fosters a collaborative classroom environment where learners feel safe, comfortable, and encouraged to share their own stories and develop their individual identities. Early in the school year, she designs community-building efforts for learners to tell stories and share ideas, simultaneously building rapport and capturing pertinent data about students' backgrounds, experiences, interests, and preferences. Throughout the school year, Mrs. Tellez documents observations from literacy conferences and constructivist learning contexts, such as literature circles and journals. Doing so helps her to build her awareness of the diversity in students' backgrounds in terms of family structure, religion, language preferences, previous schooling, and other factors, and to note specific sets of background knowledge that learners bring from home, community, and school. She also strategically uses parent-teacher conferences as a two-way dialogue to glean additional information about learners' holistic backgrounds, abilities, strengths, and needs.

These formal and anecdotal data provide her with pertinent information to design instruction that responds to and incorporates students' cultural and linguistic backgrounds. Consider her 8th grade language arts unit focused on journeys and identity development (see Figure 3.14). Being familiar with her students' backgrounds, Mrs. Tellez specifically selects the book *Red Glass* (Resau, 2009) as the mediating text. In this book, the protagonist, Sophie, travels through Mexico to Central America to find the family of her 5-year-old adopted brother, Pablo, the only survivor of a group crossing the border in Arizona. Facing many hardships and challenges on this dangerous journey, Sophie finds inner strength and develops a sense of identity and self-awareness when faced with trauma, challenges, and death.

From her collection of preplanning data, Mrs. Tellez knows that the majority of her students are immigrants or the children of immigrants with both personal and familial stories of border crossing, family separation, and other related hardships. Whereas many students have direct knowledge of the setting in Mexico and Central America, other students have experienced similar journeys from Iraq, Myanmar, and the Congo. By selecting a culturally relevant text based on her students' experiences, she allows students to use their background knowledge to build understandings, grapple with essential questions, and develop the knowledge and skills indicated in Stage 1 of the UbD framework. By integrating her students' journeys and identities throughout the unit, including the performance assessment in Stage 2 and the learning plan in Stage 3, she maintains a language lens for CLD students throughout her instructional design.

Mrs. Tellez also plans the unit in response to other elements of learners' profiles. Using preplanning data on students' linguistic dimensions, she prioritizes the development of discipline-specific language. Bateman's heterogeneous class sections include students who are labeled as ELs and English-proficient. Other than the recent arrival from the Congo, most of her labeled ELs are in the latter stages of L2 development. She uses this information to target disciplinary language to develop students' linguistic knowledge in areas such as vocabulary, literary devices, and expository text structures as well as their skills in particular language functions and domains, such as paraphrasing and debate. As a part of her linguistic analysis in Stage 1, Mrs. Tellez recognizes she can use cognates for her Spanish bilingual students (for example, *desert/desierto*, *immigration/inmigración*), while other learners will need additional support to develop disciplinary language. Regardless of her students' language background, including Arabic, Tagalog, Thai, and Burmese, Mrs. Tellez wants to embrace and build upon their L1 in the classroom setting. To accomplish this, she designs the Stage 2 performance task and the Stage 3 learning plan to incorporate frequent opportunities for bilingualism, biliteracy, and translanguaging. Because most of the learning plan is student-centered through literature circles, Mrs. Tellez also recognizes the need to support her Congolese student and others newer to the classroom community who may not be familiar with these collaborative dynamics of schooling.

Chapter Summary

Focused on preplanning for language development, this chapter has emphasized the need to acknowledge, discern, and plan instruction that responds to students' unique backgrounds, strengths, and needs across dimensions of learning and development (Herrera, 2016). Throughout the chapter, we have explored the heterogeneity of students' cultural and linguistic backgrounds and abilities within the homogenous labels commonly used in schools, as well as specific ways to collect and use multiple sources of data to capture individual students as unique and

Figure 3.14 | **Mrs. Tellez's 8th Grade Language Arts Unit**

<table>
<tr><th colspan="3">Stage 1 – Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="6">CCSS-ELA-RL-8.4: Determine the meaning of words and phrases as they are used in a text; analyze the impact of specific word choices on meaning and tone.
CCSS-ELA-RL-8.6: Analyze how differences in points of view of characters or reader create such effects as suspense or humor.
CCSS-ELA-W-8.1: Write arguments to support claims with clear reasons and relevant evidence.
CCSS-ELA-SL-8.5: Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.</td><td colspan="2">Students will be able to independently use their learning to…
• Read critically, analyzing how themes are developed in a text as connected to real-world experiences.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that…
• People take many journeys, including physical, emotional, spiritual, and cultural.
• Our journeys shape our identities.
• Our values develop through the choices that we make.
• Powerful story writing helps us make connections to our lives and the lives of others through the development of themes.</td><td>Essential Questions
Students will keep considering…
• What journeys can a person take?
• How do our journeys change us?
• What is most important in life?
• How do fictional texts help us make personal connections?
• How do the themes of a text help us better understand others?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
<tr><td>Students will know…
• Unit- and text-specific vocabulary (e.g., journey, destination, desert, immigration, undocumented, shard, insecurity, protagonist, antagonist)
• Literary devices (e.g., simile, metaphor, hyperbole, assonance, personification, alliteration)
• Expository texts with particular sentence structures and signal words</td><td>Students will be skilled at…
• Determining a speaker's argument and claims and evaluate relevance of the presented evidence.
• Paraphrasing the argument and claims of a peer regarding Sophie's change.
• Debating the events that most influence Sophie to change.
• Identifying the events that most influence Sophie's change.
• Producing an argument and supporting claims regarding the events that most influence Sophie to change.</td></tr>
</table>

<table>
<tr><th colspan="3">Stage 2 - Evidence</th></tr>
<tr><th>Evaluative Criteria</th><th colspan="2">Assessment Evidence</th></tr>
<tr><td>• Authentic
• Evidence-based
• Convincing
• Engaging
• Rich language</td><td colspan="2">Performance Tasks(s)
Sophie's Immigrant Journey
Your task is to tell the journey of an individual. You are a local reporter charged with informing the public about personal stories of immigration. The upcoming segment centers around Sophie's journey, including your argument and supporting claims about the events that defined her journey. You will create a video segment with your peers, which includes interviews, role-playing, and supplemental video and pictures to craft the story of Sophie's journey. You should use your cultural and linguistic resources to accomplish this task, including your own journeys and native languages. Your performance needs to tell her story while convincing the audience with your crafted storyline.</td></tr>
<tr><td>• Collaborative
• Interpretive
• Engaged</td><td colspan="2">Supplementary Evidence
• Participation in interactive learning events (i.e., Socratic seminar, literature circles)
• Teacher-student conferences based on focal text (i.e., Red Glass) and related texts</td></tr>
<tr><th colspan="3">Stage 3 - Learning Plan</th></tr>
<tr><td colspan="3">Pre-assessment
• Glean background knowledge about journeys: Use a form of graffiti where students walk around the room and respond to the unit essential questions with words or pictures. Groups share out key ideas from posters.
• Interactive anticipation guide (in English and Spanish): Students respond to sentence prompts and use their ideas to interact with one another around the big themes of Red Glass.</td></tr>
<tr><td colspan="2">Learning Events
• Modeling and application of nonfiction article about immigrant border crossing: Text annotation using Think Marks and summarization using the 5W+1H graphic organizer (bilingual).
• Ongoing reader responses: To begin each class, students use reader response strategies based on the target theme and focus for the class (e.g., sketch to stretch, webbing, character comparison).
• Ongoing reading minilessons: Prior to each literature circle, give minilesson on reading strategy to make meaning (e.g., self-monitoring, making inferences, visualizing, analyzing events) using related graphic organizers (e.g., characterization chart, bridge graphic organizer, say/mean T-chart, pictures).
• Ongoing literature circles: After reading set portions of the novel Red Glass, students get together to discuss and make meaning of the overarching themes as related to essential questions using roles.
• Modeling and application: Connections between focal novel and other genres, including poetry ("I carry your heart in my heart," by e e cummings) and graphic novel (Safe Area Gorazde, by Joe Sacco).
• Socratic seminar: What prompted the change from Sophie La Delicada to Sophie La Fuerte? Provide students with sentence frames based on levels of language proficiency (L1 for emerging students).
• Extension of language development through culturally relevant picture books: Harvesting Hope: The Story of Cesar Chavez (Krull, 2003), Ziba Came on a Boat (Lofthouse, 2007), Pancho Rabbit and the Coyote (Tonatiuh, 2013), The Arrival (Tan, 2007), Migrant (Trottier, 2011), Grandfather's Journey (Say, 2008), My Diary from Here to There (Perez, 2009), Landed (Lee, 2006), and Bread Song (Lipp, 2004).
• In-class time to plan, rehearse, and share performance tasks (reporting segments; see above).</td><td>Formative Assessment
• Artifacts from reader responses and interactive literature discussions (e.g., posters, reflections)
• Artifacts from daily instruction (e.g., bridge graphic organizer for citing text evidence, characterization chart, say/mean T-chart, context clue chart, one-minute summaries)
• Personal glossaries of related vocabulary
• Checklist on daily checks for understanding</td></tr>
</table>

Source: Used with permission from Karen Tellez, Newton Bateman Elementary School, Chicago.

holistic learners. We have described how to plan instruction that builds upon the resources and assets that students bring to classrooms, including home languages and cultural backgrounds. Unlike traditional approaches to teaching CLD students, in which one-size-fits-all strategies pervade instruction, our approach has emphasized the need to first recognize and then respond to the diverse students in classrooms, resulting in what has been called, in the educational literature, culturally and linguistically responsive pedagogy (Gay, 2010; Lucas et al., 2008).

Throughout upcoming chapters, we integrate foci on language and culture into the UbD framework for curricular design and instructional planning. As we explore the three stages of instructional design, you will see the pertinence of the data amassed in the preplanning stage. In Stage 1, data on students' linguistic dimension support the determination of relevant language and corresponding goals for language development. In Stage 2, various data inform the design of performance tasks that appropriately tap into background knowledge and differentiate opportunities to demonstrate learning based on language proficiency. In Stage 3, all data merge to devise learning trajectories that incorporate students' unique strengths and interests while scaffolding and supporting equitable access to authentic learning tasks and complex texts. In the next chapter, we begin our exploration of using the UbD framework in culturally and linguistically diverse classrooms by focusing on Stage 1 of instructional design.

4

Setting Goals for Learning: Stage 1 for Language Development

CHAPTER GOALS

- **Transfer**: Educators will be able to independently use their learning to . . .
  - Recognize language demands within and across academic disciplines.
  - Target and define desired results for students' language development.
- **Understandings**: Educators will understand that . . .
  - Language usage varies within and across academic disciplines.
  - Language demands vary by learner, task, and classroom context.
  - By recognizing and attending to language demands in units of study, teachers provide CLD students equitable access to learning.
- **Essential questions**: Educators will keep considering . . .
  - What is language?
  - How does language vary by discipline, context, and unit of study?
- **Knowledge**: Educators will know . . .
  - Language functions tied to six facets of understanding.
  - Academic registers of mathematics, science, social studies, English language arts, and other disciplines.
  - Language features at word, sentence, and discourse levels.
  - The four domains of language (listening, speaking, reading, writing).
- **Skills**: Educators will be skilled at . . .
  - Analyzing the language demands inherent within and across academic disciplines and units of study.
  - Distinguishing how discrete skills and processes can target and develop students' language development in units of study.

When we add a lens on language development to UbD, our overarching goal is equity. This focus on equity for CLD students begins in Stage 1 of instructional planning when we define the desired results for learning. First, we want all students to be able to engage in authentic learning to achieve learning goals and enduring

understandings. Second, we recognize the need to explicitly focus on disciplinary language to develop all students' language and to provide equitable access to the desired results for CLD students. With those goals in mind, we focus this chapter on recognizing the linguistic demands of academic tasks, including language functions and features. We consider these demands across disciplines and units of study and then use them to fine-tune the Stage 1 desired results, including transfer goals, meaning goals, and acquisition goals.

Language Development in Classrooms and Schools

Recognition of the many facets of language development—including how it varies depending on discipline, classroom, student, task, and text—informs the work of Stage 1. Here we introduce Fatima and Vinh, two students whose situations illustrate some of the nuances that come into play when undertaking Stage 1 of the UbD framework.

Fatima, 7th Grader

A native Spanish speaker, Fatima began learning English in 3rd grade, when her family immigrated to the United States from Guaymas, Mexico, and enrolled her in the neighborhood elementary school. Now at a culturally and linguistically diverse middle school, Fatima moves from classroom to classroom to learn different content areas with her peers, many of them Spanish speakers from Mexico, Central America, and South America. In language arts class, Fatima's teacher engages students in reading, writing, and orally reciting different forms and structures of poetry, including limericks and haiku. Fatima learns about statistics in math class: reading random samples of census data, making inferences on population, and writing justifications for claims. In science, she and her classmates apply learning from textbook readings and learning experiences by designing and explaining the structure and function of cells through models. Fatima enjoys the current focus on immigration in social studies, where the class is reading *Dreamers* (Truax, 2015), an expository, journalistic-type narrative profiling undocumented students across the United States, and conducting oral history interviews to capture stories of immigration. Just as she did in elementary school, Fatima loves learning and embraces her teachers' high expectations; however, she sometimes struggles to access the content because of the complex language used distinctly in each class period. Whether making inferences based on figurative language in poems, justifying claims from census-based data tables, applying concepts from the science textbook, or navigating the specific people, legal proceedings, and acronyms of the U.S. immigration debate, Fatima must develop disciplinary language to fully participate and engage in learning.

Vinh, 10th Grader

Vinh, a sequential bilingual, grew up speaking Vietnamese at home with his parents, a nurse and a local restaurant owner, as well as his grandparents and siblings. Vinh began learning English when his parents enrolled him in kindergarten. Now a 10th grader in a suburban public high school, Vinh is considered a long-term EL. Strong in listening and speaking, he struggles with reading and writing, particularly in discipline-specific academic settings. Last year in 9th grade, Vinh failed history class. Despite being interested in social studies in elementary and middle school, he struggled to comprehend the teacher's lectures and access the textbook, which consistently used passive voice, complex sentences, technical vocabulary, and words with multiple meanings. After Vinh lost interest in the content due to its inaccessibility, his teacher provided him with simplified texts and rote worksheets different from the texts and tasks of his English-proficient peers. This year Vinh was placed in a history class with a different teacher, one with specific preparation for ELs, including an understanding of disciplinary language and language development. This teacher plans instruction with simultaneous lenses on history content and language. She plans and implements instruction to engage students in deep, authentic, and interactive learning around understandings and essential questions, while scaffolding access to the language demands and functions inherent in the history-focused units of study. Because of the teacher's language lens, Vinh can now access classroom-based disciplinary learning, build deeper understandings, and grapple with essential questions, leading to his enhanced self-efficacy, engagement, and motivation.

Stage 1 for Understanding and Language Development

As described in Chapter 1, the overarching goal of UbD is to develop and deepen student understanding. We want educators to plan instruction so that students make meaning and apply understandings, knowledge, and skills in new situations (Wiggins & McTighe, 2011). Stage 1 of backward design is where we define the desired results of instruction, including goals for transfer, meaning, and acquisition. *Transfer* refers to long-term goals of instruction—specifically, preparing students to transfer and use their learning beyond the scope and sequence of an instructional unit of study. To facilitate transfer, we teach for *meaning*, with students actively inquiring and grappling with *essential questions* to build deep *understandings*. The building blocks for meaning-making and transfer, *acquisition goals* aim to build related *knowledge* and *skills* (Wiggins & McTighe, 2011). Taken together, these interconnected goals set rigorous expectations for authentic learning that guide subsequent instructional planning. In the next sections, we examine these various elements through the lens of language development.

Transfer and Meaning Goals with a Lens on Language

We begin UbD instructional planning with a lens on language by considering the language students need to achieve *transfer goals* and *meaning goals*. Teachers use these goals first to determine the language needed for all students to engage in learning and then to scaffold and support students' language development throughout the stages of instructional design and implementation.

As demonstrated in the following sections, language development occurs within a sociocultural context (Walqui & van Lier, 2010). This context includes a register (e.g., the language of mathematics), a unit topic (e.g., algebraic slope), tasks (e.g., using neighborhood maps), texts (e.g., word problems), and students, including their linguistic background (WIDA, 2012). We begin with the *sociolinguistic lens* on *language functions* across disciplines and units, as students use language for social interaction and cognitive processing. We then consider the *linguistic lens*, focused on the *language demands* at the discourse, sentence, and word/phrase levels within disciplines and units of study.

Language Functions Across Disciplines: A Sociolinguistic Lens

Language mediates communication inside and outside of school, both orally and in writing. However, to accomplish specific goals and tasks, we use language in different ways, referred to as *language functions* (Fairclough, 2003; Halliday, 1975). Throughout the school day, teachers and students use various language functions to engage in daily learning experiences. Using *communicative language functions*, students greet one another, ask for a hall pass or to go to the bathroom, give information or assistance to their peers, and express their feelings and emotions (O'Malley & Pierce, 1996). Students incorporate *academic language functions* while participating in classroom learning experiences, such as identifying and labeling geographic features on a map, sequencing and explaining the steps in a mathematical equation, hypothesizing the outcome of a science experiment, or critiquing the author of a literary work (AACCW, 2010; O'Malley & Pierce, 1996). Language functions span disciplines and prompt students to use language in distinct ways, including merging and enacting words, phrases, sentences, and discourses to take part in social interaction, cognitive processing, and authentic learning.

In this section, we use the *six facets of understanding* (Wiggins & McTighe, 2005) to consider language functions, or the ways in which students use language as tied to cognition. These facets of understanding are explanation, interpretation, application, perspective, empathy, and self-knowledge. They can be used to design and assess the deep and authentic learning that is the ultimate goal of

UbD—the design of instruction that enables students to go beyond simple recall of facts related to a specified standard and instead to make meaning of important concepts and to transfer learning to other contexts. By adding a lens on language, our overarching goal is to ensure that all students have equitable access to the transfer and meaning goals in units of study, ensuring equity for CLD students in particular. Because transfer and meaning goals require higher cognitive functions by design, we consider the language functions needed to achieve those desired results. This linguistic analysis aims to reduce the *expert blind spot*, the phenomena in which educators—the disciplinary and pedagogical experts in classrooms—have difficulty empathizing with students who are novices in the field and may have radically different experiences than their own (Wiggins & McTighe, 2005). This blind spot is exacerbated by language, particularly for educators who are English dominant. Thus we aim to build awareness of discipline-specific language demands, allowing educators to support students' language development throughout the three stages of instructional design.

Explanation

The first facet of understanding, *explanation*, centers on students' use of productive language via speaking or writing to demonstrate their understanding of big ideas. Wiggins and McTighe (2005) assert, "When we truly understand, we can explain via generalizations or principles, providing justified and systemic accounts of phenomena, facts, and data [to] make insightful connections and provide illuminating examples or illustrations" (p. 84). Distinct from the regurgitation of rote knowledge of facts and terms, this facet of understanding recognizes the need for students to explain what they know by making inferences, generalizing principles, synthesizing ideas, and substantiating claims with evidence. With understanding demonstrated by explanation of concepts, ideas, theories, and events, students use language in authentic ways that are embedded in content learning. The assumption is that students with in-depth understanding can express these nuanced connections and provide particular examples using both oral and written language.

When adding a lens on language, teachers consider the language that students need to use to articulate understandings and respond to essential questions. *Explanation* as a language function requires that students use "phrases and sentences to express the rationale, reasons, causes, or relationship related to one or more actions, events, ideas, or processes," as well as related *discourse markers*, including "so, for, therefore, as a result, for that reason" (AACCW, 2010, p. 3). But expanding to consider explanation as a broader facet of understanding, additional language functions become pertinent, such as sequencing, describing, comparing, generalizing, inferring, predicting, and synthesizing, with corresponding linguistic features that vary in complexity (AACCW, 2010; Wiggins &

McTighe, 2005, 2011). With our primary purpose being that all students engage cognitively with disciplinary concepts and achieve transfer and meaning goals, we must consider the varied language functions and features needed to demonstrate understanding. See Figure 4.1 for an overview of language functions and related language features.

Figure 4.1 | **Language Functions and Features**

Language Function	Related Language Features
Identify	A word or phrase to name an object, action, event, idea, fact, problem, or process
Label	A word or phrase to name an object, action, event, or idea
Enumerate	Words or phrases to name distinct objects, actions, events, or ideas in a series
Classify	Words, phrases, or sentences to associate an object, action, event, or idea with the category to which it belongs
Sequence	Words, phrases, or sentences to express the order of information with adverbials such as *first, next, then, finally*
Organize	Words, phrases, or sentences to express relationships among events and ideas with coordinating conjunctions (*and, but, yet, or*) and adverbials (*first, next, then, finally*)
Compare	Words, phrases, or sentences to express similarities or differences with coordinating conjunctions (*and, but, yet, or*) and adverbials (*similarly, likewise, in contrast*)
Inquire	Words, phrases, or sentences to solicit information (e.g., yes-no questions, WH-questions, statements used as questions)
Describe	Words, phrases, or sentences to express or observe attributes or properties of an object, action, event, idea, or solution
Define	Words, phrases, or sentences to express the meaning of a given word or phrase
Explain	Phrases or sentences to express rationales for actions, events, ideas, or processes with coordinating conjunctions (*so, for*) and adverbials (*therefore, as a result*)
Retell	Phrases or sentences to relate or repeat information with coordinating conjunctions (*and, but*) and adverbials (*first, next, then, finally*)
Summarize	Phrases or sentences to express important ideas and relevant details about one or more objects, actions, events, ideas, or processes
Interpret	Phrases, sentences, or symbols to express understanding of the intended or alternate meaning of information
Analyze	Phrases or sentences to indicate parts of a whole or relationship among parts with relationship verbs (*contain, entail*), partitives (*a part of*), and quantifiers (*hardly any*)
Generalize	Phrases or sentences to express an opinion or conclusion based on facts, statistics, and other information to extend that opinion to other contexts

Language Function	Related Language Features
Infer	Words, phrases, or sentences to express understanding based on available information using inferential logical connectors (*although, while, thus, therefore*)
Predict	Words, phrases, or sentences to express an idea about a future action or event based on available information using adverbials (*maybe, perhaps, evidently*)
Hypothesize	Phrases or sentences to express an expectation or possible outcome based on available information using adverbials (*generally, typically, obviously*)
Argue	Phrases or sentences to present a point of view and communicate a particular position with expressions (*it seems to me*) and adverbials (*although, however*)
Persuade	Phrases or sentences to present ideas with the intent to create agreement around a position with expressions (*in my opinion*) and adverbials (*since, because*)
Negotiate	Phrases or sentences to engage in a discussion with the purpose of creating mutual agreement from two or more different points of view
Synthesize	Phrases or sentences to express relationships among ideas with relationship verbs (*contain, entail*), partitives (*a segment of*), and quantifiers (*almost all, hardly any*)
Critique	Phrases or sentences to express a focused review or analysis of an object, action, event, idea, or text
Evaluate	Phrases or sentences to express a judgment about the meaning, importance, or significance of an action, event , idea, or text
Symbolize	Symbols, numerals, and letters to represent meaning within a conventional context

Source: From "Language for Achievement" handout from the Assessment and Accountability Comprehensive Center at WestEd, 2010. Reprinted with permission.

After deconstructing the particular ways that language is required to demonstrate understanding in this facet, teachers then consider how CLD students might use language differently to demonstrate understandings based on their unique and diverse linguistic backgrounds and abilities. For example, students at earlier stages of language proficiency might explain understandings by *sequencing* ideas and events, using simple sentences and adverbial cues such as *first*, *next*, *then*, and *finally*; whereas those in later stages might *synthesize* those same ideas and events in more complex sentences using relationship verbs such as *entail* and *consist of,* and quantifiers such as *almost all* and *a good number of* (AACCW, 2010). Starting with what students can do with language, as described in Chapter 3, effective practitioners analyze language to ensure that all students have equitable opportunities to explain their understandings regardless of their language proficiency, as well as consider how students might use their native languages and cultural background knowledge to support their explanations.

Interpretation

The second facet of understanding, *interpretation*, emphasizes students' use of receptive language via listening and reading of "narratives, translations, metaphors, images, and artistry that provide meaning" (McTighe & Wiggins, 2004, p. 155). In addition to receptive language, students articulate these interpretations through speaking and writing, thus merging language domains in a way that emulates real-world practices with texts and tasks. Wiggins and McTighe (2005) explain that true understanding means that "we can interpret [to] tell meaningful stories, offer apt translations, provide a revealing historical or personal dimension to ideas and events, [and] make the object of understanding personal or accessible through images, anecdotes, analogies, and models" (p. 84). Divergent from comprehension questions requiring rote recall of story elements and events after listening to or reading a text passage, interpretation as a facet of understanding focuses on making meaning, gaining insight, and drawing conclusions based on ideas and events, specifically connecting to past and current experiences and perspectives.

When considering this facet of understanding with a lens on language, we recognize the language needed to demonstrate learning through interpretation across the domains of listening, speaking, reading, and writing. *Interpretation* as a language function requires that students use "phrases, sentences, or symbols to express understanding of the intended or alternate meaning of information" (AACCW, 2010, p. 3). However, students also tap into additional language functions—such as identifying, retelling, summarizing, critiquing, and evaluating (see Figure 4.1)—to accomplish the larger purpose of interpretation as a facet of understanding (AACCW, 2010; Wiggins & McTighe, 2005, 2011). By critically considering the complexity of language functions and related features needed to interpret stories, ideas, and events, teachers can provide equitable access to transfer and meaning goals. Whereas some students might develop and express interpretations through symbols and illustrations paired with high-frequency words and phrases, others might incorporate technical words and figurative language (AACCW, 2010).

In addition to linguistic considerations related to language domains, functions, and features, we must pay particular attention to culture when approaching this facet of understanding. As Wiggins and McTighe (2005) remind us, meaning is in the eye of the beholder; in other words, we all approach, transact, and make meaning of tasks and texts in our own ways (Rogoff, 2003; Rosenblatt, 2004). As described in Chapter 3, culture shapes students' sociocultural and cognitive dimensions with interpretations influenced by the rich diversity in background knowledge and habits of mind derived from homes, communities, and schools. In addition to cultural background knowledge and schema, consider how culture shapes students' language use in interpretation. For example, when asked to interpret and tell meaningful stories, students may tap into unique cultural

approaches to storytelling that differ from the linear approach of mainstream American traditions (Heath, 1983). By analyzing the language involved in interpretation, teachers build awareness of how learners' multiple dimensions influence understanding (Herrera, 2016).

Application

The third facet of understanding, *application*, involves students' authentic and integrated use of knowledge and skills in real-world situations spanning diverse settings. Wiggins and McTighe (2005) describe it this way: "When we truly understand, we can apply [and] effectively use and adapt what we know in diverse and real contexts—we can 'do' the subject" (p. 84). Rather than superficially demonstrating understanding on a worksheet or a paper-and-pencil test, students engage in language-rich tasks in which they apply knowledge and skills in meaningful and diverse contexts. When given the opportunities to tackle practical problems and realistic tasks situated outside of classrooms and schools, students engage in decision making, problem solving, and performances that merge listening, speaking, reading, and writing (O'Malley & Pierce, 1996). Whether applied in mathematics, science, social studies, language arts, or another content area, this facet of understanding has the potential to tap into students' interests and background knowledge while simultaneously mediating learning and language development with hands-on tools and materials.

Application as a facet of understanding is context dependent (Wiggins & McTighe, 2005), resulting in varied language usage depending on the situation. With the emphasis on real-world tasks and problems, students use language connected to cognitive processes and academic content when they integrate and apply knowledge and skills to adapt, build, create, design, and perform (Wiggins & McTighe, 2011). For example, if students' understanding of a social studies unit manifests in the creation of a museum exhibit chronicling the hardships of pioneer life, students might use language to identify, label, sequence, organize, summarize, and synthesize; however, when students apply scientific learning by building switches for model railroads, language functions might include enumerating, inquiring, predicting, hypothesizing, and evaluating (McTighe & Wiggins, 2004). When adding a linguistic lens to this facet of understanding, we can better conceptualize the complexity and dynamism of how students use language in disciplinary learning. As discussed in Chapter 2, language cannot be easily dichotomized or separated into categories, such as *social* versus *academic* language. Consider how students might use language as they collaboratively create museum exhibits or build railroad switches, using multiple language functions to brainstorm ideas, discuss and seek out classroom materials, and negotiate procedures and project organization. Students mix various communicative and academic language functions as they engage in learning.

In addition to language functions, other linguistic features may emerge as demanding when considering the nature of this facet of understanding, particularly in relation to the push for students to apply learning to new problems and diverse situations (Wiggins & McTighe, 2005). With transfer and meaning goals centering on application for understanding, teachers might expect students to employ knowledge and skills in novel contexts, but some may lack the cultural and linguistic background knowledge needed to engage with those contexts and achieve instructional goals. For example, consider a mathematics unit with goals focused on applying knowledge and skills to real-world problems, such as a contractor estimating the cost of drywall to draft a work proposal for a new homeowner (McTighe & Wiggins, 2004). In addition to the mathematical understandings, knowledge, and skills from the unit of study, students require particular background knowledge and related words, such as *contractor* and *drywall*, and discourse structures, such as *written proposal*. For students to be able to engage with this facet of understanding, teachers respond to individual students to support disciplinary learning and language development as embedded in the specific context and unit of study.

Perspective

The fourth facet of understanding, *perspective*, centers on students' use of receptive and productive language to develop and share "critical and insightful points of view" (McTighe & Wiggins, 2004, p. 155). The crux of this facet is that students recognize the complex and multifaceted nature of issues: questions and problems can be approached from multiple standpoints, and ideas and events can be perceived distinctly, depending on viewpoints. Wiggins and McTighe (2005) assert, "When we truly understand, we have perspective [to] see and hear points of view through critical eyes and ears [and] see the big picture" (p. 84). Moving beyond first-person language use in which they develop and share their own perspectives (e.g., I think, I believe), students demonstrate understanding by shifting to third-person points of view to critically consider, evaluate, and share the perspectives of others. Perspective as a facet of understanding has great potential in CLD settings, where multiple perspectives shaped by the rich array of cultures and languages are inherent in the classroom context.

Students use language in unique ways when taking perspectives to demonstrate understanding, with a variety and range of related language functions. When instruction includes opportunities to confront various viewpoints related to the big ideas of a unit of study, learners engage in comparing, contrasting, analyzing, inferring, arguing, persuading, and critiquing (AACCW, 2010; Wiggins & McTighe, 2011). In addition to the language of the particular content area and unit topic (which we explore in more depth later in this chapter), students use language functions and related features to consider and share multiple perspectives.

For example, *comparing* and *contrasting* require words, phrases, and sentences to distinguish among viewpoints on an issue and communicate the specific similarities and differences using coordinating conjunctions, such as *and, but, or,* and adverbials, such as *similarly, in contrast* (AACCW, 2010). Often requiring more complex language, *persuading* requires students to use discourse to present and support a particular position or idea, including expressions such as *in my opinion, it seems to me,* and adverbials such as *although* and *however* (AACCW, 2010). By adding a lens on language to this facet of understanding, teachers can ensure appropriate linguistic supports for all students to engage with the big ideas of the unit.

Building on these linguistic considerations, cultural implications tie to the various language functions of perspective taking. In short, some students may not be accustomed to the critical lens attached to this facet of understanding, depending on their cultural backgrounds, values, and traditions. If children and adolescents have been raised with the cultural expectation that they do not argue or critique established principles, ideas, or authorities, then they may lack cognitive and linguistic repertoires to appropriately use these language functions (Bunch, Kibler, & Pimentel, 2012). In addition to supporting language in this facet of understanding, consider deep-seated cultural schema that may influence students' ability to take perspective on a topic or issue. For example, consider an instructional unit focused on World War II in a diverse classroom context with both U.S.-born and immigrant students from nations including Russia, Korea, and Japan. Particularly for those with previous schooling in their countries of origin and exposed to ideologies and opinions of family and community members, students bring distinct viewpoints on the war's origins, events, and outcomes. To support all students in critically considering multiple perspectives, effective practitioners attend to these unique, diverse, and intersecting sociocultural, cognitive, and linguistic dimensions (Herrera, 2016).

Empathy

The fifth facet of understanding, *empathy*, pushes students to "get 'inside' another person's feelings and world view" (McTighe & Wiggins, 2004, p. 155). Distinct from perspective, in which students consider distanced, detached, and critical viewpoints on issues and events, empathy centers on our human capacity for warmth, compassion, and kindness to foster open-mindedness and intercultural consciousness. Wiggins and McTighe (2005) state, "When we truly understand, we can empathize [to] find value in what others might find odd, alien, or implausible [and] perceive sensitively on the basis of prior direct experience" (p. 84). The emphasis here is on bridging differences, helping students "to understand people whose values, views, and behavior are different from our own" (Calloway-Thomas, 2010, p. 18)—a facet integral to building classroom community in CLD settings, as

well as designing instruction that prepares students for our diversifying and globalizing world.

Because empathy is complex, it requires multifaceted language functions to achieve transfer and meaning goals (Calloway-Thomas, 2010). Spanning receptive and productive language domains, empathetic learning goals engage students in *listening* and *reading* to make meaning of the experiences of others, as well as producing *speech* and *writing* to describe and explain their emotions, opinions, and identities. In initial stages of empathy, learners use language to *compare* themselves to others, specifically to recognize similarities as a starting place for understanding (e.g., We are around the same age). Next, they *inquire* into the experiences of others to be able to figuratively enter into someone's world (e.g., Who is this person? What is he feeling? How might I feel if this were me?). Students then attempt to express another's experiences, often needing to first *infer* current emotions and *predict* future behaviors based on available information, and then *describe* and *explain* these sentiments and actions as situated in another's values and worldviews. Due to the complexity of human emotions, including ample nuances and shades of meaning—as illustrated in the terms *sad, depressed, devastated, heartbroken*—students across levels of language proficiency use various words, phrases, and sentences to demonstrate their understanding.

Self-Knowledge

The sixth facet of understanding, *self-knowledge* requires students to consider their individual understandings and misunderstandings by deconstructing their own identities, lenses, and biases. Understanding in this facet centers on *metacognition*, or students' thinking about their own thinking and reflection on their learning. Wiggins and McTighe (2005) assert, "When we truly understand, we… have self-knowledge [to] show metacognitive awareness; perceive the personal style, prejudices, projections, and habits of mind that both shape and impede our own understanding; are aware of what we do not understand; [and] reflect on the meaning of learning and experience" (p. 84).

The focus on self-knowledge in UbD instruction provides inordinate value and opportunity with CLD students, as this particular facet emphasizes students' individual identities as shaped by their native languages, cultural backgrounds, and corresponding values, traditions, and experiences. By reflecting upon understandings, knowledge, skills, and habits of mind, students can recognize their unique and diverse identities as individuals, influenced by myriad factors inside and outside of school. In addition to embracing students' cultural and linguistic identities, self-knowledge as a facet of understanding can support learners' motivation, engagement, and autonomy.

When adding a lens on language development, this facet of understanding appears to provide more opportunities than challenges for CLD students. Due

to the nature of self-knowledge, students demonstrate understanding by sharing their own thoughts and reflections, which automatically taps into students' background knowledge and incorporates a first-person singular perspective (e.g., I think, I believe). From an affective standpoint, students often feel more comfortable taking risks with language when speaking and writing about themselves (Herrera, 2016; O'Malley & Pierce, 1996). In addition to these opportunities to reduce students' affective filter by tapping into personal and cultural background knowledge, teachers can differentiate the linguistic complexity of how students demonstrate understanding. For example, emergent ELs can reach desired results and self-assess using simple sentences and familiar words and phrases, whereas more advanced students can incorporate more complex sentences, verb tenses, and vocabulary terms.

In addition to having learners demonstrate understanding of self-knowledge in English, effective practitioners consider and tap into students' L1 and language varieties. Returning to the abundant theories and research regarding the value of students' L1 shared in Chapter 3, teachers adding a language lens on Stage 1 goals should also consider the role of native language. Students' native languages should be perceived as resources for all facets of understanding, but self-knowledge, in particular, requires giving priority to languages and language varieties other than English. Because many CLD students think in their L1, in the act of thinking about thinking, we must embrace their preferred linguistic medium of cognition. Additionally, the metacognitive focus of this facet presents valuable opportunities for teachers to explicitly build *metalinguistic awareness*, which involves students reflecting upon their own language use and learning to recognize and use the transfer of linguistic knowledge and skills across languages (Bialystok, 1993; Nagy & Anderson, 1995).

Teachers are not expected to use all six facets of understanding in every lesson. Instead, we encourage looking for natural opportunities to employ one or more of the facets in support of disciplinary and linguistic outcomes.

Language Demands Within Disciplines: A Linguistic Lens

Whereas language *functions* are similar across school-based learning experiences, language *features* vary significantly within particular disciplines. In this section, we consider discipline-specific language at the discourse, sentence, and word/phrase levels (see Figure 4.2). *Discourse-level* language features center on overall linguistic complexity, or the quantity, density, variety, and organization of oral and written texts (WIDA, 2012). Complex texts and classroom discourse tend to be longer, with varied sentence types, multiple ideas per sentence, inclusion of nonessential ideas, and higher-level text structures (AACCW, 2010).

Sentence-level features include types, structures, conventions, and mechanics of sentences (WIDA, 2012). More intricate syntax includes long sentences with modifying words, phrases, and clauses, as well as use of progressive and perfect verb tenses (AACCW, 2010). *Word-level* demands focus on the specificity of words and phrases, such as vocabulary terms, multiple-meaning words, and figurative language (WIDA, 2012). Complex lexicons include nuances and shades of meaning, as in closely related verbs or adjectives, and collocations, or common sequences of words.

Figure 4.2 | **Features of Academic Language**

The features of academic language operate within sociocultural contexts for language use.

	Performance Criteria	Features
Discourse Level	**Linguistic Complexity** *(Quantity and variety of oral and written text)*	Amount of speech/written text Structure of speech/written text Density of speech/written text Organization and cohesion of ideas Variety of sentence types
Sentence Level	**Language Forms and Conventions** *(Types, array, and use of language structures)*	Types and variety of grammatical structures Conventions, mechanics, and fluency Match of language forms to purpose/perspective
Word/Phrase Level	**Vocabulary Usage** *(Specificity of word or phrase choice)*	General, specific, and technical language Multiple meanings of words and phrases Formulaic and idiomatic expressions Nuances and shades of meaning Collocations
The sociocultural contexts for language use involve the interaction between the student and the language environment, encompassing the… • Register • Genre/Text type • Topic • Task/Situation • Participants' identities and social roles		

Source: Based on WIDA ELP Standards © 2007, 2012 Board of Regents of the University of Wisconsin System. WIDA is a trademark of the Board of Regents of the University of Wisconsin System. For more information on using the WIDA ELD Standards please visit the WIDA website at *www.wida.us*. Used with permission.

In unique and diverse educational contexts, students use language in distinct ways when they are engaged in learning around discipline-specific topics via particular texts and classroom tasks (Zwiers, 2014). To support teachers in analyzing

Stage 1 goals with a lens on language, we now explore the linguistic features of mathematics, sciences, social studies, language arts, and other disciplines and units of study.

Mathematics

As a school-based discipline, mathematics refers to the study of "numbers, quantities, and shapes and the relations between them" (https://www.merriam-webster.com/dictionary/mathematics). Ranging from numerical and spatial sense in kindergarten to advanced algebra, trigonometry, and calculus in high school, the breadth and depth of mathematics teaching and learning center around building enthusiasm and value for core mathematical practices, skills, and concepts to yield real-world problem solvers (CCSSO & NGA, n.d.). Despite its direct association with numbers, equations, and variables, mathematics as a discipline centers on language—both inside and outside of schools. As teacher Kay Toliver (1993), a nationally known middle school mathematics teacher in Spanish Harlem in New York City, consistently asserted, mathematics is a communication art. Thus mathematical teaching and learning require listening, speaking, reading, writing, touching, and creating, grounded in students' cultures and experiences. Scholars have also described the unique language needed to engage in mathematical practices, referred to as the mathematics register, or the "subset of language composed of meaning appropriate to the communication of mathematical ideas" (Kersaint, Thompson, & Petkova, 2013, p. 36). Thus, students predict, explain, justify, hypothesize, and evaluate mathematical practices and concepts using language specific to the academic discipline of mathematics (Cloud, Genessee, & Hamayan, 2009). See Figure 4.3 for a sampling of language demands in mathematics.

Typically spiraled across K–12 curricula, various fields of study exist within the larger discipline of mathematics, such as algebra, geometry, and statistics. Within the different mathematical fields and units of study, students use language in distinct ways to engage in authentic content learning. The study of algebra relies heavily on equations that intermix numbers, symbols, and variables (e.g., $y = 2x + 6$), in addition to narrative text in the form of word problems and directions (e.g., "Write an equation in slope-intercept form…"). In geometry, students write geometric proofs to explain and argue theorems, which incorporate specific text structures (e.g., two-column proof) with varied features (e.g., figures, statements, reasons), as well as punctuation and complex sentences (e.g., "When a segment is bisected, the two resulting segments are congruent"). Statistics instruction uses texts with features such as dot plots, box plots, scatter plots, histograms, and frequency tables, and requires students to use language to summarize, interpret, infer, and justify with language features such as conditional structures (e.g., if A, then B) and logical connectors (e.g., such that, thus,

therefore). Instruction also engages students in mathematical practices and communication around concepts including numbers, operations, ratios, proportions, measurement, and models, each requiring specific language functions with related text structures, classroom discourse patterns, sentence constructions, and unique phrases and words (Moschkovich, 2013).

Figure 4.3 | **Examples of Language Demands in Mathematics**

Component	Feature	Examples
Discourse	Amount of speech/text	Short texts with up-down and left-right reading
	Structure of speech/text	Intermixing of words, numbers, variables, symbols
	Density of speech/text	Conceptually packed, high density of unique words
	Organization of ideas	Varying text features (graphs, charts, diagrams)
Sentence	Sentence types	Passive voice: *A ball is dropped from 100 feet.*
	Sentence structures	Cause-effect, reason-result, chronological
	Logical connectors	*if and only if, such that, consequently*
	Lexical bundles	*as much as, greater than or equal to, such that*
	Use of prepositions	*divided by, divided into; percent off, percent of*
Word	Discipline-specific words	*hypotenuse, parabola, isosceles, coefficient*
	Discipline-specific phrases	*greatest common factor, least common multiple*
	Words used in new ways	*mean, carry, odd, table, column, set, prime, foot*
	Synonyms	*subtract, minus, less; add, plus, combine, sum*
	Idioms	*ballpark figure, split fifty-fifty, on the hour*

To support students' language development and equitable access to the depth and breadth of mathematical understandings, concepts, and processes, effective practitioners deconstruct the unique linguistic demands within each unit of study. Consider the high school geometry unit in Figure 4.4, which is focused on real-world mathematical problem solving with the use of two- and three-dimensional geometric objects and related formulas for volume. Using the transfer and meaning goals for the unit, we can add a lens on language to ensure that all students have equitable access to reach these desired results. For example, to synthesize attributes and relationships of geometric objects, students use

Figure 4.4 | **Transfer and Meaning Goals for a High School Geometry Unit**

<table>
<tr><th colspan="3">Stage 1 – Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="4">CCSS Math (GMD.B.3, GMD.B.4, MG.A.3)
• Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
• Identify the shapes of 2D cross-sections of 3D objects, and identify 3D objects generated by rotations of 2D objects.
• Apply geometric methods to solve design problems.</td><td colspan="2">Students will be able to independently use their learning to…
• Synthesize the attributes and relationships of geometric objects.
• Adapt mathematical methods and models to investigate dynamic geometric phenomena.
• Solve real-world problems using mathematical reasoning.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that…
• The adaptation of mathematical models and ideas to human problems requires careful judgment and sensitivity to impact.
• Mapping three dimensions onto two (or two onto three) may introduce distortions.
• Sometimes the best mathematical answers are not the best solutions to real-world problems.</td><td>Essential Questions
Students will keep considering…
• How well can pure mathematics model messy, real-world situations?
• When is the best mathematical answer not the best solution to a problem?</td></tr>
</table>

Source: From *Understanding by Design Professional Development Workbook* (p. 11), by J. McTighe and G. Wiggins, 2004, Alexandria, VA: ASCD. Copyright 2004 by ASCD. Adapted with permission.

discourse to describe attributes and explain relationships between objects. Such discourse includes relationship verbs (e.g., entail, consist of); partitive grammatical constructions—that is, phrases indicating partialness (e.g., a segment of, a portion of); quantifiers (e.g., some, almost all); technical academic terminology (e.g., tetrahedron, vertex, oblique); and multiple-meaning words (e.g., volume, face, cone) (AACCW, 2010). In addition to tasks, the unit goals reference texts to mediate learning, specifically word problems that ask students to solve real-world problems by applying their understandings of geometric principles and concepts. Word problems typically feature discourse that is packed with concepts, and diagrams that require multiple readings. They often use sentence constructions with the passive voice and combine various types of language—including social, academic, and technical words and phrases—into a brief narrative. To achieve the transfer and meaning goals of the unit, students must be able to access and develop the related language functions and features.

Science

Science is defined as the "systematic gathering of information through various forms of direct and indirect observations and the testing of this information by methods including, but not limited to, experimentations" (National Science Teachers Association, 2000, p. 1). Whereas science is typically approached as a broad content area in self-contained elementary classrooms, secondary settings hone in on particular areas, such as biology, chemistry, physics, and earth sciences. Crosscutting scientific concepts and practices span the sciences, which require students to use academic registers of scientific disciplines. As students grapple with scientific ideas and questions across fields, they use particular language functions as they identify questions, define problems, organize investigations, hypothesize findings, analyze and interpret data, synthesize findings, argue from evidence, and evaluate information (AACCW, 2010; National Research Council, 2013). Central to teaching and learning in science classrooms is the notion of scientific inquiry that mirrors the authentic practices of scientists as they study and develop ideas about nature and the universe, including the use of language to inquire, discover, and communicate via oral language, reading, and writing (Nutta, Bautista, & Butler, 2011). See Figure 4.5 for a sampling of language demands in science.

Schools typically organize the study of sciences into subjects in the fields of life, physical, and earth and space sciences (Nutta, Bautista, & Butler, 2011). Across fields, students use similar language functions aligned to scientific practices and processes (e.g., analyze, interpret, argue, evaluate), as well as common text structures and organization (e.g., diagrams, tables, graphs, pictures, figures) and complex sentence structures with frequent use of the passive voice. In the life sciences, which focus on characteristics, processes, and interactions of living organisms, students use species names (e.g., soapberry bug, or jadera haematoloma),

multiple-meaning words (e.g., cell, base, bonds, branch), abbreviations (e.g., ES cells, iPS cells), and morphological constructions (e.g., solution, solute, solvent, soluble; hydrogen, hydroxide, hydronium). In the physical sciences, which focus on the physical and chemical properties of objects and materials, students solve real-world problems (e.g., speed of moving cars, chemistry of airbags) by integrating scientific principles and concepts (e.g., Newton's laws, Dalton's laws) with corresponding mathematical equations (e.g., using variables, symbols, numbers). Within earth and space science, instruction promotes inquiry spanning various areas of study, including astronomy, meteorology, geology, oceanography, and environmental sciences, each with its own academic register. In disciplines across science, technology, engineering, and mathematics (STEM), language demands also emerge as students maneuver measurement systems to investigate and solve problems, including length (e.g., millimeter, centimeter), mass (e.g., gram, metric ton), temperature (e.g., kelvin), and substance (e.g., mole).

Figure 4.5 | **Examples of Language Demands in Science**

Component	Feature	Examples
Discourse	Amount of speech/text	Extended lectures, long texts, and passages
	Structure of speech/text	Varied structures (lab report, summary, glossary)
	Density of speech/text	Dense textbooks often written above grade level
	Organization of ideas	Varied text features (illustrations, diagrams, photos)
Sentence	Sentence types	Complex sentences with multiple embedded clauses
	Sentence structures	Cause-effect, problem-solution, compare-contrast
	Verb tenses	Conditional tense (what *could* or *might* happen)
	Logical connectors	*because, therefore, unless, consequently*
	Lexical bundles	*in the form of, as a result of, the nature of*
Word	Discipline-specific words	*organism, symbiosis, tsunami, conductivity*
	Discipline-specific phrases	*gravitational potential energy, root mean square velocity*
	Words used in new ways	*matter, gas, space, order, solution, wave, crust*
	Nominalizations	*observe/observation; analyze/analysis*

To engage all students in authentic learning and corresponding language development around scientific understandings, concepts, and processes, teachers first consider the language of particular units of study. Consider the middle school

science unit shown in Figure 4.6, which integrates scientific fields for learners to grapple with big ideas and essential questions related to weather, climate, energy, and geography. To achieve the desired results—explaining weather patterns by drawing from multiple disciplines—students engage in various tasks and texts that require specific language. Classroom discourse includes expressions of cause and effect and other relationships between weather events, using language elements such as adverbials (e.g., as a result), and adverbs (e.g., frequently, evenly). Various demands emerge at the word level, including technical phrases and abbreviations (e.g., intertropical convergence zone, ITCZ), multiple-meaning words (e.g., front, cycle), morphological constructions (e.g., troposphere, stratosphere, mesosphere, thermosphere, exosphere; thermometer, barometer, anemometer, hygrometer), proper nouns (e.g., Doppler effect, Coriolis effect), and collocations (e.g., trade winds, jet stream). To mediate learning related to unit goals, students use a science textbook that integrates scientific narrative with complex sentences, weather maps with multiple symbols, tables showing characteristics of air mass, diagrams of the water cycle, and figures indicating global flows of air and water. To allow all students equitable access to the desired results of the unit, teachers should recognize and target these language demands.

Social Studies

Social studies education is "concerned with how people, past and present, live together" (Cruz & Thornton, 2013, p. 47). As we can tell from that definition, social studies as a discipline is expansive, including the fields of anthropology, archeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology (National Council for the Social Studies [NCSS], 2016). Within the breadth of this content area, K–12 teachers seek to build students' conceptual understandings, content knowledge, inquiry skills, and civic values that are "necessary for fulfilling the duties of citizenship in a participatory democracy" (NCSS, 2016, p. 1). Not surprising, given the disciplinary focus on the *social* components of society, language plays an integral role within social studies instruction, whether approached broadly in elementary settings or via specific courses within secondary settings, such as geography, world history, or Western civilization. Students use language to pose questions, investigate issues, solve problems, evaluate situations, communicate conclusions, and take informed action (NCSS, 2017). Using a variety of primary sources such as historical documents and photographs, and secondary sources such as textbooks and guidebooks, students use various linguistic registers related to the discipline of social studies as they seek to understand and grapple with social, historical, cultural, and economic ideas, concepts, and questions. See Figure 4.7 for a sampling of language demands in social studies.

Figure 4.6 | **Transfer and Meaning Goals for a Middle School Science Unit**

<table>
<tr><th colspan="3">Stage 1 – Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="3">NGSS MS ESS2, S2-5 & S2-6
• Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.
• Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</td><td colspan="2">Students will be able to independently use their learning to...
• Explain weather patterns by drawing from multiple disciplines, including earth, space, and physical science, as well as geography.
• Produce and use models to make meaning of scientific phenomena.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that...
• The unequal heating between the equator and poles, Earth's rotation, and the distribution of land and ocean generate the global wind patterns that determine climate.
• Most of what goes on in the universe involves some form of energy being transformed into another.
• Transformations of energy usually produce some energy in the form of heat, which spreads around by radiation and conduction into cooler places.</td><td>Essential Questions
Students will keep considering...
• What causes weather and wind patterns?
• What factors affect climate?
• How do events in one geographical area affect another?
• How does climate affect agriculture?
• How can I apply these factors to locations on Earth to determine the climate?</td></tr>
</table>

Source: From *Understanding by Design Professional Development Workbook,* (p. 42), by J. McTighe and G. Wiggins, 2004, Alexandria, VA: ASCD. Copyright 2004 by ASCD. Adapted with permission.

Figure 4.7 | **Examples of Language Demands in Social Studies**

Component	Feature	Examples
Discourse	Amount of speech/text	Extended lectures, long texts, and passages
	Structure of speech/text	Mixing of various sentences types and structures
	Density of speech/text	Mixing of proper, common, and temporal nouns
	Organization of ideas	Varied text features (maps, photos, time lines)
Sentence	Sentence types	Passive construction, indirect/reported speech
	Sentence structures	Chronological, compare-contrast, cause-effect
	Logical connectors	*from that time forward, by the 20th century*
	Lexical bundles	*at the same time, as a result of, the fact that*
Word	Discipline-specific terms	*medieval, revolutionary, patriotism, superdelegate*
	Discipline-specific phrases	*substantive due process, wholly owned subsidiary*
	Words used in new ways	*period, party, assembly, market, depression, cycle*
	Nominalizations	*explore/exploration; occur/occurrence*
	Collocations	*rich culture, strong opponent, heavy rain*
	Use of abbreviations and acronyms	*WWI, NAFTA, WPA, SEC, NRA, OMB*

Various fields of study exist within the larger discipline, including geography, U.S. history, world history, government and civics, economics, anthropology, sociology, and psychology (Cruz & Thornton, 2013). Within the study of these disciplines, students use language in varied ways to actively participate in learning. In history, students engage in learning via primary and secondary sources about historic events possibly unrelated to their own life experiences, with ample details including names, dates, places, concepts, and systems (e.g., Industrial Revolution, John D. Rockefeller, capitalism, manufacturing). In geography, students use maps, visuals, and texts to learn specific geographical features (e.g., Mississippi River), to generalize classes of phenomena (e.g., rivers versus streams, creeks, and brooks), and to make inferences based on learning (e.g., why people live near rivers). Civics education engages students in political processes and concepts that might be distinct from those in students' countries of origin (e.g., democracy, Electoral College, straw poll), while incorporating everyday words in political discourse (e.g., left, right, party, lobby, house). Whether interwoven with other fields of social studies in elementary and middle school or explicitly targeted in high school, the study of economics includes words and abbreviations tied to economic concepts

(e.g., gross domestic product, or GDP), sentence structures and connectors indicating relationships (e.g., based on, were seen as), and text narrative connected to features such as economic models (e.g., supply and demand curves). Other focal areas in social studies, such as anthropology, sociology, and psychology, have their own nuanced language functions and features, as well as pertinent and culturally specific background knowledge needed to engage with content.

Across the fields and units of study within the broader discipline of social studies, there are complex and diverse features across discourse, sentence, and word/phrase levels to purposefully develop students' language and allow equitable access to learning. Consider the integrated social studies unit of study in Figure 4.8, written for intermediate grades in the elementary setting and focused on the American pioneer spirit across history. When analyzing transfer and meaning goals with a lens on language, specifically those related to comparisons between pioneers from earlier times and the present day, ample demands become apparent, beginning with the dual definitions of *pioneer* upon which the unit is based. To achieve the unit goals and express similarities and differences between historical accounts and current events, students must tap into discourse patterns that include coordinating conjunctions (e.g., and, but, yet, or) and adverbials (e.g., similarly, likewise, instead) (AACCW, 2010). The comparisons of past and present also require discipline-specific classroom discourse including an intermixing of verb tenses, as well as culturally specific background knowledge of U.S. history, society, geography, and cultures. To grapple with the essential questions of the unit, students interact with various texts spanning multiple genres and media, including historical documents, oral histories, letters, photographs, time lines, and maps. Each text has distinct features and varying types of sentences, grammatical constructions, phrases, and words needed to access the stories and ideas related to the pioneer spirit.

Language Arts

The overarching discipline of language arts focuses broadly on the teaching and learning of English through listening, speaking, reading, writing, viewing, and visually representing (Roe & Ross, 2005). Various terminology identifies this content area, including *literacy*, *language arts*, and *English*. The prototypical term in primary grades is *literacy*, which engages students in balanced instruction across language domains with varied grouping strategies for reading and writing (e.g., read aloud, guided reading, independent reading). *Language arts* is the common terminology in intermediate grades, where students engage in integrated learning spanning language, literacy, literature, and visual arts. Secondary education settings often organize instruction around separate components, such as English classes focused on reading or literature, writing or composition. Despite the explicit focus on language inherent in this discipline, students encounter

Figure 4.8 | **Transfer and Meaning Goals for an Elementary Social Studies Unit**

<table>
<tr><th colspan="3">Stage 1 - Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="3">• Students pose relevant questions about events they encounter in historical documents, eyewitness accounts, oral histories, letters, diaries, artifacts, photographs, maps, artworks, and architecture.
• Students trace why their community was established, how individuals and families contributed to its founding and development, and how the community has changed over time, drawing on maps, photographs, oral histories, letters, newspapers, and other primary sources.</td><td colspan="2">Students will be able to independently use their learning to...
• Seek out, compare, and critique different historical accounts.
• Compare the lives of pioneers on the prairie and pioneers of today.
• View interactions of civilizations, cultures, and peoples with greater perspective and empathy.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that...
• Many pioneers had naïve ideas about the opportunities and difficulties of moving west.
• People move for a variety of reasons—for new economic opportunities, greater freedoms, or to flee something.
• Successful pioneers rely on courage, ingenuity, and collaboration to overcome hardships and challenges.
• The settlement of the West threatened the lifestyle and culture of Native American tribes living on the plains.
• History involves making sense of different stories.</td><td>Essential Questions
Students will keep considering...
• Why do people move? Why did the pioneers leave their homes to head west?
• How do geography and topography affect travel and settlement?
• What is a pioneer? What is pioneer spirit?
• Why did some pioneers survive and prosper while others did not?
• Whose story is it?
• What happens when cultures interact?</td></tr>
</table>

Source: From *The Understanding by Design Guide to Creating High-Quality Units* (p. 29), by G. Wiggins and J. McTighe, 2011, Alexandria, VA: ASCD. Copyright 2011 by Grant Wiggins and Jay McTighe. Adapted with permission.

ample and diverse linguistic demands as they maneuver copious amounts of language and literacy across multiple genres and mediums. Instruction should be organized around authentic learning experiences that engage learners in literacy practices, such as informing, analyzing, critiquing, and arguing via complex texts, varied perspectives, and meaningful interaction. Within these language-rich classrooms, it is important to maintain precise attention to language demands, particularly for CLD students (Bunch et al., 2012). See Figure 4.9 for a sampling of language demands in language arts.

Figure 4.9 | **Examples of Language Demands in Language Arts**

Component	Feature	Examples
Discourse	Amount of speech/text	Amounts vary by genre (poetry, autobiography)
	Structure of speech/text	Variety of sentence types and verb tenses
	Density of speech/text	Linguistic abstraction with figurative language
	Organization of ideas	Features vary by genre (graphic novel, nonfiction)
Sentence	Sentence types	Compound, complex, compound-complex
	Sentence structures	Temporal, comparison, cause and effect
	Verb tenses	Present, past, and future progressive and perfect
	Conventions and mechanics	Punctuation marks, capitalization rules
Word	Discipline-specific words	*fable, rhyme, interjection, onomatopoeia, homonym*
	Discipline-specific phrases	*exclamation point, thesis statement, logical fallacy*
	Multiple-meaning words	*period, blend, mood, pitch, stress, style, shift*
	Synonyms	*happy, blissful, jovial, elated, cheerful, delighted*
	Nominalizations	*write/writing, illustrate/illustration*
	Shades of meaning	*acquaintance, ally, friend, confidant*
	Figurative language	simile, metaphor, onomatopoeia, personification
	Idiomatic expressions	*burn bridges, spill the beans, feeling blue, on thin ice*

Because of the broad focus of language arts as a discipline, language demands vary depending on the genre, subgenre, and form used to mediate oral language, reading, and writing. *Nonfiction* increasingly serves as the vehicle for teaching and

learning, as students make arguments and cite evidence with informational texts, persuasive essays, autobiographies, and biographies. Distinct from other nonfiction, *biographies* often use sequential historical discourse, third-person point of view, complex sentences with multiple clauses, and both present and past tense (Ranney, Dillard-Paltrineri, Maguire, & Schornack, 2014). Using a variety of *fiction*, including realistic, historical, and science fiction, students interpret, relate, and recount elements and events of various texts. In addition to the varying use of language across fictional subgenres, form influences linguistic demands, such as the unique text features used in graphic novels (e.g., captions, speech balloons, internal versus external dialogue, special-effects lettering) (Ankiel, 2016). In instruction focused on poetry, students recite, represent, interpret, explain, and produce various forms of poems (e.g., haiku, free verse, sonnet); whereas poetic use of figurative language remains a relatively consistent language demand across the genre, other linguistic features vary based on the poem (e.g., structure, organization of ideas, grammatical clauses/stanzas, verb tenses, punctuation). *Folklore* as a genre, including myths, legends, tall tales, fairy tales, and fables, also demonstrates variation across texts and resulting tasks, which present particular challenges for ELs—for example, when they rely on literal interpretations of tall tales or need additional background knowledge to make meaning of culturally situated legends. Regardless of the text or task, additional demands stem from the needed and often assumed background knowledge that enables students to access big ideas, develop understandings, and grapple with essential questions.

To ensure equitable access to the language arts curriculum while simultaneously supporting students' language development, consider how language is used within each unit in terms of the literary genre and related tasks. In Figure 4.10, the unit centers on *The Catcher in the Rye* (Salinger, 1951), which has been deemed to be "one of the handful of essential American books" (Bloom, 2007, p. 25). Living in mid–20th century Manhattan, adolescent protagonist Holden Caulfield narrates the four-day series of tangible and psychological events following his departure from an elite New York City prep school. Realistic fiction written in the form of a novel, the text structure is episodic, with a series of flashbacks throughout the 200-plus pages. Based on the publication date and the protagonist narration, the text has been characterized as a unique linguistic window into 1950s teenage vernacular, specifically the "informal speech of an intelligent, educated, Northeastern American adolescent" (Costello, 2000, p. 12). This discourse pattern leads to a variety of language demands, including words used in different ways (e.g., crap, crazy, killed), adjectivization (e.g., Christmasy, perverty, hoodlum-looking), profanity (e.g., bastard, sonuvabitch, goddam), and figurative language (e.g., sharp as a tack, feel like a horse's ass) (Costello, 2000). Connecting the linguistic analysis directly to the goals of the unit—specifically, the essential question about who is genuine versus phony, students must recognize narrator Holden's use of

Figure 4.10 | **Transfer and Meaning Goals for a High School English Unit**

<table>
<tr><th colspan="3">Stage 1 – Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="3">CCSS ELA-Literacy (RL.11-12.2 RL.11-12.5, W.11-12.1)
• Determine two or more themes or central ideas of a text and analyze their development over the course of the text.
• Analyze how an author's choices concerning how to structure specific parts of a text contribute to its overall structure, meaning, and aesthetic impact.
• Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.</td><td colspan="2">Students will be able to independently use their learning to...
• Read, comprehend, and critically analyze fictional texts.
• Consider and evaluate how fictional texts contribute to our broader understanding of real-life experiences.
• Craft arguments to persuade others to take a particular position or perspective.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that...
• Novelists often provide insights about human experience and life through fictional means.
• Writers use a variety of stylistic techniques to engage and persuade their readers.
• Holden Caulfield reflects common adolescent experiences but masks deep-seated personal problems about growing up and relating to others.</td><td>Essential Questions
Students will keep considering...
• What is the relationship between fiction and truth? What truths can best be rendered fictionally?
• Does Holden represent adolescence? Is he abnormal, or are all adolescents abnormal? Who is genuine and who is phony? Why do people act phony?
• How do authors hook and hold readers? How does J. D. Salinger engage you?
• How do writers persuade readers?</td></tr>
</table>

Source: From *Understanding by Design Professional Development Workbook,* (p. 64), by J. McTighe and G. Wiggins, 2004, Alexandria, VA: ASCD. Copyright 2004 by ASCD. Adapted with permission.

particular nouns (e.g., prince, angels), adjectives (e.g., grand, snobby, bourgeois), and phrases (e.g., traveling incognito, licorice stick, little girls' room) to describe characters and events (Costello, 2000, p. 18). To comprehend, consider, and craft arguments related to *The Catcher in the Rye*, students must be able to access the language of the mediating text and then use it to actively participate in unit tasks.

Other Disciplines

Whereas WIDA and other language proficiency standards typically focus on the core content areas just described, language spans all school disciplines, including world languages, electives, and special areas. Language functions, as well as the related word-, sentence-, and discourse-level features, should be considered for each discipline. Here we explore and provide examples for special-area courses.

Art education

Art education focuses instruction on visual and tangible arts (Latta & Chan, 2010). In addition to creating art, students use various discourse and syntax structures to critique, compare, analyze, and reflect on artistic works and processes. Text features include descriptive narratives and historical accounts of artwork, paired with visual images and numeric dates. A complex sentence construction for ELs involves passive voice, which artistic registers often use to describe the artwork itself, rather than active voice focused on the artist—for example, "The sketch was drawn in charcoal" rather than "Delacroix drew the sketch in charcoal." Equally difficult for ELs who interpret texts literally, discourse includes figurative language with metaphors, imagery, and symbolism describing works of art. Shades of meaning emerge in artistic language, including colors (e.g., white, ivory, pearl, cream, bone, eggshell) and other descriptive adjectives (e.g., big, huge, immense, vast, towering). Other word-level demands include discipline-specific vocabulary (e.g., acrylics, hue, monochromatic, expressionism), words used in new ways (e.g., contrast, media, rhythm, cool, warm), and nominalizations (e.g., abstract, abstraction). By embracing the visual and kinesthetic nature of the arts, a teacher can purposefully design instruction to foster students' language development while they are engaging in authentic learning.

Music education

Music education centers on learning about, listening to, and making music (Latta & Chan, 2010). In addition to singing and engaging directly with music, students also use language to describe and evaluate musical performances and to explain and justify various musical techniques. Written texts include textual narratives, as well as symbolic representations of musical elements, including lines, clefs, notes, rests, repetition, and codas, along with lyrics in the form of stanzas

that may not form complete sentences. The language of music education includes discipline-specific vocabulary within musical units of study (e.g., chord, instrument, orchestra, percussion, xylophone), as well as the consistent incorporation of words used in new ways (e.g., measure, signature, flat, bar, note). An interesting and unique facet of the language of music is the prevalence of words borrowed from other languages, such as Italian and French. For example, a unit focused on the elements of music might emphasize discipline-specific language derived from standard Italian (e.g., allegro, crescendo, forte, lento, moderato, tempo), whereas a unit merging music and dance would require disciplinary language from French (e.g., arabesque, chassé, jeté, pirouette, plié, sissonne). By tapping into the multimodal and interactive classroom setting, music teachers can embrace their central roles in fostering students' language development.

Physical education

Physical education prioritizes instruction in sports, exercise, and well-being (Constantinou & Wuest, 2015). Relying on oral language, students use varied skills in the domains of listening and speaking to actively participate in learning. Classroom discourse is often characterized by intermixing a variety of verb tenses (e.g., ran, run, will run, are running, have run), with students receiving and producing varied sentence structures to follow and give sequential directions and to compare and contrast sports and activities. To partake in activities, students maneuver prepositions of place (e.g., above, behind, between, on the left, inside, outside) and verbs with varying shades of meaning (e.g., walk, jog, run, sprint). Additionally, words are frequently converted and used as verbs and nouns (e.g., to throw the ball, make a good throw). Adjectives play an important role for students engaging in particular sports, such as recognizing the distinction between a penalty kick, a free kick, a corner kick, and a goal kick in soccer. Compound words (e.g., handball, baseball), discipline-specific vocabulary (e.g., dribble, calisthenics), and words used in new ways (e.g., pepper, flag) are also common in the language of physical education. By explicitly planning instruction with a lens on language, physical education teachers can maximize the low-anxiety and interactive learning setting to promote students' language development.

Acquisition Goals with a Lens on Language

In the previous sections we considered the language needed to engage in learning and understanding within and across disciplines. By analyzing transfer and meaning goals with a lens on language development, we aim to maintain rigorous results for all learners, building awareness and uncovering blind spots (particularly among English-dominant educators) on how language might serve as a gatekeeper to student learning. The purpose of our earlier linguistic analyses is not to shelter students from these linguistic demands and complexities, but instead

to purposefully define acquisition goals in order to (1) provide equitable access to transfer and meaning goals and (2) scaffold instruction to build the linguistic knowledge and skills needed to achieve the desired results in the unit of study. After analyzing Stage 1 goals for disciplinary language functions and features, teachers now use those analyses to respond to the following question: *What must students know and do with language to achieve the desired results, engage in active learning, and grapple with essential questions?* We explore acquisition goals with a lens on language in this section.

As described early in the chapter, *acquisition goals* focus on what students need to know and do to reach the larger transfer and meaning goals of the unit. Whereas transfer and meaning goals capture the wider applicability and deeper understandings that we desire for learners, knowledge and skill indicators are those pertinent substeps needed to achieve the larger outcomes. When we add a lens on language development, we explicitly define the language students must acquire to achieve the desired results of the unit, as connected to pertinent content-based knowledge and skills. Stemming from linguistic analyses of transfer and meaning goals, acquisition goals should focus on the linguistic knowledge and discrete skills needed to foster students' language development to engage in content learning (see Figure 4.11).

Figure 4.11 | **Acquisition Goals for Language Development**

Knowledge Indicators	Skill Indicators
• *Language features* needed to achieve transfer and meaning goals of the unit (e.g., text structures, classroom discourse patterns, sentence types, academic words and phrases)	• *Language functions* tied to cognitive processes (e.g., explaining, intepreting, arguing, critiquing, evaluating) • *Language domains* (listening, speaking, reading, writing) aligned to students' areas of need

Knowledge indicators in UbD are the *declarative knowledge* students must acquire by the end of the unit, including factual information, vocabulary, and basic concepts needed to reach the overarching transfer and meaning goals (Wiggins & McTighe, 2011). When adding a lens on language, we expand beyond vocabulary to consider the linguistic knowledge needed to engage in learning throughout the unit of study. To define acquisition goals, specifically the declarative knowledge related to language development, teachers analyze the linguistic features embedded in the unit, including those at the discourse, sentence, and word/phrase levels (WIDA, 2012). Rather than analyzing every task and text included in the

unit, we use the transfer and meaning goals to consider the language required for achieving the established goals, understanding the big ideas, and grappling with the essential questions. We then use this declarative knowledge of language to draft knowledge indicators that strategically target students' language development while simultaneously providing students equitable access to big ideas and understandings in the unit. By drafting knowledge indicators with a language lens, we aim to develop students' language and support their equitable access to content learning.

Skill indicators in UbD are the *procedural knowledge* students must acquire by the end of the unit, including basic know-how and discrete skills needed to reach transfer and meaning goals (Wiggins & McTighe, 2011). When adding a lens on language, we specifically consider the linguistic skills that students need to actively participate in learning and meaning making throughout the unit of study. To define acquisition goals, specifically the procedural knowledge related to language development, teachers first consider the language functions that students use while engaging in tasks and related cognitive processes, as tied to the six facets of understandings. Next, teachers consider the linguistic strengths and needs of students to prioritize students' language development across the four domains—listening, speaking, reading, and writing (see Figure 4.12). Teachers then draft skill indicators that pinpoint the pertinent language functions and domains to strategically develop students' language as authentically embedded in content learning. Skill indicators should align with knowledge indicators, to the extent that language functions require particular words and phrases, as well as sentence, grammatical, and discursive structures. By drafting skill indicators with a language lens, we aim to develop students' language skills and content skills simultaneously.

Figure 4.12 | **Sample Verbs by Language Domain for Skill Indicators**

Listening	Speaking	Reading	Writing
Identify	Produce	Identify	Communicate
Categorize	Express	Interpret	List
Sequence	Recite	Explore	Record
Follow directions	Describe	Classify	Produce
Recognize	Convey	Match	Create
Detect	Present	Infer	Compose
Distinguish	Discuss	Summarize	Explain
Evaluate	Explain	Critique	Justify

Consider the previously introduced high school mathematics unit focused on the attributes and relationships of geometric objects (see Figure 4.4). After defining and maintaining the desired results for disciplinary learning, the math teacher, Mrs. Peña, analyzes the transfer and meaning goals in order to uncover her linguistic blind spot as an expert mathematician. In so doing, she recognizes that students need to develop disciplinary language to achieve the transfer and meaning goals, including particular discourse (i.e., word problems), sentence constructions (i.e., relationship verbs, partitive grammatical constructions, quantifiers), and words (i.e., technical terminology, multiple-meaning words). To draft acquisition goals, she specifically considers the linguistic abilities of her sophomores who are primarily reclassified and long-term ELs, including Vinh. When pinpointing knowledge indicators, she focuses on disciplinary language such as math-specific, multiple-meaning words, rather than vocabulary like *cylinder* and *sphere* that students already know from previous units and courses. When drafting skill indicators, she prioritizes related language functions (e.g., compare, contrast) and domains most in need of development (e.g., read, compose). In this way, Mrs. Peña embeds language development in disciplinary learning, specifically targeting the learning and development of her CLD students. Figure 4.13 shows the geometry unit resulting from Mrs. Peña's efforts.

In summary, Stage 1 with a lens on language begins by analyzing the language needed to access the transfer and meaning goals, which remain the same for all learners. The preliminary linguistic analysis then leads to the drafting of acquisition goals with a specific lens on the language that is tied to disciplinary learning. Knowledge indicators pinpoint the pertinent language features of texts and tasks, and skill indicators highlight the language functions that are connected to cognitive processing and skills. Additionally, skill indicators should target goals for listening, speaking, reading, and writing embedded in authentic learning and meaningful interaction around understandings and essential questions. Moving forward in future stages of the curricular planning process, the language-focused knowledge and skills indicated in Stage 1 of instructional design will guide the design of performance assessments in Stage 2 and of learning experiences in Stage 3.

Classroom Application: Language Development in Stage 1

Drawing from the lenses on language development in Stage 1 as described in this chapter, we now shift to consider the specifics of classroom application. In this section, we detail the steps to integrate language into Stage 1 of the UbD planning template to provide equitable access for all learners.

Figure 4.13 | **Stage 1 of a High School Mathematics Unit, Geometry**

<table>
<tr><th colspan="3">Stage 1 – Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="6">CCSS Math (GMD.B.3, GMD.B.4, MG.A.3)
• Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
• Identify the shapes of 2D cross-sections of 3D objects, and identify 3D objects generated by rotations of 2D objects.
• Apply geometric methods to solve design problems.</td><td colspan="2">Students will be able to independently use their learning to...
• Synthesize the attributes and relationships of geometric objects.
• Adapt mathematical methods and models to investigate dynamic geometric phenomena.
• Solve real-world problems using mathematical reasoning.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that...
• The adaptation of mathematical models and ideas to human problems requires careful judgment and sensitivity to impact.
• Mapping three dimensions onto two (or two onto three) may introduce distortions.
• Sometimes the best mathematical answers are not the best solutions to real-world problems.</td><td>Essential Questions
Students will keep considering...
• How well can pure mathematics model messy, real-world situations?
• When is the best mathematical answer not the best solution to a problem?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
<tr><td>Students will know...
• Mathematical formulas for calculating surface area and volume
• Cavalieri's Principle
• Related geometric terminology (e.g., face, edge, vertex, oblique)
• Related sentence constructions (e.g., relationship verbs)
• Discourse structures of word problems and solutions</td><td>Students will be skilled at...
• Calculating surface area and volume for various three-dimensional figures.
• Comparing and contrasting volumes of figures using Cavalieri's Principle.
• Reading and solving word problems by applying geometric formulas.
• Composing mathematical explanations to real-world problems.</td></tr>
</table>

Source: From *Understanding by Design Professional Development Workbook* (p. 11), by J. McTighe and G. Wiggins, 2004, Alexandria, VA: ASCD. Copyright © 2004 by ASCD. Adapted with permission.

Analyze Transfer and Meaning Goals for Language

Begin with *transfer goals*—long-term, authentic goals of independent learning; *meaning goals*—enduring understandings and essential questions; and *established goals*—content standards. Analyze the language that students need to achieve these goals, considering the topic, texts, and tasks, including language functions and related features at the discourse, sentence, and word/phrase levels. Consider the language demands in the unique context of your classroom, including how students' cultural and linguistic backgrounds and abilities influence language use and what they might or might not find linguistically challenging in the unit of study.

Prioritize Language That Is Pertinent to Engaging in Learning

Our earlier linguistic analysis of broader disciplines and specific units of study undoubtedly uncovered a number of language demands. In addition to general awareness of the language needed to engage in classroom instruction, prioritize language that is (1) *important* for students as they work to access the big ideas and grapple with essential questions across the unit of study, (2) *aligned* with needed cognitive processes and content learning and understandings, (3) *prevalent*, in that multiple students will find the language demanding in their attempt to engage with academic content learning, and (4) *versatile*, in that students can transfer and use knowledge and skills across units of study, disciplines, and settings.

Draft Knowledge Indicators to Target Language Demands

Write acquisition goals for the declarative knowledge—including factual information and basic concepts—that is related to the unit's transfer and meaning goals. Add the language lens to draft additional acquisition goals for declarative knowledge of language, drawing from analyses at the word, sentence, and discourse levels. Although these language-focused knowledge indicators may be added separately from content-specific knowledge indicators, they should be inherently connected in that the end goal is to build students' language to allow access to content learning.

Draft Skill Indicators to Identify Language Functions

Write acquisition goals for the procedural knowledge—including discrete skills and cognitive processes—related to the unit's transfer and meaning goals. Add the language lens to revise the skill indicators so that they prioritize language development through appropriate language functions and domains. Remember that the goal of writing skill indicators with a language lens is to develop students' language and content-specific skills simultaneously. Thus, each skill indicator

should include a *language function* and related *content stem*. Once all skill indicators are drafted, prioritize the specific language domains—listening, speaking, reading, writing—invoked by the verbs in the skill indicators.

Review Transfer and Meaning Goals to Ensure Equitable Access

Transfer and meaning goals should remain rigorous for all learners, with instructional plans that incorporate acquisition goals to ensure equitable access to those high expectations regardless of language proficiency. Nonetheless, all students should be able to access the goals themselves, particularly to grapple with the essential questions across the unit of study. In reviewing essential questions with a lens on language, analyze for word- and sentence-level language demands and reword to avoid possible language demands that would limit access, as illustrated in Figure 4.14. You might also provide essential questions in students' native languages.

Figure 4.14 | **Sample Essential Questions with Demanding Language**

Language Demands	Sample Essential Questions Needing Revision
Words	What do effective problem solvers do when they get *stuck*? Why did the pioneers leave their homes to *head* west? What is the role of *serendipity* in scientific advances?
Idioms	How do you read between the lines? If practice makes perfect, what makes perfect practice? To what extent is the pen mightier than the sword?
Sentence/Grammar Structures	How does art reflect, as well as shape, culture? How are stories from other places and times about me? What couldn't we do if we didn't have or couldn't use numbers?
Passive Sentence Construction	Whose story is it? Why is that there? Is there a pattern?

Source: From *Understanding by Design Professional Development Workbook* (pp. 8–9, 90–91, 93–101), by J. McTighe and G. Wiggins, 2004, Alexandria, VA: ASCD. Copyright 2004 by ASCD. Adapted with permission.

Revise Acquisition Goals to Foster Language Development

Consider the formal and anecdotal data on students' backgrounds, strengths, and needs, particularly the language proficiencies and abilities of your ELs, as described in Chapter 3. Using overall language proficiency as a guide, revise

knowledge indicators to ensure appropriate goals for language development based on proficiency levels. Using domain-specific assessment data, revise *skill indicators* to target language functions and domains based on what students *can do* with language, as well as where they need additional support on the path to language proficiency. (In addition to unit-level acquisition goals focused on the prioritized language demands, teachers target language at the lesson level through learning objectives. We explore lesson-level objectives further in Chapter 7.)

Classroom Snapshot: Setting Goals for Student Learning

Ms. Jillian Hartmann is a secondary science teacher at Theodore Roosevelt High School, a neighborhood public high school serving 1,500 9th through 12th graders on the northwest side of Chicago. Nestled in the culturally and linguistically diverse Albany Park community, the school welcomes students who speak 35 different languages, as well as multiple language varieties including AAVE and Chicano English. Seventy-five percent of the student body is Latino, making Spanish the primary LOTE spoken in homes, followed by Arabic, Tagalog, Burmese, Karen, Gujarati, Swahili, and Oromo, among others. Eighty percent of Roosevelt students use a LOTE at home, with approximately 25 percent labeled as ELs as measured by the ACCESS scores of English language proficiency. Students labeled as ELs range from newcomers recently arrived in the United States to long-term ELs who have been enrolled in Albany Park community schools since kindergarten. Organized by disciplinary departments, 80 teachers support the learning of the CLD student body, spanning mathematics, science, social studies, English, world languages, career and technical education, and the fine arts. Labeled ELs are typically placed in separate sheltered sections of content-area classes.

Ms. Hartmann teaches an array of classes within the science department, including one section of 9th grade sheltered biology, one section of 10th grade sheltered chemistry, one section of 10th grade chemistry, and two sections of mixed-grade earth and space science. In addition to the various branches of science and grade levels, her students vary significantly across periods. She works with 43 labeled ELs—20 in sheltered biology, 21 in sheltered chemistry, and 2 in earth and space science. Across her five class sections, students in her classroom come from households where 15 different languages are spoken. Thirteen of those learners are newcomers who have recently arrived in the United States and Chicago from a variety of countries around the world, including a number who have recently experienced trauma and loss. Before designing her instructional units of study, Ms. Hartmann considers these cultural and linguistic data, as well as the many other social, emotional, and academic factors influencing her adolescent students' learning and development. She pairs these considerations about

learners with her keen awareness that students need to develop particular disciplinary language to learn biology, chemistry, and earth and space science.

After teaching biology and chemistry in previous school years, Ms. Hartmann was recently assigned two sections of earth and space science, an area that was new to her professional repertoire as a high school science teacher. With her graduate degree focused on EL teaching and learning, she prepared for her new discipline with lenses on both content and language. As she dove into the curricular design for the school year and individual units of study, Ms. Hartmann maintained a language lens to recognize the disciplinary language needed to access scientific understandings, rigorous learning, and inquiry-based exploration. For example, in the unit focused on weather and climate (see Figure 4.15), she recognized that the transfer and meaning goals required disciplinary language, as exemplified when interpreting multiple sources of scientific evidence (e.g., maps, graphs, charts), describing weather using words that may be familiar from other contexts (e.g., humidity, temperature), and comparing climates between local and global settings using distinct measurement systems (i.e., Fahrenheit, Celsius). After analyzing the language that her unique CLD student population would need to achieve transfer goals, deepen understandings, and grapple with essential questions, Ms. Hartmann used her findings to target linguistic knowledge indicators (e.g., weather maps and graphs, particular vocabulary terms, comparative sentence structures) and skill indicators (e.g., analyzing weather-related data, interpreting weather patterns, comparing and contrasting climates).

By adding an explicit lens on language to Stage 1 goals, Ms. Hartmann then automatically prioritized disciplinary language development in Stages 2 and 3. In Stage 2, she designed a performance task aligned to Stage 1 goals, with learners taking on roles as potential weather reporters who use multiple sources of evidence to describe how weather affects human life around the globe. Simulating an authentic, language-rich performance, students use disciplinary language to compare and contrast how weather and climate have influenced one facet of human life—for example, sports or child rearing—in various contexts of the world. In addition to the performance task, she collected other evidence of learning and language development aligned to Stage 1 goals, including personal glossaries of academic vocabulary, journals of scientific responses and explorations, and artifacts from various in-class uses of graphs, maps, and weather-related data. In Stage 3, Ms. Hartmann designed a learning plan that sets students up to achieve the Stage 1 goals, tapping into their cultural and linguistic background knowledge and attending to disciplinary language development through modeling and application with strategic scaffolds such as sentence frames and graphic organizers. In other words, with all stages of curricular design aligned, she ensured a consistent and deliberate lens on language throughout the unit of study by beginning with analysis and prioritizing disciplinary language in Stage 1.

Figure 4.15 | **Ms. Hartmann's High School Earth Science Unit**

<table>
<tr><th colspan="3">Stage 1 – Desired Results</th></tr>
<tr><th>Established Goals</th><th colspan="2">Transfer</th></tr>
<tr><td rowspan="6">NGSS HS-ESS3-5
Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.
CCSS RST.11-12.7
Integrate and evaluate multiple sources of information presented in diverse forms and media to address a question or solve a problem.</td><td colspan="2">Students will be able to independently use their learning to…
• Present and argue appropriate solutions to problems, including drawing from multiple sources of scientific evidence and information.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>Understandings
Students will understand that…
• Various components of the Earth system interact in complex ways to regulate climate.
• Weather influences humans, and humans influence weather.
• Science involves particular ways of knowing, requiring empirical evidence, logistical arguments, skepticism, and peer review.
• We revise scientific ideas over time as new evidence becomes available.</td><td>Essential Questions
Students will keep considering…
• How does weather vary across the world?
• What effect does weather have on human life?
• How do humans affect weather on a local scale?
• How do humans affect weather on a global scale?
• How can we use scientific data to argue for solutions?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
<tr><td>Students will know…
• Weather/climate distinctions
• Weather maps and graphs
• Fahrenheit/Celsius conversions
• Weather concepts with related vocabulary (e.g., altitude, air pressure, precipitation, humidity, atmosphere, temperature)
• Sentence structures/clauses (i.e., cause/effect, compare/contrast)
• Problem/solution discourse</td><td>Students will be skilled at…
• Analyzing weather-related data in weather maps and graphs.
• Interpreting weather patterns and events using data analyses.
• Comparing and contrasting climates and weather patterns in various regions around the world.
• Developing and arguing solutions to weather-related problems.</td></tr>
</table>

<table>
<tr><th colspan="3">Stage 2 – Evidence</th></tr>
<tr><th>Evaluative Criteria</th><th colspan="2">Assessment Evidence</th></tr>
<tr><td>• Thorough investigation
• Evidence-based findings
• Multiple sources
• Effective presentation
• Convincing argument</td><td colspan="2">Performance Task(s)
The Weather Channel
Your goal is to demonstrate the effects of weather on human life. You and your team are being interviewed for a job at the Weather Channel. The search committee is particularly interested in finding a team that can investigate how weather affects various aspects of human life around the world (e.g., climate change, severe weather). Your challenge is to select one aspect of human life (e.g., sports, child rearing, travel) and draw from multiple sources of evidence to make your argument about the effects of weather. You will produce a 10-minute video segment to share with the committee. To further demonstrate your qualifications for global weather reporting, use other languages in addition to English.</td></tr>
<tr><td>• Thorough analyses
• Accurate findings
• Diverse media
• Scientific language</td><td colspan="2">Supplementary Evidence
• Article analyses: Reading and responding to scientific articles
• Graph analyses: Layers of atmosphere temperature and pressure
• Map analyses: Weather maps around the world lab
• Data analyses: Temperature change over 25 years in global cities</td></tr>
<tr><th colspan="3">Stage 3 - Learning Plan</th></tr>
<tr><td colspan="3">Pre-assessment
• Carousel brainstorming using translanguaging to glean students' background knowledge from home, community, and school (e.g., watching weather segment of the news, checking weather app before getting dressed in the morning, previous learning about water cycle and precipitation)
• Multilingual word wall and personal glossaries: Using students' background knowledge, start display of related weather terms in multiple languages (e.g., rain with related translation into all students' L1). Students begin personal glossaries with disciplinary language that they already know.</td></tr>
<tr><td colspan="2">Learning Events
• Chicago-specific hook (journal with sentence frames and discussion): How does weather affect your life in the Windy City? How does it compare with other places that you have lived in or visited?
• Model disciplinary language to make scientific claims/arguments and justify the claims with evidence, including overall organization of argument with specific sentence frames and key words.
• Analysis partners, Round 1: Teacher-selected pairs analyze graphs on relationship between altitude, temperature, and pressure, including conversions between Fahrenheit and Celsius.
• Analysis partners, Round 2: Each pair selects a severe weather event to read, analyze, and discuss related research using a graphic organizer. Pairs will exchange their written analyses with another group to then analyze and critique the other group's interpretations.
• Global inquiry teams: L1-based groups analyze weather maps of one continent of their choice (i.e., North America, South America, Africa, Europe, Asia, Australia) using a graphic organizer.
• Expert groups: Graphing the average temperature in a city over the past 25 years (i.e., Chicago, USA; Santo Domingo, Dominican Republic; Gulu, Ghana; Sarajevo, Bosnia; Yangon, Myanmar; Santiago, Chile); jigsaw by city, then mixed groups (one student per city) share and compare results.
• Performance task preparation and completion: Students work in small groups to design, research, rehearse, and perform the 10-minute video segment regarding weather events and human impacts. Graphic organizers, bilingual dictionaries, and other instructional supports available.</td><td>Formative Assessments
• Journal with specific prompts across unit (e.g., What are the signs of global climate change?)
• Personal glossaries with academic vocabulary, including translation into L1 and visuals
• Observations during instruction using student checklist and anecdotal notes
• Daily checks for understanding on progress toward learning objectives</td></tr>
</table>

Source: Used with permission from Jillian Hartmann, Theodore Roosevelt High School, Chicago.

Chapter Summary

Focused on Stage 1 of UbD, the goals of this chapter have centered on educators recognizing language demands to target desired results for students' language development in classroom instruction. Throughout the chapter, we have explored the nuances of disciplinary language, building awareness of how language varies and develops across disciplines, classrooms, students, tasks, and texts. Two overarching goals guide the principles in practice for Stage 1 with a lens on language: educators define desired results for rigorous and authentic learning that (1) develops *all* learners' language and (2) provides CLD students equitable access. After drafting Stage 1 UbD plans, teachers analyze for language demands and revise goals to build linguistic knowledge and skills for students to engage in discipline-specific units of study. These linguistically responsive goals for learning then guide the meaningful assessment and scaffolded instruction in Stages 2 and 3, respectively. We explore Stage 2—the collection of assessment evidence—with a language lens in the next chapter.

About the Authors

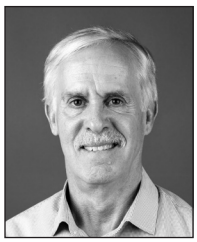
Amy J. Heineke


Vivianna Nadowski

Amy Heineke is an associate professor of Bilingual and Bicultural Education in the School of Education at Loyola University Chicago, specializing in teacher preparation for English learners. She earned a master's and a doctorate in Curriculum and Instruction from Arizona State University, as well as an undergraduate degree from Northwestern University. Coming from a family of educators, Amy started her career as a kindergarten teacher in the Roosevelt School District in Phoenix, Arizona, where she began developing her advocacy and expertise for teaching English learners. In the last 15 years, she has facilitated students' learning in both elementary and secondary classroom settings and supported a wide array of practitioners working with linguistically diverse students in English-medium and bilingual settings around the United States and Latin America.

Amy's current work centers on preparing preservice and inservice teachers to promote students' disciplinary learning and language development across K–12 schools, with particular focus on English learners. She has published several journal articles on preparing teachers to support students' language development in academic publications, including the *Journal of Teacher Education*, *Action in Teacher Education, Teacher Education and Practice, Urban Education, Improving Schools*, *TESOL Journal*, and *Teacher Education Quarterly*. In 2016, she published a research-based monograph entitled *Restrictive Language Policy in Practice: English Learners in Arizona,* which explores the current approach to teaching English learners in Arizona. Overall, Amy's work converges around one primary goal: promoting educational equity for students from diverse cultural and linguistic backgrounds. She can be reached by e-mail at aheineke@luc.edu and on Twitter @DrAJHeineke.

Jay McTighe



Jay McTighe brings a wealth of experience from a rich and varied career in education. He served as director of the Maryland Assessment Consortium, a collaboration of school districts working together to develop and share formative performance assessments. Previously he was involved with school improvement projects at the Maryland State Department of Education, where he helped lead standards-based reforms, including development of performance-based statewide assessments. He directed development of the Instructional Framework, a multimedia database on teaching. Well known for his work with thinking skills, Jay coordinated statewide efforts to develop instructional strategies, curriculum models, and assessment procedures for improving the quality of student thinking. In addition to his work at the state level, Jay has experience at the district level in Prince George's County, Maryland, as a classroom teacher, resource specialist, and program coordinator. He also directed a state residential enrichment program for gifted and talented students.

Jay is an accomplished author, having coauthored 14 books, including the award-winning and best-selling *Understanding by Design* series with Grant Wiggins. His books have been translated into six languages. Jay has also written more than 35 articles and book chapters, and has been published in leading journals, including *Educational Leadership* and *Education Week*.

With an extensive background in professional development, Jay is a regular speaker at national, state, and district conferences and workshops. He has made presentations in 47 states within the United States, in 7 Canadian provinces, and internationally to educators in 37 countries on six continents.

Jay received his undergraduate degree from the College of William and Mary, earned his master's degree from the University of Maryland, and completed postgraduate studies at the Johns Hopkins University. He was selected to participate in the Educational Policy Fellowship Program through the Institute for Educational Leadership in Washington, D.C., and served as a member of the National Assessment Forum, a coalition of education and civil rights organizations advocating reforms in national, state, and local assessment policies and practices. Jay may be reached at via e-mail at jay@mctighe-associates.com and on Twitter @ jaymctighe.

Related ASCD Resources

At the time of publication, the following resources were available (ASCD stock numbers in parentheses).

Print Products

Assessing Multilingual Learners: A Month-by-Month Guide (ASCD Arias), by Margo Gottlieb (#SF 117076)

Building Equity: Policies and Practices to Empower All Learners, by Dominique Smith, Nancy E. Frey, Ian Pumpian and Douglas E. Fisher (#117031)

Creating the Opportunity to Learn: Moving from Research to Practice to Close the Achievement Gap, by A. Wade Boykin and Pedro Noguera (#107016)

Disrupting Poverty: Five Powerful Classroom Practices, by Kathleen M. Budge and William H. Parrett (#116012)

Essential Questions: Opening Doors to Student Understanding, by Jay McTighe and Grant Wiggins (#109004)

Even on Your Worst Day, You Can Be a Student's Best Hope, by Manny Scott (#117077)

Getting Started with English Language Learners: How Educators Can Meet the Challenge, by Judi Haynes, (#106048)

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Raising Black Students' Achievement Through Culturally Responsive Teaching, by Johnnie McKinley (#110004)

Reaching Out to Latino Families of English Language Learners, by David Campos, Rocio Delgado and Mary Esther Soto Huerta McNulty (#110005)

Schooling by Design: Mission, Action, and Achievement, by Grant Wiggins and Jay McTighe (#107018)

Solving 25 Problems in Unit Design: How do I refine my units to enhance student learning? (ASCD Arias), by Jay McTighe and Grant Wiggins (#SF115046)

The Teacher 50: Critical Questions for Inspiring Classroom Excellence, by Baruti K. Kafele (#117009)

Turning High-Poverty Schools into High-Performing Schools, by William H. Parrett and Kathleen M. Budge (#109003)

The Understanding by Design Guide to Advanced Concepts in Creating and Reviewing Units,by Grant Wiggins and Jay McTighe (#112026)

The Understanding by Design Guide to Creating High-Quality Units, by Grant Wiggins and Jay McTighe (#109107)

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