CHAPTER 5

Planning for Enduring Understanding

Enduring understanding: Instruction based on enduring understandings ensures English Language Learners access to high-level content.

Previous chapters highlighted the need to provide ELLs with culturally responsive, high-quality instruction that capitalizes on their cultural and social experiences and builds academic-language abilities. This instruction can be neither overly simplified nor transmitted to ELLs and other students as sets of discrete facts to be learned. Culturally responsive, language-rich instruction must, instead, be structured around the content-area concepts that ELLs and other students must understand well and deeply—the cornerstone concepts for which all students must develop enduring understanding. Instruction that is planned and implemented based on the enduring understandings in content areas replaces instruction that is remedial (focused on skills in isolation) and instruction by transmission (lots of information conveyed by the teacher). It is instruction that is engaging and motivating, promotes higher-level thinking, incorporates a variety of worldviews, and enables ELLs and others to demonstrate their mastery of core content through authentic, product-driven assignments. Planning for enduring understanding for ELLs is the focus of Chapter 5. In this chapter, content-area expert teachers discuss how they determine the content-area concepts that should be taught for enduring understanding and the *enduring language abilities* necessary to master these concepts. While planning is focused on specific content areas, the planning process is relevant across content areas. Readers are encouraged to consult copies of their state or local curriculum frameworks to determine the enduring understanding in their content areas.

LEARNING OUTCOMES

The following learning outcomes (LOs) serve as a guide to Chapter 5. At the end of the chapter are assessment evidence activities that are aligned with the LOs.

LO-1 Explain how teaching content for enduring understanding is consistent with the TELLiM model

LO-2 After reviewing the standards for your content area and grade level, determine the content-area enduring understandings that ELLs and other students must develop. (What major concepts must ELLs and other students really understand as a result of the course you teach?)

LO-3 Explain the language abilities that are necessary to both access content and demonstrate mastery within the identified enduring understanding

LO-4 Establish clear content-area learning outcomes that all students will meet as a result of unit instruction

TERMS THAT MAY BE NEW

Enduring understandings: The central ideas and theories that students must learn and build on in each content area (Wiggins & McTighe, 1998)

THE NEED FOR HIGH-QUALITY, "JUST RIGHT" INSTRUCTION

Students who have insufficient skills in academic English are placed *at risk* for academic failure if they do not receive appropriate instruction. Years of research have shown that students *at risk* require more high-quality and relevant instruction to gain ground and catch up (Education Trust, 2005; Mid-Continent Research for Education and Learning [McRel], 1999). More often, however, they receive remedial instruction, which may water down content in pursuit of building specific skills. In *Lives on the Boundary*, for example, Mike Rose (1989) described a remedial high school English class where, for 45 minutes, students sat at their desks and completed (or did not complete) endless worksheets, filling in blanks with *then* or *than*, *their* or *there*, and *where* or *wear*. More recently, Tatum (2005) found examples of equally ineffective remedial reading instruction for black youths who read below grade level. Unfortunately, we have seen similar situations when ELLs have received instruction that did not prepare them to succeed in high-level academic classes.

ELLs in U.S. schools often receive instruction consisting of *way too little* or *way too much*—instruction that either focuses on specific content-area language at the expense of content-area concepts or instruction on too many concepts without the necessary context to make the concepts comprehensible. When ESOL teachers are required to provide content-area instruction outside their areas of expertise, they may provide ELLs with *way too little* content. Mr. Richard Gordon provides an example of such teaching. We recommend that while reading through Mr. Gordon's planning and lesson, readers reflect on Mr. Gordon's knowledge base and competence as well as what is missing from his instruction.

Mr. Gordon's Sheltered History Course

Granite High School established a Sheltered English Instruction program to meet the needs of its small but growing population of ELLs. The intent of the program was to provide ELLs with content-area instruction in core courses while they developed proficiency in English. The Granite School System hired Mr. Gordon to teach sheltered courses including history, science,

and English. Mr. Gordon, a well-trained and accomplished ESOL teacher, had no formal training or expertise teaching history, science, or English as a subject. Mr. Gordon's sheltered U.S. history course blended history and geography. ELLs who had English proficiency levels from early-intermediate to intermediate and had not yet completed U.S. history were assigned to this course.

Mr. Gordon relied on his ESOL background to make decisions about the content of his course. He recognized that history was language heavy and that the limited vocabularies of ELLs interfered with their understanding. He was well aware that simply exposing ELLs to more English would not necessarily result in an increase in content-area vocabulary. Mr. Gordon's training in ESOL taught him that students must be able to read at least 95% of running words in a text in order to read above frustration level and they must know between 95% and 98% of the running words in the text in order to learn new vocabulary through reading. In preparation for the new school year, Mr. Gordon reviewed several textbooks used in mainstream geography and U.S. history courses to determine their academic-language difficulty. He decided (perhaps rightly) that these texts were too difficult for ELLs to read independently. He knew the ELLs placed in his class needed additional vocabulary and began to search for lessons to build this vocabulary. Finding a chapter on landforms, Mr. Gordon drew on his ESOL experience and created lessons to teach the names and definitions of landforms, necessary vocabulary terms in any geography and history course.

Mr. Gordon's second period class consisted of 14 early-intermediate to intermediate ELLs from six countries and territories. He began the class by writing "landforms" on the whiteboard and drew and labeled mountains, mesas, buttes, peninsulas, plateaus, and archipelagos. As he drew, he said each word and asked the students to repeat it. The students copied the landform drawings into their notebooks, coloring and labeling each. Once the students had completed these illustrations, Mr. Gordon provided simple definitions, which students copied from the board. While some students worked diligently, the simplicity of the instruction fostered distraction among others. Two girls at the back of the room shared a mirror to adjust their eyeliner, a boy's head rested on his desk throughout much of the class, and a girl and boy in the first row chatted for most of the 45-minute period.

While there may be value in drawing and labeling landforms or copying sentences from the whiteboard, this is hardly instruction that will prepare ELLs for academic work in high-level content-area courses. Mr. Gordon's instruction was *way too little* for his secondary ELLs.

Ms. Green's Mainstream History Course

In keeping with the Goldilocks analogy, it is illustrative to consider the instruction in Ms. Janet Green's mainstream history class. An experienced teacher with an undergraduate degree in history, Ms. Green has been teaching for six years and knows her content well. She spends much of her free time searching for supplementary materials including boxes of primary-source materials and numerous Internet resources for class reference. Ms. Green wants her students to come to love history as she does. While reading through Ms. Green's lesson, we recommend that readers reflect on her strengths, what she does well, and also what is lacking in her instruction.

There is so much that Ms. Green wants her students to learn that she moves through chapters quickly and enthusiastically. Ms. Green assumes that secondary-level students will be able to read texts without difficulty and assigns large sections of the text as independent reading. "After all," she thinks, "History *is* a reading-heavy subject." Ms. Green also requires that students

analyze accompanying primary-source materials, which *do* make history come alive for many students in her class. This year, four ELLs with intermediate-to-transitioning proficiency were placed in Ms. Green's third period history class. From the first day of the new school year, she was apprehensive about the ELLs' ability to complete the assignments required in her course. By the middle of the first quarter, her apprehension had grown to frustration.

> I really don't know why they are here if they cannot do the work. I have a lot to cover in a short period of time—my students *deserve* to learn this material. And after all, I'm a history, *not* a language, teacher. I guess the ELLs will at least learn the English by reading it and hearing it. The primary-source documents are just too difficult—I just tell them to skip those. I am really working hard to help them succeed. I only grade their work for content, and even then I grade them with different standards than I have for other students. I tell them to do what they can—I don't know what else to do. Yet, quite honestly, this approach just doesn't seem fair to the other students in the class.

In reality, the four ELLs and, indeed, several English-speaking students in Ms. Green's class have little idea of how the history concepts are related. Often, they find themselves trying to learn strings of seemingly disjointed facts. Aadam Jassam Ali continues to fall further and further behind and explains that he has no idea of how all the reading "fits together." Mehmet, a Turkish speaker who has been in the United States for three years, states, "Just when I think I'm starting to get the idea of what we are doing, we go on to something else." Ms. Green's history course simply provides ELLs with *too much* content with too little context.

Review, Reflect, Apply

1. *Reflect and apply:* Does a lower level of English language proficiency indicate that the content material should be more simplistic? How might Mr. Gordon develop a broader context for understanding while maintaining a comprehensible language load?

2. *Apply:* Ms. Green has high standards for the type and amount of material she covers in class, yet ELLs and many other students in her class are lost. How might she make her instruction more accessible to the ELLs in her classes?

3. *Review:* What strengths and needs does each teacher bring to the classroom?

Summary

It is easy to see that the ELLs in Mr. Gordon's class are not getting the type of instruction that will prepare them for high-level content-area classes and the ELLs in Ms. Green's class are lost in a sea of details. A lesson on landforms *could* be appropriate if it were appropriately linked to the enduring understanding that geography has influenced human migration and culture.

Rethinking Mr. Gordon's Sheltered History Instruction

Unfortunately, however, when Mr. Gordon planned content-area instruction, he encountered the same problem as did Ms. Connolly, the middle school ESOL teacher in Chapter 1. Mr. Gordon knows about second-language acquisition, but he lacks content-area expertise in secondary-level history or geography. Working in collaboration with an expert geography

teacher enabled Mr. Gordon to reconceptualize his planning and focus on the enduring understanding in this content area.

Reexamining the questions that inform his planning process has enabled Mr. Gordon to think very differently about lesson content and to plan instruction based on the strengths as well as the needs of his ELLs. As illustrated in Table 5.1, the new planning focuses on enduring understandings that ELLs must master and fosters academic conversations, critical thinking, collaboration, student engagement, and the development of academic-language abilities.

TABLE 5.1 Reconceptualizing Mr. Gordon's Instruction

Mr. Gordon's Initial Planning	Planning Based on Enduring Understandings
What content can ELLs learn given their limited English skills?	What grade-level content is necessary for ELLs to know?
How can I teach ELLs the terms they need to know, such as *archipelago*, *mesas*, *buttes*, *peninsulas*?	How are terms important to an overall understanding of content? How do terms fit together with enduring understandings such as the relationship between landforms, human migration, and culture?
How do I keep ELLs on task while they learn the necessary English?	How do I encourage multiple perspectives, opinions, and ideas that will engage ELLs in meaningful content-area discussions, which will build enduring understanding in the content area, academic-language abilities, and communicative competence? How do I build on the cultural funds of knowledge within my group of ELLs?

Rethinking Ms. Green's History Instruction

Ms. Green and other teachers are feeling increasingly pressured to cover large amounts of material. Unfortunately, many ELLs, such as Aadam and Mehmet, as well as other native-English-speaking students, cannot provide their own context for the material—they remember disjointed facts rather than important concepts. Furthermore, students such as Mehmet sometimes infer that memorization of facts is the intention of learning.

Using primary-source materials allows students insight into an enduring understanding of history: It is told differently depending on the perspective of the historian. This is a powerful enduring understanding on which to build instruction for ELLs from different countries of origin.

Ms. Green knows her content area well, yet she has not cohesively connected the content-area standards and made them meaningful and enduring to the ELLs in her classroom. Table 5.2 illustrates how Ms. Green rethinks her planning.

As illustrated by the reconceptualization of Mr. Gordon's and Ms. Green's planning, teaching for enduring understanding begins with determining the *content* that ELLs must know and *then* determining the language abilities necessary to access this content and express content-area understanding in meaningful academic conversations, presentations, and papers.

As shown, instruction that is based on enduring understandings builds content-area knowledge and academic-language ability within the content areas. Anchoring concepts to an enduring understanding allows content-area teachers to provide grade-level instruction based on the *content* ELLs must know to become academically successful. Table 5.3 illustrates the two steps of the TELLiM model that are the focus of this chapter.

TABLE 5.2 Reconceptualizing Ms. Green's Instruction

Ms. Green's Initial Planning	Planning Based on Enduring Understandings
How can I adequately cover all the standards that students (ELLs and my mainstream) need to know to understand history?	How do the standards that ELLs and other students need to know fit together to create a big picture, which represents an enduring understanding in this content area? How do I contextualize content so ELLs and other students understand how the standards fit together?
How will the ELLs in my classroom keep up with the reading?	How can I differentiate the required reading so that *all* students can access the information they need and are appropriately challenged by the reading load?
What will my ELLs read when primary documents are too difficult?	How can I make primary documents more accessible to all students and particularly to ELLs?
What do I do with the ELLs in my room while the students who are at grade level learn about concepts and multiple perspectives provided in primary-source documents?	How do I encourage multiple perspectives, opinions, and ideas that will engage ELLs in meaningful content-area discussions, which will build content-area understanding, academic-language abilities, and communicative competence? How do I build on the funds of knowledge within my group of ELLs?

TABLE 5.3 Steps 1 and 2 of the TELLiM Model

Step 1. Review unit to determine enduring understandings
Review grade level content-area frameworks
Determine the concepts that must be taught for enduring understanding
Determine the English language abilities ELLs must possess to access content and express content-area understanding

Step 2. Set learning outcomes
Establish content-area learning outcomes for the enduring understanding
Determine what all students must learn as a result of instruction
Determine the language abilities ELLs at varying levels of proficiency must develop

PLANNING FOR ENDURING UNDERSTANDING

When planning the *Methods of Sheltered English Instruction* course, we begin by asking, "What is it that mainstream teachers *need* to *really understand* to effectively teach content to ELLs?" Based on our expertise, we know many concepts that would be *good* for teachers to know, yet adequately teaching all these concepts would require at least a master's degree program in ESOL, which would be impractical for the average mainstream teacher. Therefore, it is important to ask, What are the central concepts that teachers must *understand in depth* in order to teach ELLs?

Wiggins and McTighe (2005) use a diagram of three concentric circles to illustrate the concepts that should be taught for enduring understanding. The outer circle represents concepts worth being familiar with, the next circle represents concepts that are important to know, and

at the core of the concentric circles are the cornerstone ideas and core tasks—the ideas that must *endure*, such as "Earth's resources are finite," "Probability is everywhere," and "History is told through the perspective of the author."

Determining Enduring Understandings and Learning Outcomes in Content-Area Classes

Many content-area teachers have shared with us their expertise in planning based on enduring understandings and then establishing learning outcomes to measure student understanding. Their combined experiences are illustrated by Mr. John Peterson, a veteran middle- and secondary-science teacher; Ms. Mia Bell, an experienced teacher and former accountant, who now teaches middle school math; Ms. Linda Chin, a fifth-year certified U.S. history teacher; and Mr. Jamie Hayes, a veteran secondary teacher of English language arts (ELA), whose desire to share his love of literature brought him to teaching. Conversations with these teachers and snapshots of their classrooms illustrate how teachers think about and plan for instruction for ELLs that is anchored by enduring understandings. Teachers begin by determining the *content* that all students must understand and then set the *learning outcomes* that ELLs and others must master as a result of this content-area instruction. They establish the same content-area *learning outcomes* for all students in their classrooms. (In Chapter 7, teachers provide examples of how they differentiate assessments to allow for differences in English language proficiency.)

The learning outcomes go beyond measuring students' factual knowledge to measure the students' understanding of how and why. The content-area teachers set *learning outcomes* with words that require a demonstration of content understanding, such as "*explain, justify, generalize, predict, support, verify, prove*, and *substantiate*" (Wiggins & McTighe, 1998, p. 47).

Mr. John Peterson, Secondary Environmental Science

Like most teachers, Mr. Peterson is required to work within the curricular constraints of his school system. He is responsible for ensuring that the academically diverse group of students in his classes, consisting of ELLs and native-English speakers, learn the topics delineated in national, state, and local standards. Mr. Peterson knows that his students must understand how all the standards fit together. He has found that planning instruction based on enduring understandings enables him to meet both the coverage requirements of his school and the developmental needs of his students. He draws on his formal science background as he reviews science standards. Mr. Peterson explains that cornerstone concepts and enduring understandings of environmental science remain the same whether he is planning for this introductory environmental science course or for more advanced courses, which he also teaches.

The cornerstone concepts he has identified include the interconnectedness of air, land, and water in the biosphere and informed stewardship. Mr. Peterson has developed each content-area unit within this environmental science course based on an enduring understanding that serves to continually build on and deepen students' knowledge and understanding of these cornerstone concepts. One of these enduring understandings is that "Planet Earth has finite resources."

Mr. Peterson identified the following learning outcomes that all students in the class will master as a result of instruction in the "Planet Earth Has Finite Resources" unit:

- Explain the environmental effects of a growing population on the earth's finite resources.
- Relate findings from individual environmental footprints to local, national, and global footprints.
- Support and justify your stance on an issue of environmental concern.

A recent observation of Mr. Peterson's class took place outside the school building. Pairs of students worked to identify, catalog, and record plant and animal species they found in 3 ft × 3 ft blocks of space they had measured and marked in environments such as a newly mowed football field, a meadow, and a wooded area. All 24 students, including 8 ELLs with proficiency levels from early-intermediate to transitioning, were engaged in this instruction. Once the students completed their inventory, they returned inside for an interactive lecture on biodiversity, where they continued to be engaged and focused.

Ms. Mia Bell, Middle School Mathematics

Ms. Mia Bell has always had an affinity for mathematics. During her first few years of teaching eighth graders, however, she struggled to understand exactly where their comprehension faltered. With the critical eye of a content-area expert, Ms. Bell reflected on an upcoming unit on probability. "Probability," she thought, "has always been an area of difficulty for ELLs and many other students. And it is a very important topic because it provides a foundation for data analysis and statistics."

When Ms. Bell began teaching, she found it comforting to follow the textbook's lesson on probability: define the term, provide the equation, model sample problems, and provide time for student practice. This approach did seem to reach many ELLs *while* they were in the classroom; they dutifully read through the problems and expressed the relationship between the number of ways a specific outcome will happen and the total number of outcomes as a simple proportion. Her ELLs were challenged by the vocabulary and linguistic structure of the word problems, which Ms. Bell handled by allowing them to work with native-English-speaking peers. Once ELLs had sorted through the language and the numbers were in place, they were able to complete the necessary arithmetic. At times, an ELL even remarked, "This is easy!" However, Ms. Bell noticed that follow-up work suffered when it was done at home and individually. The probability problems on her unit exam did not reflect something that was *easy* for her students. At the suggestion of her mentor teacher, Ms. Bell worked to establish the enduring understanding for the unit on probability. She explained that, as a visual learner, she found it helpful to write down on index cards some guiding questions for herself:

- What is most important for students to understand?
- What do I want them to remember?
- What is central to building understanding?

Reading through the pages of the unit, Ms. Bell first established what her focus had been thus far:

> I began to realize that while the unit theme is probability, my focus had been on the textbook definition of probability and the formulas used to solve probability problems. This made me ask myself about the greater message about learning which I had been inadvertently giving my students. I kept glancing at my index cards, reminding myself of the questions at hand. I wondered if I had been focusing my students effectively. Were a definition and a formula the *most important* pieces for my students to understand? Is that what I want them to remember? Were they central to building understanding?

To all three questions, Ms. Bell thought, "No."

She then thought more deeply about the content and the desired learning outcomes for ELLs and other students. She explained that she had always had a clear sense that a cornerstone concept of mathematics, especially at the middle school level, is a solid "sense of number." "Instead of applying hundreds of seemingly unrelated rules, I want ELLs and others to connect concepts in a way that makes sense." Once Ms. Bell had identified the sense of number as a cornerstone concept of the mathematics curriculum, she looked specifically at the probability unit. She thought of the disconnected understanding students had regarding probability and explained,

> ELLs and other students view probability as something that exists only in their math textbooks. Yet regardless of students' social and cultural experiences, probability is everywhere in their lives. ELLs from the Caribbean recently discussed their families' concerns about the *probability* of a potential hurricane. ELLs who had experienced violent hurricanes talked about probability and weather forecasting as well as other indicators they had observed, such as the change in behavior of animals—something we may not think about yet enriches classroom discussions.

Ms. Bell realized that if ELLs developed an understanding of probability as it related to their everyday lives, as well as to the study of mathematics, they would be better equipped to understand the concept. Knowing that students could always look up a formula, she wanted them to remember instead how probability affects them personally. "Central to building understanding," she explained, "is connecting concepts to something to which ELLs and other students can relate and enabling them to see the big picture."

Ms. Bell restructured her unit on probability. While she continues to use the math textbook, it is now reference material for the class instead of a daily guide. She has built a new unit on probability around the enduring understanding, "Everything we do involves probability."

The learning outcomes Ms. Bell has established for the unit on probability are as follows:

- Explain the process of solving word and arithmetic problems for probability.
- Predict the occurrence of an event based on knowledge of probability.
- Create word problems that involve probability.
- Justify responses to a case study problem that requires using probability.

Ms. Linda Chin, Secondary U.S. History

A walk by Ms. Chin's secondary history class reveals 28 students sitting at desks arranged in clusters of 4. The six ELLs with English proficiency levels ranging from intermediate to transitioning are collaborating with native-English-speaking students; two ELLs with beginning proficiency work together with the support of a native-language tutor. Today, students are working in pairs to read and discuss primary-source documents that include news stories and

speeches of the time period they are studying. ELLs and other students are actively engaged in conversations about the perspectives of document authors and are completing Venn diagrams to organize their ideas.

Ms. Chin routinely uses primary-source documents to help students understand the importance of considering history through multiple perspectives. "History doesn't come alive for the students unless they can read and hear real stories about real people," she explained and continued,

> If teachers just follow the history book, some students see history as page after page of facts and truths—they miss the human story and the relative nature of history. They also miss how it connects to their lives. Using primary documents enables ELLs and other students to make this connection. I make primary documents accessible by adding explanatory notes in the margins of these documents, which really improves student understanding.

(See Chapter 8 for further discussion on adjusting documents for comprehensibility.) When Ms. Chin is asked about the enduring understandings of U.S. history, she responds,

> Students must conceptually understand history. One of the cornerstone concepts of history is that it is written through the perspective of the authors and generally portrays the viewpoint of the victors. *Who* tells the story makes a big difference in *how* the story is told. An enduring understanding is the concept of revolution. For example, we are studying the American Revolution, which is clearly an important part of U.S. history, yet students should understand that revolution is revolution regardless of where it takes place. This is powerful for ELLs from other countries and histories—it often builds on their background knowledge.

Ms. Chin has established the following learning outcomes for her instructional unit:

- Explain the different perspectives of citizens (African Americans, women, members of upper and working classes) regarding the American Revolution.
- Substantiate the positions that the American Revolution was inevitable or avoidable.

Mr. Jamie Hayes, Secondary English Language Arts

The hallway outside Mr. Jamie Hayes's secondary ELA classroom is filled with the often charged sounds of students' voices defending their opinions, challenging assumptions, and personally relating to words that were written well before their time. Mr. Hayes's class includes 24 students (including 6 ELLs who range from early-intermediate to transitioning proficiency). He has introduced the unit, which he has titled "There is More Than Meets the Lie," with an open discussion about lying.

Mr. Hayes developed the unit in response to an observation that his students, particularly ELLs and other students from culturally different backgrounds, were not very engaged in the books required for his class. While some students appeared to enjoy *The Adventures of Huckleberry Finn, Othello,* or *The Catcher in the Rye*, Mr. Hayes often fielded complaints that the books were boring, outdated, and "so unrelated to our lives." ELLs, in particular, struggled with language, reading level, and subject material. Their reactions led Mr. Hayes to think more broadly about his purpose in teaching literature to his students. Mr. Hayes explained,

> I wanted students to realize that literature is meant to be contemplated beyond the pages of the book. I began working from the overarching understanding that there are universal themes across works of literature and then adopted a thematic structure to the literature we read in class.

He determined that he would no longer work through his book-driven "Huck Finn" unit, "Hamlet" unit, or "Othello" unit but would establish a unit that was unified by a theme, which allowed ELLs (and other students) a point of entry into the literature. Mr. Hayes understood that his ELLs, who often struggled to read challenging, grade-level texts in English, would benefit from context-embedded instruction. He recognized that the secondary students he knew were all trying to navigate the social system of high school as they experimented with identity, self, and how to relate to others. "The universality of themes within literature, such as truth versus lies," he thought, "is an enduring understanding that is relevant to all students."

Grounding instruction in this enduring understanding, which provided context, assisted students in the comprehension of text and thrust ELLs (and others) into a more critical style of reading and thinking. All students were put in a position where they challenged the assumptions they had asserted at the start of the unit. And all students, regardless of language proficiency or English reading level, had the opportunity to think critically about a text. When asked about his shift in approach, Hayes noted that in the past, students for whom the book was appropriate could move on to thematic analysis and more in-depth study. For ELLs and other students who, for a variety of reasons, struggled with English reading, the goal was to "get through the book." The double shame in that, he reflected, was that not only did these students miss an opportunity to develop their cognitive, analytic skills, but they were trained to find reading literature to be frustrating and without reward. By structuring instruction around enduring understandings, Mr. Hayes provides students with leveled reading options, all of which contribute to perspectives on the theme. Students who read at higher levels understand the dialogue found in *Othello* (Shakespeare), while ELLs who would struggle with such a book can read *The Catcher in the Rye* (Salinger, 1951/1982), *I Am the Cheese* (Cormier, 1977), or *Zach's Lie* (Smith, 2003). Students can relate the theme of each book to the question of truth versus lies. Students use the book they have selected (with guidance from Mr. Hayes) to discuss and deepen their understanding of the theme.

Mr. Hayes has established the following learning outcomes for this unit:

- Explain positions regarding truth and lies in one of the assigned novels.
- Justify the position regarding truth and lies.
- Support the position with specific details from the book.

Review, Reflect, Apply

1. *Reflect and apply:* Choose one unit that you teach and explain why you teach it and why it is important to student understanding. Identify the enduring understanding that anchors this unit and explain how and why it is enduring. Why do students need to *really* know this content?

2. *Apply:* Identify the learning outcomes for this unit. Content-wise, what should students be able to do as a result of this instruction?

Summary

The previous section illustrated the importance of planning based on enduring understandings (the content-area concepts that ELLs and other students must know well). As Table 5.3 illustrates, planning for content-area enduring understanding is consistent with the TELLiM model. When teachers plan for enduring understanding, they contextualize instruction so that it builds on students' prior experience. Furthermore, instruction for enduring understanding necessitates thoughtful activities that foster critical and complex thinking, collaboration, and academic content-area conversation for all students.

Teachers often agree that planning for enduring understanding makes sense to them conceptually, yet they express concern about adhering to national, state, and local frameworks. Frameworks are important; enduring understandings are determined using well-designed frameworks. Research suggests that effectively implemented standards-based instruction has the potential to improve educational outcomes for students who struggle (Darling-Hammond, 1997). A recent synthesis of research conducted on standards-based education supports the effectiveness of standards-based education; however, it also indicates that the very large number of content-area standards provided to teachers presents barriers to the effective implementation of standards-based instruction (Darling-Hammond, 2007; Marzano & Kendall, 1998). Darling-Hammond (2007) explains,

> Whereas students in most parts of the United States are typically asked simply to recognize a single fact they have memorized from a list of answers, students in high-achieving countries are asked to apply their knowledge in the ways that writers, mathematicians, historians and scientists do. (para. 9)

As Ms. Green's history course demonstrated, when teachers attempt to teach all the content-area standards without first identifying enduring understandings, they often resort to *covering* content (providing unrelated facts and details) rather than building deep and enduring understanding. ELLs, in particular, are negatively affected by this instruction; coverage alone decontextualizes material and therefore reduces comprehensibility of instruction. As content-area teachers have illustrated, it *is* possible to group important curriculum standards around an enduring understanding, thus providing a context that enables ELLs and other students to understand how all the details fit together.

Once teachers identify an enduring understanding for a unit, they then determine what students will learn as a result of the unit of instruction—the unit's *learning outcomes.* The four content-area teachers moved beyond the facts that ELLs and other students would learn within the instructional unit, and beyond teacher transmission and student response, to learning outcomes that require deep understanding of concepts. Their learning outcomes are framed in language that requires ELLs and other students to consider why and how. For example, students in these content-area classes must understand in depth

1. the concept of environmental footprints, to be able to relate from the individual to the global (environmental science);

2. how to solve for problems of probability, to be able to explain the problem-solving processes (mathematics);

3. the experiences of citizens of different races, genders, and socioeconomic groups who lived during the American Revolution, to be able to explain multiple perspectives (history); and

4. the themes in literature, to be able to take a position and then explain and justify it with examples from novels (ELA).

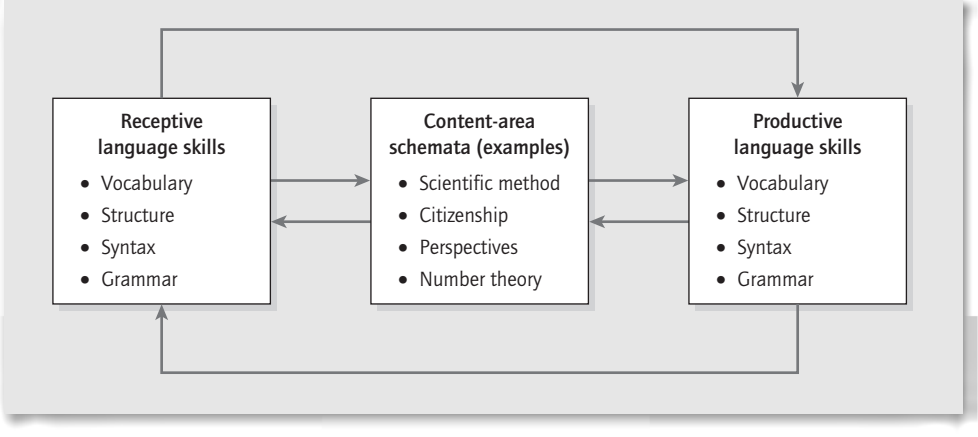
ENDURING ACADEMIC-LANGUAGE ABILITIES

Content and language are interrelated throughout the content areas; academic language is the vehicle for learning content and for demonstrating content-area knowledge, and content is the medium through which ELLs develop academic-language ability. If ELLs are truly to grasp new concepts, they must comprehend the *receptive* language (vocabulary, language structure, syntax, and grammar) of classroom lessons and readings.

ELLs (and other students) also need the *productive* language abilities to engage in academic conversations and convey their conceptual understandings. Although it is possible to demonstrate understanding with drawings, diagrams, and other nonverbal means (and these alternative means *should* be encouraged within the classroom), if ELLs are to become academically successful in U.S. schools, they must gradually develop the ability to speak and write in English at grade level. Planning instruction for ELLs must, therefore, include planning for language as well as content. Model 5.1 illustrates the interrelationship between content-area schemata and the development of academic-language ability.

Schemata, as discussed in Chapter 2, are the elaborate and meaningful mental networks in long-term memory where concepts and knowledge are organized. As the common underlying proficiency theory suggests, schemata developed in one language are accessible to the learner in other languages. Schemata are enriched through ongoing access to content-area concepts gained through receptive language skills and ongoing communication about concepts (using receptive and productive language skills). Increasingly enriched schemata, in turn, provide conceptual contexts that enable ELLs to make sense of new content, vocabulary, and language structures.

MODEL 5.1 **Content-Area Schemata and Academic Language**



Academic-Language Learning Through Content in a Secondary Biology Classroom

Ms. Cheryl Harrington, a teacher of secondary biology, illustrates the interconnectedness of language and content in a unit based on the enduring understanding "Biotechnology impacts health care decisions." (Ms. Harrington planned the unit using the TELLiM model shown in Table 1.5, Chapter 1, this volume.) Among the concepts that ELLs and others must learn in this biology unit are the molecular aspects of genetics and the detection of genetic diseases. Twenty-four students, including eight early-intermediate to transitioning level ELLs, participate in this class.

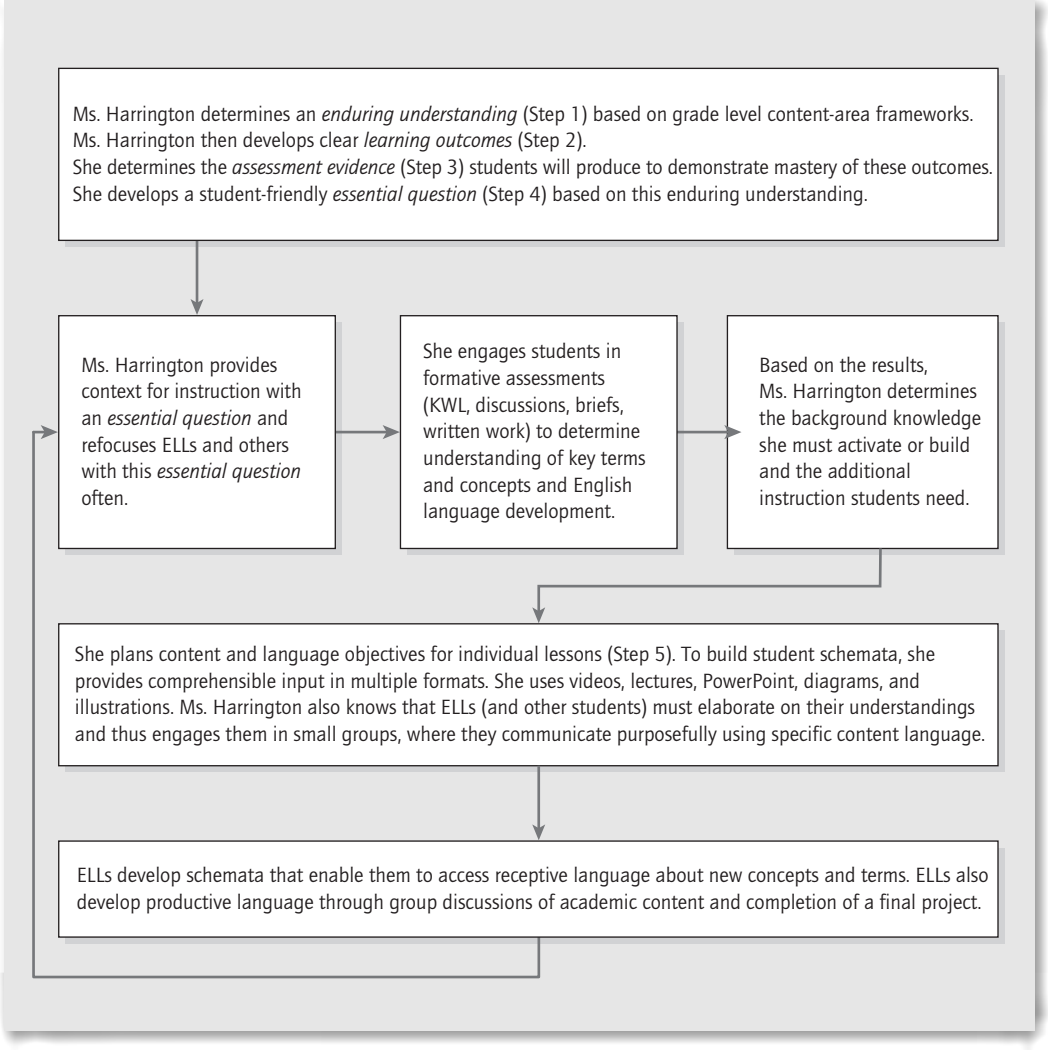
When students enter the classroom on the first day of this instructional unit, they notice the Ms. Harrington has posted the *essential question*, *Genetic testing—who decides?* Ms. Harrington activates student schemata with a short film clip showing the impact of various common genetic diseases. She has developed several discussion probes, including "What are genetic diseases? Do we want to know if we are at risk for them?" and "Should everyone be tested to find out if they are at risk?" She provides these to students, who form six discussion groups, each composed of four students. (The eight ELLs work collaboratively with native-English speakers.) The academic discussion facilitates students' receptive and productive language abilities and elaborates content-area schemata.

Discussion concludes with each group briefly reporting on what they think they know about genetic disease based on the video and discussions. Ms. Harrington quickly writes student responses on a KWL (What I *know,* What I *want* to know, and what I *learned*) chart (further elaborating student schemata) and redirects students to the *essential question*: "Genetic testing—who decides?" Ms. Harrington assures students that there is no one correct response. To develop informed responses, students must learn about *genetic diseases, DNA, mRNA, protein synthesis*, and *gene codes*, and they must learn these well to participate in ongoing academic discussions. The *essential question* contextualizes instruction and allows ELLs and others to understand how all the facts fit together. Academic vocabulary and language abilities are learned in context within lessons that all relate to Ms. Harrington's essential question.

Learning outcomes for the unit require ELLs and other students to demonstrate their understandings by preparing and presenting a response to this *essential question*. As a final assessment, students create a group PowerPoint presentation, in which they take a position, *explain* their position, and *support* it with facts from the readings and lectures (written and oral communicative competence). Ms. Harrington formatively assesses student progress throughout the unit through observation of small-group discussions, in which students demonstrate oral communicative competence, and through several short written assignments.

Receiving feedback, including responses from members of the discussion group and Ms. Harrington, on their PowerPoint presentations allows ELLs to gauge the accuracy of their productive communication. The ongoing interaction between ELLs, more English-proficient students, and Ms. Harrington also serves to further develop ELLs' receptive communication skills. Discussions about government-required testing enable ELLs to use productive and receptive language to deepen their understanding of concepts and to measure and improve their communicative abilities in academic English. Model 5.2 illustrates the interrelationship of content and language in Ms. Harrington's biology class.

MODEL 5.2 **Language and Content in Biology: Implementing the TELLiM Model**



CONTENT-AREA LANGUAGE

Different content areas require different receptive and productive language abilities. Listening to a poem, for example, requires different receptive skills from listening to instructions for a chemistry laboratory experiment. History texts present different reading challenges than do math texts, technical manuals, or literary works. Writing a geometry proof, a lab report, a persuasive essay, a poem, or a short story each requires different productive language abilities.

Content-area teachers face a dual challenge: They must make content accessible and measure content-area understanding apart from English language proficiency, and they must also

ensure that ELLs receive instruction that promotes the development of their academic English abilities. To meet these challenges, content-area teachers must clearly identify the language abilities that ELLs eventually have to master. Teachers must also become familiar with language structures and activities that present particular difficulty for ELLs.

It is often difficult, however, for content-area teachers to tease out the language abilities necessary for their content areas. Just as native speakers are often unaware of the complexity of their own language, content-area teachers find that the language of their subjects has become second nature to them. For example, as authors of this book (and teachers ourselves), we struggled to decide which terms required substantive definitions and examples. We regularly use terms of language acquisition and therefore do not have to think about them. This question of technical vocabulary is, however, only the tip of the iceberg.

Content-area teachers must determine both the essential receptive language abilities for accessing concepts in specific content-areas and the productive language abilities necessary for demonstrating conceptual understanding. Content-area classes often, for example, require students to access concepts through different media, including a variety of types of reading, discussions, lectures, videos, and demonstrations. Content-area teachers often expect students to demonstrate content-area understanding through essays, journals, poetry, research papers, and lab reports, as well as by participating in classroom discussions and giving presentations. Teachers must determine the specific language abilities that each of these activities requires.

Earlier in this chapter, Mr. Peterson, Ms. Bell, Ms. Chin, and Mr. Hayes explained how they identified content-area concepts that must be taught for enduring understanding. Here, they share the grade-level language abilities (*enduring language abilities*) that ELLs must eventually acquire to *access* concepts (independently) and *express* content-area understanding.

All four content-area teachers shared a somewhat common understanding of the ideal academic-language abilities that all students should possess. We venture to guess that few teachers would disagree with their consensus.

- Students should read on grade level, which includes having well-developed comprehension skills such as the ability to infer. This also assumes grade-level vocabulary and knowledge of syntax. In other words, students should be able to read with sufficient proficiency so as to be able to read the text and other assignments independently.

- Students should enter courses with the prerequisite subject knowledge in the content area.

- Students should have grade-level writing skills that they can apply across content-area assignments.

- They should have well-developed listening and speaking skills so they can learn from lectures and participate in academic discussions.

The four teachers then considered the realities of their classrooms, which are that few native-English speakers meet the ideal requirements and ELLs bring a special set of challenges to mainstream content-area classrooms. The four teachers identified issues of vocabulary, syntax, reading, and writing as *enduring language abilities* within and across academic content areas. Table 5.4 illustrates the identified language abilities and specific difficulties that ELLs experience.

Well-developed vocabulary is important across the content areas and, as illustrated in the previous chapters, knowing a word is a complex process that includes knowing the word's

TABLE 5.4 Necessary Abilities and Difficulties in Academic English

Ability	Difficulty Encountered by ELLs	Supporting Research
Academic vocabulary	Understanding the vocabulary in content-area classes and in texts	Vocabulary presents one of the greatest academic challenges to ELLs. Of the running words in academic text, • 2,000 word families account for 80%, • 570 general academic vocabulary terms account for 9%, and • specific technical terms account for 6% (Nation, 2001)
	Multiple meanings of words	Academic vocabulary presents difficulties due to • polysemy (Table 2.2); • collocations (Table 2.1); and • use of words as discourse markers that indicate relationships between clauses and sentences (such as *though, if, unless, so that*, and *whereas* (Nation, 2001, p. 213)
Syntax	Extensive use of the passive voice, which occurs across academic literature	Use of tense in academic writing presents difficulties for ELLs; history texts, for example, are predominately written in the past tense, whereas science texts are often written in the present tense (Hinkel, 2004).
	Relationship between verb tense and meaning	
	Use of markers that indicate changes in tense (*currently, 30 years ago, soon*)	Tense markers and signaling words present difficulties to ELLs (Hinkel, 2004).
	Use of signaling markers to indicate relationships between clauses and sentences (meaning of *though, if, unless, so that*, and *whereas* in sentence structure) and use of these in written work	The extensive use of noun clauses presents difficulties in comprehension of written texts and production of written work (Hinkel, 2004; Nation, 2001).
	Use of constructions containing nonliving doers, such as *the report shows*, *data indicate*	Nonliving doer constructions are confusing too because such constructions do not exist in all languages (Hinkel, 2004)
Extent of reading	Reading large amounts of text in different genres to learn content	Difficulties with vocabulary and syntax often interfere with comprehension and fluency (Birch, 2006).
Variety of writing	Extensive writing across content areas and across genres within content areas	Writing across various genres requires ELLs to adjust for voice (active, passive), use of hedging *(it appears* rather than *it is*, *it may* rather than *it will*), and productive use of academic vocabulary (Hinkel, 2004).

multiple meanings (polysemy), collocations, connotations, and appropriateness. ELLs encounter three major types of vocabulary in the content areas: general vocabulary, academic vocabulary, and technical terms. As Mr. Richard Gordon, the ESOL specialist, explained, to develop new vocabulary through reading, ELLs must know at least 95% to 98% of the running words in the text.

PLANNING FOR ENDURING LANGUAGE ABILITIES

Mr. Peterson, Ms. Bell, Ms. Chin, and Mr. Hayes plan instruction for the *enduring language abilities* in their content-area units. They then establish learning outcomes based on the language abilities that ELLs and other students need to access content and demonstrate their mastery.

Enduring Language Abilities in Secondary Environmental Science

Mr. Peterson cites vocabulary as essential to accessing the content of environmental science:

> Science is vocabulary-heavy and vocabulary knowledge is closely linked to conceptual understanding. ELLs must know vocabulary well, recognize key vocabulary terms encountered in reading, understand vocabulary in lectures, and appropriately use vocabulary in academic conversations and written assignments. In the "Finite Resources" unit, for example, students must conceptually understand the scientific meaning of terms such as *solutions* and *concentrations* or they will be unable to understand pollution levels and commonly used expressions such as *parts per million*.

Mr. Peterson has found that throughout instructional units in the sciences, ELLs encounter many words from the The Academic Word List (AWL), and the ability to comprehend and use these words in reading, writing, and academic conversations also represents an *enduring language ability.*

Mr. Peterson indicates that another *enduring language ability* is the use of strategies to self-check comprehension and to clarify confusions. As ELLs develop greater language proficiency, they will need to listen for key words and terms, know how to take notes from lectures, and learn to evaluate their own understanding so that they can ask clarifying questions when necessary.

Regarding the productive language abilities that ELLs will need to demonstrate content-area mastery, Mr. Peterson cites the ability to

- write accurate, detailed, and well-structured lab reports and orally share findings with others;
- write essays and prepare presentations to explain various points of view; and
- write persuasive essays and prepare presentations that evince understanding of informed responsible stewardship.

As they develop greater English proficiency, ELLs will need to use the language of science within the structure of standard writing conventions. Writing across scientific fields requires the use of nonliving doers as subjects, for example, *the experiment shows* and *the study suggests*, as well as the need to hedge by means of expressions such as *the data suggest* and *from the evidence provided, it appears*.

Enduring Language Abilities in Middle School Mathematics

While math is often not thought of as a reading-intensive subject, it is, in fact, very intensive, and the language (mathematical and English) is very dense. Ms. Bell explains that language in math texts is often laden with factors that confound ELLs and other students. While the language may seem straightforward, many students are confused by polysemous words, such as *operation, table, power,* and *negative.* Solving word problems is a critical ability that helps students think systematically and logically. Yet, Ms. Bell explains, "much of the language within math problems is a labyrinth of words for English Language Learners." She provides the following problem from a standardized test as an example:

> Glenn bowls in a bowling league every Saturday morning. Last Saturday, the scores from Glenn's first 3 bowling games were 141, 128, and 157. . . . Each player in Glenn's bowling league is given a handicap, which allows players of different abilities to compete equally. A player's handicap is determined with the following formula. A player's handicap is equal to 80 percent of the difference between the player's average (mean) and 220. Miguel is Glenn's teammate. If Miguel's average (mean) is 130, what is his handicap? Show or explain how you got your answer. (Massachusetts Department of Elementary and Secondary Education, 2005)

Ms. Bell explains,

> While a math problem like this may seem fairly straightforward, there are many layers for an ELL to peel away in order to get to the core content of the problem. There is academic (*mean, difference*) and nonacademic (*bowling league*) vocabulary to decipher. There is the passive voice (*is determined by, is given a*), which presents difficulties for ELLs. There is the word *handicap,* which holds a meaning very different from its popular significance. And there is the mathematical definition of *handicap* which, while useful information, is an additional layer to unfold. To begin to make sense of such a problem, ELLs must work through each of these outer layers first to determine the relationships between the data provided and translate these into mathematical expressions. Additionally, the language of math word problems is often couched within questions such as "What are the chances that . . . " and "What are the odds that . . . ," which have different meanings when used in everyday life and, thus, may also create comprehension issues.

Ms. Bell explains that productive *enduring language abilities* necessary to demonstrate understanding in math are, much like the receptive, quite subtle. "While students are not often asked to write lengthy essays about their experience in math, they do need to know how to communicate the processes they use to solve problems." Ms. Bell explains that ELLs, like other students, need modeling and practice in the skill of talking through their work:

> Very often ELLs can write out the arithmetic, but they cannot explain their reasoning for the steps they take. When a student is stuck on a problem, I require that they talk me through exactly what is confusing them so they develop communication patterns for math.

Ms. Bell has listed the following language abilities that ELLs must access and use to complete the unit on probability:

- Use the language of probability to understand relationships between the given and unknown variables in problems.
- Access the passive voice within word problems.
- Use academic vocabulary to explain the process of solving word problems. (Ms. Bell has also determined that many words in the math text are also found in the AWL and that knowing these words represents an *enduring language ability*.)

Enduring Language Abilities in Secondary U.S. History

Ms. Chin identifies the ability to access language-heavy textbooks as well as the linguistically sophisticated primary-source materials as *enduring language abilities* necessary for understanding U.S. history. She explains,

> While we can (and should) provide access to these materials for ELLs through sheltering, if ELLs are to continue to grow academically, at some point they will need to

- learn the strategies necessary to access and deconstruct difficult reading materials independently (figure out the vocabulary, use markers for tense and for change in topic/flow, and deconstruct clauses),
- develop the ability to read sentences and passages that are made dense with noun clauses and the use of passive constructions,
- effectively use discourse markers to comprehend content, and
- comprehend the meaning of hedging.

Regarding the productive *enduring language abilities*, Ms. Chin explains that eventually ELLs will need to

- write papers and make presentations using grade-level, content-area language;
- compare, contrast, and present multiple perspectives about various issues (e.g., in the case of the American Revolution, ELLs must be able to discuss the causes of this revolution in the context of the broad concept of revolution);
- use hedging to express viewpoints (rarely do clear-cut causal relationships exist; rather, ELLs and others need to use hedging [*appears, may, could*] to describe plausible relationships); and
- accurately employ tense structures to tell what happened, would have happened, or was happening during a particular historical period.

Enduring Language Abilities in Secondary English Language Arts

Mr. Hayes considers ELA to be a subject that challenges the academic-language abilities of native-English-speaking students. With that in mind, he pays special attention to the language abilities he requires of his ELLs. Receptive language abilities that stand out to Mr. Hayes include the level and quantity of language required to read the class literature. "ELLs are often overwhelmed by the amount of reading that they must do independently. I am continuously conscious of the frustration factor they confront when asked to read long passages of text that are in effect beyond their reading level." Mr. Hayes also cites the use of dialect, period-specific language, and high-level vocabulary as obstacles to understanding literature. He notes that poetry and other forms of language that rely heavily on figurative language, nuance, and often culturally specific allusions prove difficult for ELLs.

Mr. Hayes feels that the productive language abilities required in ELA include a heavy reliance on essay-based products. "ELLs must organize their thoughts with attention to tone and word choice. They are often graded on both grammar and ideas, which can be seen as a double-whammy for ELLs." Additionally, Mr. Hayes notes that participating in in-class conversations, which can be fast paced and make use of complex language structures, is a specific ability that ELLs must develop.

Review, Reflect, Apply

1. *Apply:* Think across the content area you teach; review curriculum frameworks and classroom materials. Describe the enduring language skills that ELLs must develop to independently *access* rigorous grade-level content. Then identify the enduring language skills that English language learners must develop to *express* content-area understanding.

2. *Review and reflect:* How do enduring language skills differ from content area to content area?

CHAPTER SUMMARY

Chapter 5 discussed the interrelationship of content and language and the importance of enduring understandings (content and language) in planning effective instruction for ELLs. Four content-area experts provided examples of how they determined enduring understandings, first in their content and then in language. Teachers also provided explicit examples of the receptive language abilities ELLs need to access content and the productive language abilities ELLs need to demonstrate their content-area understandings. It is recommended that readers review the processes by which content-area teachers established enduring understandings for content and language before completing the assessment evidence activities and progressing to Chapter 6. Chapter 6 demonstrates how the four content-area teachers build on the *enduring understanding* and *learning outcomes* they designed and create *essential questions* to frame their instruction.

Assessment Evidence Activities

AE-1	Explain the ways in which planning for enduring understandings is consistent with the input hypotheses (Chapter 2, p. 38) and the context-embedded context-reduced model (Model 2.3, Chapter 2, p. 48).
AE-2	List the enduring understanding(s) for a content-area unit to be implemented over a three- to five-week time period. Explain how the enduring understandings serve to contextualize the content-area standards.
AE-3	List the language abilities that ELLs must develop to *access* the content of the content-area unit. Now, list the language abilities that ELLs must develop to demonstrate content-area mastery.
AE-4	Determine the content-area learning outcomes that all students will master as a result of their participation in the unit of instruction.

Resources for Further Reading

- National Content Area Learning Standards:
  National Standards for Math, http://standards.nctm.org
  National Standards for Science, http://www.nsta.org/standards
  National Standards for History, http://nchs.ucla.edu/standards/
  National Standards for English Language Arts, http://www.ncte.org
  Teachers of English to Speakers of Other Languages (TESOL) Standards, http://tesol.org/s_tesol/seccss.asp?CID=113&DID=1583

- For a complete description of planning instruction for enduring understandings, readers are encouraged to review Wiggins, G., & McTighe, J. (2005). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.