chapter 1

Working With Standards and Benchmarks

Perhaps the biggest question facing novice and veteran teachers alike is, What will I teach? After securing a new teaching position or shifting to a new grade level, all teachers must consider what content their students need to know, which skills they must develop, and at what level of proficiency they must be able to

demonstrate those skills. For the high school biology teacher, the answer may seem obvious. However, on further examination, it becomes clear that the discipline of biology is deep and broad. The tenth-grade biology teacher must consider what students already know and at what level they can demonstrate their understandings and skills. Likewise, a kindergarten teacher needs to know what students bring to each teaching and learning situation across a broad spectrum of subjects and skills, as well as the levels and competencies that need to be targeted. These concerns have always loomed large in the daily work of teachers, and they continue to do so today as teachers, administrators, and others in the field of education look for guidance in implementing standards-based education.

To illustrate the issues and questions raised above, I (T. D.) will share an experience in my own early history as an educator. I was teaching fourth grade in my first elementary school setting. I did what many of my colleagues did: I used the textbooks adopted by the district to guide my instruction. I also reviewed the district report card so that I would know what categories and levels of performance needed to be reported to parents and students. After several days of poring over these documents, I was relatively satisfied that I understood the goals and aims for fourth-grade students in my school district. I then set my sights on what seemed to be the next logical step: deciding how to create learning experiences that would match my understanding of this curriculum. All seemed to be going relatively well until the day my fourth-grade teaching partner poked her head through the classroom door and asked me how our "bird projects" were coming since a local 4-H judge was scheduled to come in and rate them in a couple of weeks! After determining that her comments weren't the product of a cruel sense of humor, I began asking several questions: "What project?" "What judge?" "Is this required?" "Is it in the textbook for science?" After some time (and moments of panic) I discovered that students were to study local bird populations and build birdhouses as an annual project to be evaluated by a local 4-H official. The project was not listed in the textbook or even on the report card, but it was a requirement for all fourth-grade students. It seems that no one had remembered to tell me about it. My class did ultimately study the local bird population, and we managed to put together several birdhouses in assembly-line fashion, but I spent much of the rest of the year wondering what other content I was expected to cover that hadn't been fully explained to me.

As my story illustrates, new teachers and those new to a subject or grade level need guidance in determining what students need to know and be able to do, as well as expectations for proficiency levels. While teachers must also have models for how to develop appropriate teaching and learning opportunities, knowing what to teach and when are the essential first steps in the process. Teachers just entering the field, as well as those moving within a system, stand to benefit from the last several years of work in standards-based reform in education. In short, this major reform effort has sought to articulate what students need to know and be able to do in several disciplines and at all grade levels. In this chapter, we begin with a historical look at the roots of this movement and its current status and implications for classroom teachers. We will also discuss the types of standards and the terminology that have evolved from the movement and the ways they can serve as guideposts for classroom

teachers considering both what to teach and how to promote levels of proficiency among their students. Along the way, we will also explore some of the issues raised about the development and use of various types of standards to guide instruction and assessment. Our goal in this chapter is not to teach you how to develop standards. Rather, our intention is to help you better understand where they come from and how you can and may be expected to use them in your work with students. Once you understand how to use standards and benchmarks to determine what to teach, the remainder of this book will help you determine models that best meet those teaching and learning goals.

The Standards-Based Reform Movement

While the call for higher standards and measures for accountability has a long history in American schooling, the current **standards-based reform movement** is a relatively young tradition. The release of the report *A Nation at Risk* in 1983 is often cited as the beginning of the movement (Kendall & Marzano, 2000, p. 1). This report denounced the state of education in the United States and called for major reforms. A variety of sources—governmental agencies, business groups, professional organizations focused on education, and schools—responded. In short, although sometimes wary of the substance and form of change, nearly all players seemed to agree that reforms designed to raise standards and accountability in the K–12 system of schools were necessary.

In their short outline of the history of the standards-based reform movement, Kendall and Marzano (2000) note several important events that led to the current standards and accountability system that governs schooling in the United States. Shortly after the report was issued, the National Council of Teachers of Mathematics (NCTM) began writing *Curriculum and Evaluation Standards for School Mathematics* (Kendall & Marzano, 2000, p. 2). This document represented an early attempt by a subject-centered professional organization to outline how the discipline of mathematics should be divided, as well as standards for those who teach mathematics at all levels of the K–12 system. The NCTM was among the first organizations to provide such a framework, and many other national professional organizations have followed suit in the past several years.

Another set of milestones noted by Kendall and Marzano (2000) included the meeting of President George H. W. Bush and the governors of all 50 states in Charlottesville, Virginia, in 1989. The result of that meeting was a call for new standards in five subjects covered in all schools: mathematics, history, geography, science, and English. In addition, the first President Bush used his 1990 State of the Union address to outline "National Goals for the Year 2000." This set of goals was further promoted when Congress established the National Education Goals Panel. At nearly the same time, the secretary of labor established the Secretary's Commission on Achieving Necessary Skills to consider the kinds of skills students would need to

The standards-based reform movement has promoted high levels of accountability that include state-mandated assessments for K–12 students.

develop to ultimately and successfully enter the workforce. These efforts were advanced again when President Clinton signed the Goals 2000: Educate America First Act. This law called for standards at the national and state levels, as well as state assessment tools. It also added economics, civics, government, the arts, and foreign language to the list of subjects to be covered by standards (Kendall & Marzano, pp. 2–3).

In addition to the work being done at the national level, some states began to develop curriculum frameworks that outlined standards for school subjects taught within a state. Most notably, the state of California began in 1983 to develop a framework and set of content standards to be used in its public schools. President Clinton used his State of the Union address in 1997 to urge all states to not only develop high standards for all students but also establish a set of assessments for measuring reading proficiency in the fourth grade and mathematics proficiency in the eighth grade (Kendall & Marzano, 2000, pp. 2–5). By 1990, most states had adopted assessments to measure student achievement in a variety of subjects (Montgomery, Ranney, & Growe, 2003).

The convergence of efforts by national professional organizations, state educational agencies, business, and national governmental bodies is most recently reflected in the reauthorization of the **Elementary and Secondary Education Act**, commonly referred to as the **No Child Left Behind Act of 2001**. This act calls on each state to set standards for what all students "should know and learn" and to measure their achievement on an annual basis (No Child Left Behind Act of 2001 [Glossary]).

The No Child Left Behind Act places heavy emphasis on assessment of student achievement. Under *assessment*, the glossary for the No Child Left Behind Act states that

> Under *No Child Left Behind,* tests are aligned with academic standards. Beginning in the 2002–03 school year, schools must administer tests in each of three grade spans: grades 3–5, grades 6–9, and grades 10–12 in all schools. Beginning in the 2005–06 school year, tests must be administered every year in grades 3 through 8 in math and reading. Beginning in the 2007–08 school year, science achievement must also be tested.

The act also calls for publication of the results on an annual basis and **adequate yearly progress (AYP)**, which is defined as "An individual state's measure of yearly progress toward achieving state academic standards. 'Adequate Yearly Progress' is the minimum level of improvement that states, school districts and schools must achieve each year" (No Child Left Behind Act of 2001). Schools that do not make AYP can be sanctioned in a variety of ways.

In a relatively short span of time, standards-based reform has essentially become law (Resnick, Rothman, Slattery, & Vranek, 2004), and it has drawn both supporters and critics. While some oppose the mandates of *No Child Left Behind*, others embrace this act as a much needed reform of U.S. schools to both establish standards and ensure accountability at all levels. Our goal here is not to take a political stand on the legislation itself but rather to briefly examine some of the potential merits and limitations of the standards-based reform movement in general.

Proponents of the standards-based movement often argue that the development of standards makes the material to be learned and the level of proficiency to be attained transparent for all. Teachers are told what to teach but are free to select models of teaching that best allow them to meet the standards. In addition, clearly articulated standards allow parents and students to see the goals of schooling and measure progress toward those goals in various content areas. Proponents further argue that the increased accountability of testing based on the standards provides a feedback loop for teachers so that improvements can be made to curriculum and instruction. Others contend that clearly articulated standards will provide an opportunity to close the gap in educational achievement for traditionally marginalized students: poor and minority students (Cavazos, 2002; Riley, 2002; Paige, 2002; Cohen, 1996; Darling-Hammond, 1997; Ogawa, et al., 2003; all cited in Kirschner, 2004).

Critics of the standards-based movement have often worried about the tension between federal, state, and local control of schools. Some worry that state or national standards will, for all intents and purposes, eliminate the local control over school curriculums that has historically been the rule in this country. Others have worried that the high-stakes and mandated tests might not be well aligned with standards and curriculum, putting students at a disadvantage. Still others have concerns that weighty emphasis on a system of accountability that relies heavily on such testing may put poor and minority students at a disadvantage, given that these groups often do not fair well with such tools (Resnick et al., 2004).

While proponents and critics of the standards-based reform movement may each have valid points, only further research on the results of the movement and its elements can either support or eliminate their concerns. In the meantime, we believe that standards can and do allow all players in the educational system an opportunity to articulate and understand what it is that students need to know and be able to do. Standards, in and of themselves, need not prescribe what teachers must do to help students learn—although some believe that they should. All the models outlined in this text can be used by classroom teachers to reach the standards and benchmarks set for student learning. We believe that teachers should make professional choices about which models will help them, and more specifically their students, reach the standards that are set out for them.

One major issue with the use of standards must be addressed if standards are to be useful for the classroom teacher. Standards are developed at the state level, oftentimes on the basis of a variety of professional organizations' documents, and because no uniform system exists for articulating standards and benchmarks, their terminology may become a source of confusion.

In the section that follows, we will address standards and benchmarks, clarifying terms and demonstrating the use of each. We will also address a variety of issues that arise when standards are used to guide teaching and learning. Most teachers will be consumers, rather than developers, of standards and benchmarks as they determine which models of teaching and pedagogy to use to meet appropriate standards. Our goal is to help you become a well-informed consumer who can navigate the sometimes tricky waters of understanding content standards and benchmarks, as well as using them in the classroom.

State and Local Standards

Due in part to the requirements of the No Child Left Behind Act, each state has developed or reorganized a state-based **curriculum framework**. This document is designed to assist local districts and schools in aligning their own curriculums and assessments with state requirements (Kendall, Ryan, & Richardson, 2005). State-mandated proficiency tests are based on the contents of these documents, which typically consist of content standards and benchmarks for each subject taught in schools. In most districts, a curriculum director is designated to understand these documents and monitor them for periodic revisions. The curriculum director or a designated group within a local district often has the responsibility for ensuring that the local curriculum and assessment tools are aligned with the framework. Often teachers are part of this group and assist the curriculum director in selecting textbooks and other instructional materials for use in the local schools. This process may vary from one location to another as some states make textbook selections at the state level. It will be helpful to ask about the particulars of this process in your local school district.

As mentioned above, because states are charged with developing their own curriculum framework, there are variations in both the structures and terminology used (Neuman & Roskos, 2005). For example, some states list content standards and then provide benchmarks for a range of grades, such as kindergarten through second grade, while other states list benchmarks for each grade level. However, because of the requirement to do state-mandated annual assessments of all third- through eighth-grade students, states have begun to move toward a grade-level structure for most benchmarks as these provide a better guide for what will be assessed at each grade.

The terminology used in state curriculum frameworks continues to be a source of confusion. It is not uncommon to see the same level of standards described differently from state to state. For example, while some states use the term *content standard*, others use the term *goal*. In this chapter we will use the terms *content standard*, *benchmark*, *strand*, *performance standard*, and *lifelong-learning standard* to describe the contents of a curriculum framework developed at the state level, but we will also provide alternative terminology so that you can see how the level and type of standard being described matches that in your own location.

Content Standards

Over the last several years, as **content standards** have been developed, their form and substance have evolved, but their primary function has remained to divide a discipline into manageable parts. Kendall, Ryan, and Richardson (2005) provide a useful and current definition:

> A content standard is a description of what students should know and/or be able to do within a particular discipline. Content standards primarily serve to organize an academic subject domain through a manageable number (from 5–12) of generally stated goals for student learning. These statements help to clarify the broad goals within the discipline and provide a means for readers to navigate the standards documents when searching for specific content. (p. 1)

In some state curriculum frameworks, this same (or a very similar) level of organization may be referred to as a *goal*, *expectation*, or *learning result* (Kendall, Ryan, & Richardson, 2005, p. 2). To determine the label used in your location, refer to your own location's documents, which can usually be accessed through the Web site for your state's department of education.

For purposes of illustration, we have selected content standards listed in *Content Knowledge: A Compendium of Standards and Benchmarks for K–12 Education* (Kendall & Marzano, 2000) to show the structure of content standards that may be found in a typical state curriculum framework. For language arts, content standards might look like the following examples:

> Uses the general skills and strategies of the writing process. (p. 321)

> Gathers and uses information for research purposes. (p. 334)

Here are some examples of content standards for mathematics:

Uses a variety of strategies in the problem-solving process. (p. 47)

Understands and applies basic and advanced properties of the concept of geometry. (p. 56)

Each of the examples addresses a major segment of its subject and describes what students should know and be able to do. As is typical, these examples were developed on the basis of the divisions and standards articulated by organizations that represent current research and understanding of the subject. For example, the mathematics standards were based on work done by the NCTM, which illustrates another important aspect of content standards developed for state curriculum frameworks: They must incorporate current research and understanding in each subject area. Often, this research and understanding can be found in the standards developed by professional organizations that monitor, promote, guide, and conduct research on best practice in classroom settings.

Content standards are not designed to provide specific guidance at the classroom level. Rather, they are general statements with a broad level of specificity about the kinds of knowledge that can and should be promoted within each subject area. Kendall and Marzano (1995) classify knowledge into three types: procedural, declarative, and contextual. A brief examination of these types sheds light on how standards in general are developed, as well as how they are used specifically in the construction of content standards.

When content involves **procedural knowledge**, it often begins with "verbs, such as 'uses,' 'solves,' and 'predicts'" (Kendall & Marzano, 2000, p. 24). Procedural knowledge describes "skills and processes important to a given content area" (Kendall & Marzano, 1995, p. 11). Many school subjects include specific skills and processes that students must master in order to fully understand and use the content of the subject. For example, in mathematics it is important to be able to use a protractor to measure angles. In the language arts, a thesaurus may be needed to develop a written text. Such key words as *uses*, *solves*, and *predicts* can often help you determine when a standard is targeting procedural knowledge.

Oftentimes content is described as **declarative knowledge**. These types of standards frequently contain such phrases as "'understands that . . . ' or 'knows that . . .'" (Kendall & Marzano, 2000, p. 24). Declarative knowledge can be thought of as knowledge "composed of the information important to a given content area" (Kendall & Marzano, 1995, p. 12). If you are teaching a high school anatomy course, it may be important for your students to know the names of the bones in the human body. If you are teaching a middle school English class, you may want your students to know the names for the various parts of speech, such as nouns, verbs, and adjectives. These examples illustrate information judged to be important to a full understanding of a subject.

Finally, content can also be described as **contextual knowledge**. This type of understanding includes "information and/or skills that have particular meaning because of the conditions that form part of their description" (Kendall & Marzano, 1995, p. 12). As its name implies, this type of knowledge is dependent on context. For example, knowing how to cut and paste paper involves procedural knowledge in the use of a pair of scissors and application of glue, but doing so in the context of creating a mosaic requires contextual knowledge. As a result, standards written to reflect the use of contextual knowledge also have language and phrasing that distinguish them. As explained by Kendall and Marzano, "Content that is contextual in nature also begins with verbs or verb phrases, but tends to look more like activities in that a particular skill is described in terms of the information or knowledge about or upon which the skill is applied" (2000, p. 24).

Although procedural, declarative, and contextual knowledge are reflected in content standards, this level of specificity is more commonly relegated to benchmarks (to be discussed in the next section). However, the development and articulation of content standards do reflect these three types of knowledge on a broad level, and an understanding of them is necessary for understanding the important functions and nature of content standards.

While content standards help educators see the various domains of a subject they are teaching, as well as the types of knowledge required to fully comprehend that subject, these standards can also be misused. The Council for Basic Education (1998) has listed and discussed a number of ways that standards can be misunderstood. We will address three of them here, using and expanding on the ideas the Council has articulated.

1. "Content standards determine the curriculum" (p. 4).

Local schools use content standards to determine their own curriculum. In most school districts, the curriculum director and teachers interpret the standards and then make decisions about pedagogy, assessment, and support materials, such as textbooks and other needed supplies. Content standards help local districts see the kind of coverage that is needed for each subject and what will likely be included on state-mandated assessments, but they do not dictate the nature or form of instruction. It is the responsibility of educators at the local level to make these determinations. Content standards are part of the curriculum framework. They are not intended to control how teachers reach learning goals and objectives.

2. "Content standards automatically exclude local content" (p. 6).

As part of a state curriculum framework, content standards outline the essentials of the content to be covered at local levels throughout the state. This does not preclude additions of local interest. For example, local historical events can easily be added to a curriculum even when they are not specifically attached to a content standard. Sometimes this can occur by using a specific event as an example and in this

way connecting it to a content standard. At other times, the event may simply be viewed as an enrichment that is not specifically covered in the standards but is worthy of recognition due to its local significance. In any case, the content standards are meant to guide, not to constrain curriculum choices.

3. "Content standards by themselves will improve the system" (p. 6).

Content standards have true value only if they are used. When content standards reflect current research, theory, and best practice models, they can serve as important instruments. However, if they are neither understood nor used to guide curriculum choices, they are of little worth. As a result of the No Child Left Behind Act, few districts can afford to ignore their state's content standards because these standards are aligned with the mandated assessments of their students. Given the high-stakes nature of these assessment tools, attention to the standards is nearly assured. However, valuing the standards remains a decision to be made at the local level.

When viewed correctly, content standards provide general statements of what students should know and be able to do within specific school subjects. While they provide guidance at the local level, they do not contain the kind of specificity most teachers require for shaping classroom-based instructional decisions. Curriculum frameworks typically include a second level of standards to serve this function. These are often called benchmarks.

Benchmarks

Benchmarks help provide a more detailed understanding of content standards in state curriculum frameworks. They can be most easily thought of as components of a standard. As described by Yates (2004), a **benchmark** is "a specific statement of what all students should know and be able to do at a specified time in their schooling. Benchmarks are used to measure a student's progress toward meeting the standard" (p. 13). A set of benchmarks will typically help teachers structure learning goals and objectives for classroom-based instruction and will show teachers when students will be assessed on detailed components of a content standard.

Again, because curriculum frameworks are structured and worded at the state level, some of the terminology used to describe what we are calling benchmarks varies. Some documents refer to them as *indicators*, *learning expectations*, or *performance standards*—a term we will use differently in the next section of this chapter (Kendall, Ryan, & Richardson, 2005). Another potential source of confusion is the **grade level indicators** often attached to benchmarks in state documents, as well as in documents produced by some national organizations. As noted earlier in this chapter, in some of these documents, benchmarks are listed by grade ranges, such as elementary, later elementary, middle school, and high school. In other documents, benchmarks are listed by specific grade ranges: K–3, 4–6, 7–9, and 10–12. These ranges have been interpreted as a kind of time frame within which specific benchmarks need to be covered and mastered. However, with the mandated assessment component of the No Child Left Behind Act, which requires annual testing of students in

Grades 3–8, some states have moved to setting benchmarks for each grade rather than for a range of grades, which makes the targeting of instruction toward specific benchmarks more focused for each grade level.

For individual grades or a range of grades, benchmarks are designed to provide a breakdown of content standards into the more specific components of a subject. A few examples from *Content Knowledge: A Compendium of Standards and Benchmarks for K–12 Education* (Kendall & Marzano, 2000) illustrate the typical form and function of benchmarks. Content standards are followed by a sampling of appropriate benchmarks to illustrate how they represent a breakdown of the standard:

Content Standard: Uses the general skills and strategies of the writing process

Benchmarks:

1. Prewriting: Uses prewriting strategies to plan written work (e.g., discusses ideas with peers, draws pictures to generate ideas, writes key thoughts and questions, rehearses ideas, records reactions and observations) [Grades K–2]

2. Drafting and Revising: Uses strategies to draft and revise written work (e.g., rereads; rearranges words, sentences, and paragraphs to improve sequence to clarify meaning; varies sentence type; adds descriptive words and details; deletes extraneous information; incorporates suggestions from peers and teachers; sharpens the focus) [Grades K–2] (Kendall & Marzano, 2000, p. 321)

Content Standard: Uses a variety of strategies in the problem-solving process

1. Understands how to break a complex problem into simpler parts or use a similar problem type to solve a problem [Grades 6–8]

2. Understands that there is no one right way to solve mathematical problems but that different methods (e.g., working backward from a solution, using a similar problem type, identifying a pattern) have different advantages and disadvantages [Grades 6–8] (Kendall & Marzano, 2000, pp. 47–48)

It is important to note in these example benchmarks that, while they provide a more detailed and grade-range-specific breakdown of the components of the content standard, they are neither too narrow nor too broad. Indeed, this is a characteristic of a well-written benchmark. When benchmarks are written very narrowly, they risk being so specific that they can be accomplished with very little effort, perhaps even in a single lesson. When they are too broad, they may not provide enough specificity for educators who must translate them into a series of classroom-based learning experiences (Kendall, 2001). As described best by Kendall, Ryan, and Richardson (2005), "A benchmark should be specific enough that readers are clear

about the instruction and learning it should entail, but not so narrow as to prescribe the day-to-day curriculum" (p. 2). Striking a balance between the narrow and the expansive is an important task for those who construct benchmarks and want them to be both understandable and usable.

A careful examination of the example benchmarks above also reveals the types of knowledge each promotes. For example, "Uses prewriting strategies to plan written work" is a procedural benchmark. Note that it begins with the key verb *uses* and lists skills and processes that are deemed important to the subject of writing: "draw pictures," "rehearse ideas," and so on. The mathematics benchmark "Understands how to break a complex problem into simpler parts or use a similar problem type to solve a problem" calls for contextual knowledge. Students must use their declarative and procedural knowledge to solve a problem that is set in a particular context. Finally, the benchmark "Understands that there is no one right way to solve mathematical problems but that different methods (e.g., working backward from a solution, using a similar problem type, identifying a pattern) have different advantages and disadvantages" calls for declarative knowledge. Note the key phrase *understands that* and how the benchmark describes information particular to the subject of mathematics. As you are beginning to understand the structure of benchmarks, we urge you to consult *Content Knowledge: A Compendium of Standards and Benchmarks for K–12 Education* (Kendall & Marzano, 2000) because it shows how each listed benchmark promotes one of the three types of knowledge. This resource can serve as a rich well of information for novice and experienced educators alike.

Although benchmarks can and do serve as valuable guides for classroom teachers, some caution is needed. When constructed well, a benchmark should be "a grade-appropriate or developmentally appropriate expression of knowledge or skill" (Kendall, 2001, p. 2). However, you must use your professional understanding of your students and their learning needs as a barometer to help you decide when, and even whether, your students are adequately prepared for the content or skills listed in a particular benchmark. Conversely, some students in your classroom will be beyond the benchmarks for your grade level. Consequently, we caution you to avoid using a list of benchmarks to develop sets of teaching and learning experiences without also considering the needs and skill levels of your learners. If students are not yet ready for some designated content or skills, even the best lessons will be in vain. On the other hand, if students have already mastered the content or skills designated for your grade or subject area, you risk boredom—at the very least. As you use benchmarks, bear in mind the words of Kendall (2001), who says that "because there is no definitive work available on what knowledge and skills should be addressed at each and every level, the work of grade placement of content is at best an 'educated guess,' at worst, an arbitrary assignment" (p. 17). Because standards and benchmarks are frequently designed by people with great expertise (and they may even represent a consensus of opinion within the field), they should be given very careful attention as you plan for your students' learning needs, but your own professional skill in determining what your students are and are not ready for is of equal importance.

Although content standards and benchmarks provide a helpful guide for educators at all levels, the sheer volume of some of these documents can make locating needed information laborious. As a result, many state curriculum frameworks include another level of descriptors, often referred to as topics or strands.

Topics or Strands

State curriculum framework documents are typically comprehensive and lengthy. Finding benchmarks or other needed information can become quite a feat—especially when they are listed on Web sites that require the viewer to scroll through several pages of documents. Recently, this became evident to me. In a lesson plan development assignment, I asked my own teacher education students to match their stated lesson objectives with the content standards and benchmarks listed in our state's framework. This task proved to be more difficult than I had imagined, and several students sought me out for assistance. Their frustration revolved around taking a subject, such as the language arts, and wading through several screens of content standards and benchmarks. It became clear to me that I had not done an adequate job of showing them another level of organization used in these documents: topic listings, also called strands.

A **topic** or **strand** can best be described as "a level of content organization that mediates between a standard and a benchmark. Under the geometry standard, for example, topics or strands might include Shapes and Figure, Lines & Angles, or Transformations/Motion Geometry" (Kendall, 2001, p. 3). In short, it may be easiest to think of topics or strands as subtopics used to organize a subject, with groups of benchmarks listed under each subtopic.

I helped my own students see how the subject of the language arts had been divided within the curriculum framework into its major categories: reading, writing, listening, speaking, viewing, and visually representing. Then, for a heading such as reading, several strands or topics were listed, with benchmarks after each one. For example, under a content standard listed in reading were several strands or topics, such as phonemic awareness, word study, narrative text, and informational text. Given this understanding of the organization of the standards document, my students were able to locate relevant benchmarks within specific subtopics rather than wading through all the benchmarks related to all the areas of the language arts. This level of organization is used in most subject listings in curriculum frameworks and can help make those documents far more user friendly.

Topics or strands will help you navigate your state's curriculum framework. Content standards and benchmarks will help you understand the domains of each subject, as well as providing a more detailed breakdown of what your students should know and be able to do at various levels. The question that educators must still address is one of proficiency levels. In short, how good is good enough? To address this issue, we turn next to developing an understanding of performance standards.

As teachers plan for instruction, they must carefully consider the performance standards articulated for each content area.

Performance Standards

Let's pretend for a moment that you are a middle school social studies teacher. You have consulted your district's document on the content to be taught in your course and have carefully designed a curriculum on the history of World War II. In addition, you have strategically aligned your curriculum with the content standards and benchmarks listed in your state's curriculum framework for your grade level. As you prepare to develop teaching and learning opportunities for your students, as well as appropriate assessments, several questions remain unanswered: How proficient will your students need to be with this material, and how will their proficiency be measured on the high-stakes, state-mandated assessment of the material? Will it be enough to plan so that your students will simply know the important dates and events in this period? Or will they need to compare and contrast these events with those surrounding present world events and political tensions? Addressing these questions is part of the role of performance standards.

As described by Yates (2004), "**Performance standards** state the level of mastery or competency at which students should know the standard" (p. 12).

Similarly, Kendall (2001) states that "a performance standard describes the levels of student performance in respect to the knowledge or skill described in a single benchmark or a set of closely related benchmarks. A performance standard might be described by means of a rubric or cut-score, or could even be expressed as a percentage correct of the test items designed to assess students on a particular benchmark" (p. 3). Performance standards articulate both how proficient students must be in relation to content standards and benchmarks and how their proficiency is to be reported.

Performance standards are typically developed using a **taxonomy**. Most familiar to many educators is the original Bloom's taxonomy (Bloom, 1956). It lists six levels of understanding concepts, beginning with knowledge (the lowest level), then comprehension, application, analysis, synthesis, and, at the highest level, evaluation. In many standards documents, performance standards are listed using verbs that match each level, such as list, summarize, apply, analyze, integrate, and assess (Kendall, Ryan, & Richardson, 2005). If your state documents use Bloom's taxonomy, knowing the required levels (and types of proficiency expected) for specific content standards and benchmarks will help you plan instruction. For example, if students need to "apply" information, you will need to move beyond a simple listing of dates and events (returning to our World War II example) and consider how students will need to use that information in other contexts.

Kendall, Ryan, and Richardson (2005) have argued that the hierarchal structure of Bloom's taxonomy does not reflect what is currently known about student learning, and they argue for an alternative taxonomy developed by Marzano.

> Of most interest for the purpose of developing performance standards for classroom use . . . is a taxonomy of educational objectives designed by Marzano (2001). This taxonomy is consistent with recent research in cognitive science about the relative difficulty of mental tasks. Marzano notes that, with the complexity of a mental process or skill—such as performing long division—the more familiar one is with a process, the more quickly one executes it and the easier it becomes. Thus, mental processes and skills should not be ordered hierarchically in terms of their complexity. They can, however, be ordered in terms of levels of control—that is, some mental processes exercise control over other processes. (p. 5)

Marzano's taxonomy includes six levels—although Kendall, Ryan, and Richardson (2005) note that only the first four are used with any regularity in standards documents. They further suggest that each of the levels is ranked hierarchically based on levels of control and "the conscious awareness that is required to execute them" (p. 5), rather than a perceived complexity of the tasks themselves. The first four levels of Marzano's taxonomy are presented in Table 1.1.

Given that either Bloom's or Marzano's taxonomy or both may be used in your state's standards documents, we urge you to develop an understanding of the

Table 1.1   Marzano's Taxonomy: Levels 1–4

Level 1: Retrieval	Level 2: Comprehension	Level 3: Analysis	Level 4: Utilization
Recall	Synthesis	Matching	Decision making
Execution	Representation	Classifying	Problem solving
		Error analysis	Experimental inquiry
		Generalizing	Investigation
		Specifying	

SOURCE: Adapted from: Marzano (2001), in Kendall, Ryan, & Richardson (2005, pp. 6–7).

implications of each and an awareness of which one is used because it may have direct implications for the way you structure teaching and learning opportunities for your students. A more detailed explanation of the Marzano taxonomy can be found in Kendall, Ryan, and Richardson (2005).

As noted earlier, performance standards are often used to report the level of proficiency students have attained for stated standards and benchmarks. This information may also be presented to students' parents and guardians. It may be found on district report cards and the reports of student proficiency on state-mandated assessments. Table 1.2 lists the statements that accompanied the Parent Report on the State of Michigan's annual assessment of fourth graders in English Language Arts and Mathematics.

At several levels, then, performance standards can be helpful to classroom teachers and parents or guardians, as well as others involved in education. For the classroom teacher, performance standards provide assistance in determining the proficiency level at which students must demonstrate their mastery of content described in content standards and benchmarks. Performance standards also aid teachers in understanding how the information must be mastered, whether at the level of comprehension or analysis or some other level of a taxonomy of skills, thus helping teachers prepare appropriate classroom learning activities. Furthermore, the use of proficiency standards in reports on students' progress can supply parents and guardians with helpful information for planning supportive activities.

One more type of standard involves skills and processes that may not be subject specific but are nonetheless important for students to develop. They are often referred to as lifelong-learning standards.

Lifelong-Learning Standards

Some skills and processes are used in a variety of subject areas and even beyond the traditional subjects addressed in schools. For example, being a critical thinker

Table 1.2 Performance Level Descriptors

Level 1: Exceeded standards

The student's performance exceeds proficiency standards and indicates substantial understanding and application of key curriculum concepts defined for Michigan students.

Level 2: Met standards

The student's performance is proficient and indicates sufficient understanding and application of key curriculum concepts defined for Michigan students.

Level 3: Basic

The student's performance is not yet proficient, indicating a partial understanding and application of key curriculum concepts defined for Michigan students.

Level 4: Apprentice

The student's performance is not yet proficient and indicates minimal understanding and application of key curriculum concepts defined for Michigan students.

SOURCE: From the Michigan Educational Assessment Program, *Parent Report,* Fall 2005. Reprinted with permission of the Michigan Department of Education.

can be an important skill in such school subjects as history, reading, writing, or mathematics, but it is not confined to any one of these subjects. As a result, some state curriculum frameworks may have a separate category of standards related to these skills or processes.

Kendall (2001) defines a lifelong-learning standard as "a summary description regarding what students should know and/or be able to do across a variety of disciplines—for example, 'The student applies decision-making techniques'" (p. 4). He goes on to say that "lifelong-learning standards may address self-regulation, the ability to work with others, and critical thinking. Although they are 'content free' in description, this is because they are and can be applied to content across the curriculum" (p. 4).

Lifelong-learning standards may be included in a separate category in your state's curriculum framework. They may also be embedded into each of the subject area content standards and benchmarks. We mention them briefly here to alert you to them so that you can explore how your state has chosen to articulate and assess them.

Finally, as mentioned earlier, states often work closely with national professional organizations as they develop content standards and benchmarks. These

organizations often represent researchers, university faculty, and classroom practitioners dedicated to conducting research and exploring theory, as well as learning from and influencing classroom-level instruction in particular subject areas. Although our intent is neither to promote individual organizations nor to provide a high level of detail on them, we believe that an awareness of their role is important as we consider the dynamics of working with content standards and benchmarks.

National Professional Organizations

Early on in the standards-based reform movement, various professional organizations established content standards within their own subject area. Among the first was the NCTM, which began writing content standards for mathematics curriculum and assessment in 1987 (Kendall & Marzano, 2000). In the ensuing years, several other subject-focused groups began writing or revising standards. This process has not been without controversy.

Some professional organizations believed that content standards should be written at a level of abstraction that would allow local interpretation. In short, they believed that specific content should be determined by states and local school districts rather than at the national level. Further complicating this situation, organizations often wrote standards using different formats, some focusing on skills and processes and others using a performance-based approach (Kendall & Marzano, 2000). Other organizations were criticized for producing standards with a political or ideological agenda (Glatthorn, 1998). In an attempt to bring coherence to the diversity of approaches used by these organizations, other groups dedicated their efforts to providing a synthesis of standards and benchmarks, drawing on those developed and used by states and professional organizations. One such example is the work done by the Mid-continent Research for Education and Learning organization.

The standards and benchmarks developed and promoted by various professional and national groups can be of great help to both local administrators and classroom teachers. In Table 1.3, we have supplied the names of many of these organizations and the Web sites that contain their standards documents. We urge you to explore these Web sites (as well as others you may discover) to familiarize yourself with the standards and benchmarks these organizations and agencies have developed or synthesized.

Table 1.3   Professional Organizations With Standards and Benchmarks for Subject-Matter Teachers

Subject	Organization	Web address
General resource	Mid-continent Research for Education and Learning	www.mcrel.org
Reading, literacy, and reading in the content areas	International Reading Association (IRA)	www.reading.org
	National Reading Conference (NRC)	www.nrconline.org
English	National Council of Teachers of English (NCTE)	www.ncte.org
Mathematics	National Council of Teachers of Mathematics (NCTM)	www.nctm.org
Social studies	National Council for the Social Studies (NCSS)	www.ncss.org
The sciences	National Association of Biology Teachers (NABT)	www.nabt.org
	National Science Teachers Association (NSTA)	www.nsta.org
	The National Academies Press (NAP)	www.nap.edu
	American Association of Physics Teachers (AAPT)	www.aapt.org
Foreign languages	American Council on the Teaching of Foreign Languages (ACTFL)	www.actfl.org
Music	National Association for Music Education (MENC)	www.menc.org
Physical education, health, and dance	American Alliance for Health, Physical Education, Recreation and Dance	www.aahperd.org
	National Association for Sports and Physical Education	www.aahperd.org/NASPE
The arts	National Art Education Standards	www.artteacherconnecti on.com (enter and click on National Standards
Technology	International Society for Technology in Education *(National Educational Technology Standards for Students)*	www.iste.org

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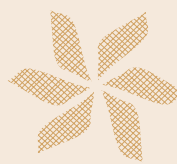
Summary

Since the beginnings of the standards-based reform movement more than two decades ago, much work has been done to bring clarity to the question of what content teachers should address in their classroom-based instruction. As reported in a study by Kirschner (2004), classroom teachers can learn much about their own approaches to content studies, enhancing their "beliefs, knowledge, and practice" (p. 195), when they study and use the standards documents designed to guide their instruction and assessment practices. Despite ongoing debates over the need for consistency in standards documents and the use of mandated assessments based on them, curriculum frameworks that include well-designed content standards, benchmarks, topics, performance standards, and lifelong-learning standards can serve as powerful tools in your work as a teacher. Familiarizing yourself with them may even allow you to avoid your own version of a frantic assembly-line birdhouse-building session with your own students in the future!

In the models chapters in Part 2 of this book, we have used sample standards and benchmarks to illustrate how each of the models can aid you in reaching the standards and benchmarks set by your own state and local agencies. We urge you to consider how standards can be a vital component in helping you select models appropriate to your own learning goals and objectives for the students in your classroom.

Student Study Site

The Companion Web site for *Models of Teaching: Connecting Student Learning With Standards*

www.sagepub.com/delloliostudy

Visit the Web-based student study site to enhance your understanding of the book content and discover additional resources that will take your learning one step further. You can enhance your understanding by using the comprehensive Study Guide, which includes chapter learning objectives, flash cards, practice tests, and more. You'll find special features, such as the links to standards from U.S. States and associated activities, Learning from Journal Articles, Field Experience worksheets, Learning from Case Studies, and PRAXIS resources.

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