

Unpacking Standards

Standards can be somewhat opaque, and they often vary in clarity, complexity, and specificity. Some standards are broad, cutting across many courses and grade levels; others are narrow and content-specific. Some refer to content that must be taught; other standards refer to performance levels that must be achieved.

A standard has to be treated like any other nonfiction text; that is, we have to carefully analyze and interpret its meaning. A standard poses a challenge similar to the one posed by determining the meaning of the Bill of Rights in specific situations. In fact, a standard represents key principles that demand constant thought and discussion. That’s what we mean by saying that educators need to “unpack” standards for local use. The practical meaning of a standard is not self-evident even if the writing is clear.

Consider this example:

Virginia History 5.7

The student will understand the causes and effects of the Civil War with emphasis on slavery, states’ rights, leadership, settlement of the west, secession, and military events. [Source: VA Curriculum Framework United States History to 1865; Commonwealth of Virginia Board of Education Richmond, Virginia Approved—July 17, 2008]

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Stage 1—Desired Results		
<p>Established Goals</p> <p>Common Core State Standards in Math</p> <p>Interpret the structure of expressions</p> <p>1. Interpret expressions that represent a quantity in terms of its context.</p> <p>Write expressions in equivalent forms to solve problems</p> <p>3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.</p> <p>Rewrite rational expressions</p> <p>6. Rewrite simple rational expressions in different forms.</p> <p>Mathematical Practices</p> <p>1. Make sense of problems and persevere in solving them.</p>	Transfer	
	<p><i>Students will be able to independently use their learning to . . .</i></p> <p>Solve nonroutine problems by persevering: simplify them, interpret expressions, and use equivalent forms based on the properties of real numbers and the order of operations.</p>	
	Meaning	
	<p>UNDERSTANDINGS</p> <p><i>Students will understand that . . .</i></p> <p>1. In mathematics, we accept certain truths as necessary to permit us to solve problems with logical certainty (e.g., the properties of real numbers), whereas other rules are conventions that we assume just for effective communication.</p> <p>2. We can use the commutative, associative, and distributive properties to turn complex and unfamiliar expressions into simpler and familiar ones when problem solving.</p>	<p>ESSENTIAL QUESTIONS</p> <p><i>Students will keep considering . . .</i></p> <p>1. What important rules and conventions are required to make algebra “work”?</p> <p>2. How can we simplify this expression?</p>
	Acquisition of Knowledge & Skill	
	<p><i>Students will know . . .</i></p> <p>1. The commutative property and to which operation it applies (and when it does not apply).</p> <p>2. The associative property and to which operation it applies (and when it does not apply).</p> <p>3. The distributive property and to which operation it applies (and when it does not apply).</p> <p>4. The “order of operations” mathematicians use and why is it needed.</p>	<p><i>Students will be skilled at . . .</i></p> <p>1. Writing expressions in equivalent forms.</p> <p>2. Revealing and explaining properties represented.</p> <p>3. Rewriting rational expressions in different forms.</p> <p>4. Identifying equivalence that results from properties and equivalence that is the result of</p>

Source: Goals from high school algebra standards, pp. 63–65. © Copyright 2011, National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved.

What does “understand” mean here? Does it mean make meaning of and transfer? Or does it mean something narrower like analyze? Or is the demand far more modest, namely “Accurately state and explain what others—credible experts—have analyzed the causes and effects to be, as found in textbooks” (in other words “understand” = “know”)? As you can see, how we teach and how we assess this

standard is greatly affected by the outcome of our inquiry. Such unpacking is essential at the local level if the standards are to be validly and consistently addressed across teachers, given the ambiguity of the key verb.

Even if we agree on what “understand” means here, there is a second question that must still be considered: What is an adequate understanding for a 5th grader? In other words, how well must a student understand the causes and effects? How sophisticated should that understanding be, to be a fair expectation of a 5th grader? In other words, merely knowing the content to be addressed is not enough information for local action. We need to analyze all relevant text to infer a reasonable performance standard for assessing student work, that is, to know when student work related to the standard is or isn’t meeting the standard.

Structure and Organization of Standards

Another reason for unpacking has to do with the fact that standards are typically written in a hierarchical outline form. In many documents, the first level is the most broad and comprehensive statement, and the second and third levels are typically more concrete and narrowly focused. Each discrete element and outcome of learning is listed in an analytic fashion.

Alas, as we well know from experience what seems like a good idea in theory—a hierarchical list of key elements—has an unfortunate common unintended consequence. Some educators think that standards, arranged as organized in lists, need to be covered, one by one, in lessons and units. Not only is this practice unwise pedagogically; it is not the writers’ intent. Some standards documents offer explicit cautions against such decontextualized teaching; for example:

Many of the objectives/benchmarks are interrelated rather than sequential, which means that objectives/benchmarks are not intended to be taught in the specific order in which they are presented. Multiple objectives/benchmarks can and should be taught at the same time. [emphasis in the original]

(Source: 2007 Mathematics Framework, Mississippi Department of Education, p. 8)

Here is how the Common Core State Standards in English Language Arts are introduced:

While the Standards delineate specific expectations in reading, writing, speaking, listening, and language, each standard need not be a separate focus for instruction and assessment. Often, several standards can be addressed by a single rich task. (Source: Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects, p. 5)

Alas, this advice is routinely overlooked or ignored in local curriculum work. And yet the distinction between discrete elements and a more integrated curriculum plan is just common sense. A good meal is more than just the listed ingredients in the recipe; a successful home renovation doesn't merely involve contractors addressing each isolated piece of the building code; music is not made by learning hundreds of discrete notes, key signatures, and tempos in isolation from performance. In fact, if transfer and meaning making are the goals of education, they can never be achieved by a curriculum that just marches through discrete content elements, no matter how sensible the hierarchical list is as an outline of a subject's high points.

Misconception Alert

Standards documents are written in a hierarchical list format. This analytic framing of standards can easily mislead teachers into the following misconceptions:

- The standard clearly expects me to teach and test each objective in isolation.
- I'll just focus on the top level (i.e., the broadest) standard. Then, I can justify most of what I already do as meeting the standard.
- I'll just focus on the lowest levels and check off these very specific objectives that are covered in my normal unit. Then, I have addressed the standard.

Each claim is inaccurate and leads to needlessly isolated and ineffective teaching and assessment.

Different Goal Types in the Standards

A third reason for unpacking standards results from the fact that standards not only come in different shapes and sizes, but typically address different types of learning goals. It is not uncommon for a standard to mix together acquisition, meaning, and transfer goals in the same list without calling attention to the fact that each type of goal is different and likely requires different instructional and assessment treatments. Here is an example from the Common Core State Standards for 5th grade math:

Number and Operations in Base Ten—5.NBT

Understand the place value system.

1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
3. Read, write, and compare decimals to thousandths.
4. Use place value understanding to round decimals to any place.

As we interpret the standards, 1 and 2 are really about meaning-making (though the verb “recognize” may lull some into thinking that this is about low-level acquisition), 3 is a mixture of acquisition (“read and write”) and meaning-making (“compare”), and 4 could be either skill focused or transfer focused, depending upon how novel, complex, and unprompted the tasks given to students. The careful interpretation is why it is neither redundant to have a separate section on the Template for unit-relevant standards (or established long-term goals) nor superfluous to place the appropriate parts of a standard into the Stage 1 and 2 boxes, with additional clarifying language when needed. When completed, Stage 1 provides evidence that the standards were unpacked in a transparent way, and shows how the various goals properly relate to one another.

So, rather than simply lumping all standards together and calling them your unit goals, we strongly recommend that designers carefully examine each standard and place its components—whether stated or implied—in the appropriate Stage 1 box: Transfer, Essential Questions, Understandings, Knowledge, or Skill.

Misconception Alert

Be careful if you work in a state that makes reference to “big ideas” and “essential questions” in their standards. They do not always correspond to how we define these terms in UbD. For example, Florida highlights certain standards by labeling them big

ideas, but this use of the phrase is meant to simply signal priorities in general rather than specific transferable ideas to be grasped and used.

MA.5.A.2, BIG IDEA 2: Develop an understanding of and fluency with addition and subtraction of fractions and decimals. (Source:

<http://www.floridastandards.org/Standards/PublicPreviewIdea196.aspx>)

Similarly, some states have listed essential questions in their standards or resource documents, but most of these would not meet the UbD design standard. For example, consider two listed “essential questions” in The Virginia History and Social Science Standards of Learning Curriculum Framework 2008, a companion document to the 2008 History and Social Science Standards of Learning:

- What are the seven continents?
- What are the five oceans?

Although these questions may point toward important knowledge, they are certainly not essential in the UbD sense because they are factual questions, not designed to cause in-depth inquiry and discussion. In sum, beware—especially when familiar jargon is used in the documents.

Turning Standards into Sound Curriculum, Instruction, and Assessment

Based on these cautions and mindful of the need for practical tools in working through these issues, we offer the following five tips for unpacking the standards.

Tip 1. Look at all key verbs to clarify and highlight valid student performance in which content is used. Carefully analyze the verbs and try to determine their meaning for assessment and thus instruction. For example, does “respond to” mean “resonate with” or “write about” or “make a personal connection to the text”? What counts as “understanding” the causes and effects of the Civil War?

For example, does “understand” in this case mean “accurately recall what the textbook said” were the major causes? Or are the students expected to make their own analyses, based on primary and secondary source evidence, and also defend them? Obviously, the answers affect the overall unit design and, especially, the assessments.

One would hope, of course, that the language used in standards documents is consistent and grounded in a valid framework such as Bloom’s taxonomy. For example, it seems reasonable to assume that phrases like “analyze” or “solve problems” are meant to signal more higher-order inferential work than is required by standards that say “describe” or “identify.”

Our experience from working with standards-writing committees proves that verbs are not always used in a consistent or appropriate manner. Nor are glossaries containing operational definitions of key verbs usually provided. Making matters worse, most standards documents do not state whether there is a pedagogical rationale behind the use of specific verbs or instead whether the verbs vary for aesthetic reasons (to avoid repetition in the text).

We recommend that your committee members scour relevant websites and communicate with state education departments to clarify this basic issue when necessary. We also highly recommend that educators look at whatever test specifications exist for state standards because the test-maker needs this same information in order to construct valid measures. In some states, the test specifications found under the state assessment section are more helpful than the standards themselves. For example, take a look at Florida Math Test Specifications at http://fcad.fldoe.org/pdf/G9-10_Math_Specs_1-39.pdf.

Tip 2: Look at the recurring nouns that signal big ideas. A related approach to unpacking standards involves finding important nouns, that is, key concepts, principles, themes, and issues that can be turned into essential questions

and understandings. Here is an example from the Common Core State Standards that illustrate this approach (bold added to key nouns that signify big ideas):

Expressions and Equations 7.EE

Use **properties of operations** to generate **equivalent expressions**.

1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.” (p. 49)

Notice how the phrases we boldface also suggest possible essential questions and Understandings that could be put in the UbD planner:

- How can we simplify this problem by using equivalent expressions and properties? How can we rewrite this equation to reveal important relationships and meanings?
- Problem solving often requires finding equivalent expressions in which complex elements are made simpler and more familiar via the properties of operations.

Tip 3: Identify and analyze the key adjectives and adverbs to determine valid scoring criteria and rubrics related to successful performance against the standards. The qualifiers of the verbs and nouns can provide a useful and efficient way to build a set of local rubrics to ensure that assessment is standards based and consistent across assignments. Here is an example, using a reading standard, in which key qualifiers are in bold and implicit qualifiers are added in italics:

Cite **strong and thorough** textual evidence to support an *accurate and justified* analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain. (From Common Core State Standards ELA, Grades 11–12. Key Ideas and Details, Informational Text p. 40)

So the rubric titles might be Quality of Evidence Cited and Quality of Analysis Made.

Tip 4. Identify and/or infer the long-term transfer goals by looking closely at the highest-level standards and indicators for them, or inferring the transfer goal from the content and justification for the standard. Even if the standard stresses important content, it typically states or implies key performance related to that content. In other words, if that’s the content, what are students eventually expected to do with it? Long-term transfer goals answer the “Why are we learning this?” question. Ask yourself

- What should students be able to do well on their own while using this content, to truly meet this standard and its purpose? (complex performance ability)
- What does “perform well” mean for each standard? (specific performance standards and criteria for evaluating complex performance)

In the event that the documents for your state, province, or nation do not identify such long-term performance goals, we recommend that you look at the introductory pages for each discipline. Larger goals, purposes, or intentions of the standards are often presented in the opening section before the specifics are listed.

Tip 5: Consider the standards in terms of the long-term goal of autonomous performance. To stress the transfer aspect of the goal, make a point of highlighting the idea that students are expected to perform with content autonomously. The most concrete and helpful way to do this is to make explicit and write in a phrase that is unfortunately implicit in most standards: ***on their own***.

Students must be able to use content autonomously, without the need for extensive scaffolding, reminders, and hints. So, add “on their own” to each standard to better grasp the kind of independent transfer expected.

Now, consider how the use of this phrase could influence assessment and instruction. For example, it suggests the need for a “gradual release” of teacher direction over time so that learners develop increasing capacity for independent performance. The following examples, from the Common Core State Standards, in which we added the key phrase, underscore this point:

GRADE 5 READING: Key ideas and details.

Students on their own

1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
2. Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. (Source: Common Core State Standards, p. 12)

GRADE 8 MATHEMATICS: Functions.

Students on their own

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities. (Source: Common Core State Standards, p. 53)

Far too many teachers heavily scaffold learning activities, discussions, exercises, and assessments right up until the end of the year. Students then get too little practice and feedback in identifying main ideas or solving multistep problems *on their own*. It should not surprise us, then, when students do poorly on these abilities on standardized tests.

In fact, the Common Core State Standards document in English Language Arts explicitly stresses independence as one of seven key traits that present an emerging “portrait of students who meet the standards”:

They demonstrate independence.

Students can, without significant scaffolding, comprehend and evaluate complex texts across a range of types and disciplines, and they can construct effective arguments and convey intricate or multifaceted information.

Likewise, students are able independently to discern a speaker’s key points, request clarification, and ask relevant questions. They build on others’ ideas, articulate their own ideas, and confirm they have been understood. Without prompting, they demonstrate command of standard English and acquire and use a wide-ranging vocabulary. More broadly, they become self-directed learners, effectively seeking out and using resources to assist them, including teachers, peers, and print and digital reference materials. (p. 7)

Using other Common Core Standards, we offer additional examples about how the standards can be unpacked to represent every element in Stage 1 of the Template. Refer to the Tips and Tools section of this module.

Design Tip: Here are some basic rules for interpreting established standards:

- Look closely at verbs, but be aware that not all standards documents use verbs consistently to signal the type of goal or degree of cognitive demand. Check your state or provincial documents for guidance.

- Some standards statements begin with a low-level verb (identify, describe, state). Don't be confused into thinking that this automatically signals a skill. Generally, such statements call for knowledge. For example, "Identify parts of speech" specifies declarative knowledge because it means that "the student will know the parts of speech," despite the action verb in the beginning. Look at the test specifications for the standards for clarification.
- When higher-order verbs are used (analyze, infer, generalize), the goal can be ambiguous. If the verb is followed by or describes general abilities, it is likely stating a transfer goal. However, the verb may be used as a performance indicator and thus will be more useful for determining specific assessment evidence in Stage 2.

References

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