



***Understanding by Design***  
**by Grant Wiggins and Jay McTighe**

## Chapter 4. The Six Facets of Understanding

Copyright © 1998 by the Association for Supervision and Curriculum Development. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission from ASCD.

There are many different ways of understanding, overlapping but not reducible to one another and, correspondingly, many different ways of teaching to understand.

—Passmore, 1982, p. 210

We have developed a multifaceted view of what makes up a mature understanding, a six-sided view of the concept. The six facets are most easily summarized by specifying the particular achievement each facet reflects. When we truly understand, we

- Can *explain*: provide thorough, supported, and justifiable accounts of phenomena, facts, and data.
- Can *interpret*: tell meaningful stories; offer apt translations; provide a revealing historical or personal dimension to ideas and events; make it personal or accessible through images, anecdotes, analogies, and models.
- Can *apply*: effectively use and adapt what we know in diverse contexts.
- Have *perspective*: see and hear points of view through critical eyes and ears; see the big picture.
- Can *empathize*: find value in what others might find odd, alien, or implausible; perceive sensitively on the basis of prior direct experience.
- Have *self-knowledge*: perceive the personal style, prejudices, projections, and habits of mind that both shape and impede our own understanding; we are aware of what we do not understand and why understanding is so hard.

These facets are different but related, in the same way that different criteria are used in judging the quality of a performance. For example, "good essay writing" is composed of persuasive, organized, and clear prose. All three criteria need to be met, yet each is different from and somewhat independent of the other two. The writing might be clear but unpersuasive; it might be well organized but unclear and somewhat persuasive.

Similarly, a student may have a thorough and sophisticated explanation but not be able to apply it, or see things from a critical distance but lack empathy. The facets reflect the different connotations of *understanding* we considered in the previous chapter, yet a complete and mature understanding ideally involves the full development of all six kinds of understanding.

### Misconception Alert

We caution readers to treat these divisions as somewhat artificial and not the only possible take on the subject. The analytic framework we offer makes teaching and assessing for subject-matter mastery more manageable. Further analysis might yield different conceptual distinctions and hierarchies, and we are open to what our readers might say on this subject.

The important point is that understanding is a family of related abilities. We trust that readers will see that "understanding by design" is made more likely through the kinds of distinctions we are making here.

### Overview of the Facets

Understanding is always a matter of degree, typically furthered by questions and lines of inquiry that arise from reflection, discussion, and use of ideas—including our attempts to understand understanding. Our explanation of each facet involves three different takes on the concept:

- Introduce each facet with a brief definition, followed by an apt quote and questions that might be typical of someone wishing to understand.
- Offer two examples for each facet, one from daily public life and one from the classroom, as well as an example of what a lack of understanding looks like.
- Provide an analysis of each facet, offering a brief look at the instructional and assessment implications to be explored later in this book.

### Facet 1: Explanation

Explanation: sophisticated and apt explanations and theories, which provide knowledgeable and justified accounts of events, actions, and ideas.

We see something moving, hear a sound unexpectedly, smell an unusual odor, and we ask: What is it? . . . When we have found out what it signifies, a squirrel running, two persons conversing, an explosion of gunpowder, we say that we understand

—Dewey, 1933, pp. 137, 146

Why is that so? What explains such events? What accounts for such action? How can we prove it? To what is this connected? How does this work? What is implied?

- ✓ A cook explains why adding a little mustard to oil and vinegar enables them to mix. The mustard acts as an emulsifier.
- ✓ A 10th grade history student provides a well-supported view of the economic and political causes of the American Revolution.
- × A 10th grade student knows the facts of the Boston Tea Party and the Stamp Act but not why they happened and what they led to.

Facet 1 involves the kind of understanding that emerges from a well-developed and supported theory, an explanation that makes sense of puzzling or opaque phenomena, data, feelings, or ideas. It is understanding revealed through performances and products that clearly, thoroughly, and instructively explain how things work, what they imply, where they connect, and why they happened.

### Knowledge of Why and How

Understanding is thus not mere knowledge of facts but knowledge of why and how. Here are some examples:

- We know that the Civil War happened, and we can perhaps cite a full chronology. But why did it happen?
- We may know that different objects fall to the ground with apparent uniformity of acceleration. But how is that so? Why does mass not make a difference in acceleration? To understand in this sense is to connect facts and ideas—often seemingly odd, counterintuitive, or contradictory facts and ideas—into a theory that works.

As Dewey (1933) explained, to understand something "is to see it in its *relations* to other things: to note how it operates or functions, what consequences follow from it, what causes it" (p. 137) (emphasis in original). We go beyond the information given to make inferences, connections, and associations—a theory that works. Powerful and insightful models are the results of this understanding. We can bind together seemingly disparate facts into a coherent, comprehensive, and illuminating account. We can predict heretofore unsought for or unexamined results, and we can illuminate strange or unexamined experiences.

What do we mean by a theory that works? Let us first consider a successful adult theory, the example of modern physics. Galileo, Kepler, and finally Newton and Einstein developed a theory capable of explaining the movement of all physical objects, from falling apples to comets. The theory predicts tides, the location of planets and comets, and how to put the nine ball in the corner pocket.

The theory was not obvious or due to mere cataloging of facts: The authors had to imagine a frictionless world, with movement on earth a special case. Of course, their critics had a field day with the idea that there was a force—gravity—everywhere on earth, acting at a distance, but by no discernible means—and (contrary to the ancient Greek view and common sense) acting in such a way that the weight of an object had no effect on its rate of descent to earth. The theory eventually won over competing theories because, despite its counterintuitive elements, it did a better job than any competing theory of explaining, ordering, and predicting phenomena.

Similarly, a student who can explain why steam, water, and ice, though superficially different, are the same chemical substance has a better understanding of H<sub>2</sub>O than someone who cannot. A student reveals an understanding of things—perhaps an experience, a lesson by the teacher, a concept, or her own performance—when she can give good reasons and provide relevant and telling evidence to support her claims. More thorough understandings involve more thorough and systematic explanations, typically when an event is subsumed under general and powerful principles. Merely learning and giving back on tests the official theory of the textbook or teacher are not evidence of understanding. Facet 1 calls for a student to be given assignments and assessments requiring an explanation of what the student knows and good reasons in support of it before we can conclude that the student understands what was taught.

### Warranted Opinions

Understandings in this sense thus go beyond true or borrowed opinions (mere right answers) to *warranted* opinions—a student's ability to explain an answer so that he can justify how he arrived at that answer and why it is right. We call upon students to reveal their understanding by using such verbs as *explain, justify, generalize, predict support, verify, prove, and substantiate*.

Regardless of the subject content or the age or sophistication of the student, when the student understands in the sense of Facet 1, that student has the ability to "show her work": explain why an answer is right or wrong, give valid evidence and argument for a view, and defend that view against other views, if needed. We are also implying for assessment that the student must be confronted with a new phenomenon, fact, or problem to see if she can, on her own, subsume it under the correct principle and explain away apparent counterarguments and counterexamples.

The student with the most in-depth understanding in this sense both sees and explains diverse data more precisely and grasps the more subtle aspects of the ideas or experience in question. Those understandings are invariably described by teachers as thorough, nuanced, or thoughtfully qualified (as opposed to merely glib, sweeping, or grandiose theorizing). The student has an understanding of guiding principles that explain and give value to the facts. An explanation or theory without such understanding is typically not so much wrong as it is incomplete or naive. It is not wrong to say that the Civil War was fought over slavery, or that literature often involves good versus evil, however naive or simplistic those answers might appear.

### Instructional Implications

What are the instructional implications for developing the type of understanding described in Facet 1? This facet suggests that we deliberately seek a better balance between knowledge transmission (through the teacher and text) and student theory building and testing. A simple strategy to accomplish this goal is to focus on the 5 "W" questions at the heart of journalism—who, what, where, when, and why—in instruction and assessment.

From a design point of view, Facet 1 calls for building units around overarching (essential and unit) questions, issues, and problems that demand student theories and explanations, such as those found in problem-based learning and effective hands-on and minds-on science programs. The implications for assessment are straightforward—use assessments (e.g., performance tasks, projects, prompts, and tests) that ask students to explain, not simply recall; to link specific facts with larger ideas and justify the connections; to show their work, not just give an answer; and to support their conclusions.

### Facet 2: Interpretation

Interpretation: interpretations, narratives, and translations that provide meaning.

Juzo Itami's films revealed truths to the Japanese they never knew existed—even though they were right there in their daily life. "He could express the inside story about things people think they understand but really don't," said film critic Jun Ishiko

—*Washington Post*, 1997, p. A1

The object of interpretation is understanding, not explanation. Understanding occurs when we organize essentially contestable but "incompletely verifiable propositions in a disciplined way" (Bruner, 1996, p. 90). A principal means for doing that organizing is through narrative: by telling a story of what something is about. But as Kierkegaard had made clear many years before, telling stories in order to understand is no mere enrichment of the mind; without them we are, to use his phrase, reduced to fear and trembling (Kierkegaard, in Bruner, 1996, p. 90).

What does it mean? Why does it matter? What of it? What does it illustrate or illuminate in human experience? How does it relate to me? What makes sense?

- &check; A grandfather tells stories about the Depression to illustrate the importance of saving for a rainy day.

- &check; An 11th grader shows how *Gulliver's Travels* can be read as a satire on British intellectual life; it's not just a fairy tale.
- × A middle school student can translate all the words but does not grasp the meaning of a Spanish sentence.

We value good storytellers with reason: A good story both enlightens and engages. A clear and compelling narrative helps us find meaning, not just scattered facts and abstract ideas. Stories help us remember and make sense of our lives and the lives around us. The deepest, most transcendent meanings are found, of course, in the stories, parables, and myths that anchor all religions. A story is not a diversion; the best stories make our lives more understandable and focused.

### Meanings Transform Understanding

The meanings we ascribe to all events, big and small, transform our understanding and perception of particular facts. The student possessing this understanding can show an event's significance, reveal an idea's importance, or provide an interpretation that strikes a deep chord of recognition and resonance. Consider how memorable Martin Luther King Jr.'s March on Washington speech ("I have a dream") and imagery crystallized the many complex ideas and feelings behind the Civil Rights movement. Or, think of how the best newspaper editorials make sense of complex political currents and ideas.

Meaning, of course, is in the eye of the beholder. Think of how much November 22, 1963 (the day of President Kennedy's assassination), means as a watershed event to those of us who came of age in the '60s. Or, consider how differently a mother, a police officer, or an adolescent in a foster home might perceive the same newspaper account of severe child abuse. Social workers and psychologists might well have an accepted theory of child abuse in the sense of Facet 1. But the meaning of the event, hence an understanding of it, may have little to do with the theory; the theory may be only a scientific account, with no bearing, for example, on the abused person's view of the event and the world.

Making sense—of the stories of others and of discrete data on facts—involves translation and interpretation. Whether we think of a struggling student taking German 1, a 12th grader reading *King Lear*, a 6th grade student pondering the curve implied in a data set, or a scholar poring over the Dead Sea Scrolls, the challenge is the same: understanding words rooted in an author's intent but a puzzle to the reader, or understanding facts that tell no self-evident or single story. Similarly, in fields like history and archaeology, we must reconstruct the meaning of events and artifacts from clues provided by the historical record. With this type of understanding, teachers ask learners to interpret, translate, make sense of, show the significance of, decode, and make a story meaningful.

### The Challenge: Bringing Text to Life

In classrooms, this facet—interpretation—manifests itself in every discussion of books and experiences. The challenge in teaching is to bring the text to life by revealing, through study and discussion, that the text speaks to our concerns. For example, we all struggle in our relationships with our parents, and Shakespeare offers us great insights if we can only decode the language in *King Lear*. Students move between the text and their own experience to find legitimate but varying interpretations and further insights.

All understandings of a text, person, or event are not equal in depth and breadth of insight. Some readings, histories, or psychological cases are stronger than others by virtue of their coherence, thoroughness, and documentation. But all interpretations are bound by the personal, social, cultural, and historical contexts in which they arise.

This truth holds in mathematics, as Henri Poincaré (1913/1982), famous turn-of-the-century French mathematician, reminds us:

What is it to understand? Has this word the same meaning for all the world? To understand the demonstration of a theorem, is that to examine successively each of the syllogisms composing it and to ascertain its correctness, its conformity to the rules of the game? . . . For some, yes; when they have done this, they will say they understand.

For the majority, no. Almost all are more exacting; they wish to know not merely why the syllogisms . . . are correct, but why they link together in this order rather than another. In so far as to them they seem engendered by caprice and not by an intelligence always conscious of the end to be attained, they do not believe they understand (p. 431).

The act of interpretation is clearly more fraught with ambiguity than the act of theory building and testing. A text or a speaker's words will always have different valid readings; as Bruner (1996) puts it: "Narratives and their interpretations traffic in meanings, and meanings are intransigently multiple" (p. 90). Indeed, modern literary criticism has been enlivened by the view that not even the author's view is privileged, that regardless of author intent, texts can have unintended meanings and significance.

Explanation and interpretation are thus related but different. A jury trying to understand a case of child abuse seeks

significance and intent, not generalizations from theoretical science. The theorist builds objective and general knowledge about the phenomenon called abuse, but the novelist or journalist may offer as much or more insight into the "why?" We may know the relevant facts and theoretical principles, but we can and must still always ask, What does it all mean? What is its importance—to me, to us?

### Overlap of Theory and Story

Clearly, though, a theory and a story have some overlap. As Bruner points out, a scientific notion persists or is overthrown by virtue of the meaning it provides—even when supportive facts are missing or data are anomalous. And just as our view of the characters in a novel shifts with each episode so, too, does the scientist's view of the meaning of phenomena, as Thomas Kuhn's (1970) history of scientific revolution reveals.

Sulloway (1996), citing Kuhn, underscores the point that the revolutionary aspect of Darwin's work was not in the facts but in its picture of evolution as arising out of no larger purpose—an idea without meaning to Victorian thinkers—in a way that scientists today take for granted. The theory itself was not complex, but its acceptance was slow and hard-won because of the habits of thought it threatened.

And yet, there are vital differences between theories on the one hand and stories, explanations, and interpretations on the other, especially relating to their truth value and the different criteria by which we judge them. A theory needs to be true to work; a story need only illuminate, engage, and have verisimilitude. The existence of three different theories for the same physical phenomenon is intellectually unacceptable, but the existence of many different plausible and illuminating interpretations of the same stories and human events is acceptable. Indeed, the view that human intentions provide key meaning to human events is a "theory" at the heart of all narrative and history, but it is a view contradicted by a good deal of modern psychological and biological theory.

The differences in theories and stories were well summarized by Jerome Bruner in his most recent book, *The Culture of Education* (1996), in discussing a narrative view of understanding: "Understanding is the outcome of organizing and contextualizing essentially contestable, incompletely verifiable propositions in a disciplined way" (p. 90).<sup>1</sup> This view raises the stakes considerably in teaching and especially in assessment. Bruner goes on to say, "Since no one narrative rules out all alternatives, narratives pose a very special issue of criteria. By what standards can narratives or competing interpretations be adjudged as 'right' or 'acceptable'?" (p. 90). He thinks we especially need to avoid two errors that educators sometimes succumb to in testing: We must not try to test and find a single "preemptive story" or to "push a partisan point of view" (p. 90).

This narrative building (as well as the theory building of Facet 1) is the true meaning of constructivism. When we say that students must make their own meaning, we mean that it is counterproductive to hand students prepackaged "significance" or "interpretations" without letting them work through the problem to where they see these explanations and interpretations as valid. This practice promotes sham understanding.

A purely didactic teaching of *the* interpretation is likely to lead to misunderstanding and forgotten knowledge and will mislead students about the arguable nature of interpretation. This didacticism has clear implications for our teaching if we over-rely on textbooks that tend to offer *the* version of history or science (a point to which we devote greater detail in Chapter 5).

### Developing Interpretations

The inherently problematic nature of certain ideas, texts, and experiences mandates an education that requires students, not just teachers and textbook writers, to develop interpretations and stories, as well as ensures that student ideas receive the feedback necessary to force continual testing and revision of those accounts.

The implications for instruction parallel those for the previous facet of understanding. Learning cannot be primarily or exclusively the process of learning what someone else says is the meaning of something, except as a way to model meaning making or overcome basic decoding inability, or as a prelude to testing the interpretation so as to better understand the possibilities.

To educate students for autonomous intellectual performance as adults, we must teach them to build stories and interpretations, not just passively take in official ones. They need to see how knowledge is built "from the inside." Examples are inviting students to fashion an oral history out of disparate interviews, a mathematical conclusion out of discrete data, or a story interpretation based on a careful reading. In short, students must have firsthand knowledge of the history of knowledge creation and refinement if they later are to create and refine knowledge.

To understand is to be able to use knowledge. This is an old idea in U.S. education—indeed, an old idea in the long tradition of our U.S. pragmatism and cultural disdain for ivory-tower, academic thinking. We say to young and old alike, "You need to walk the walk, not just talk the talk."

Bloom (1956) and his colleagues saw *application* as central to understanding and quite different from the kind of plugging-in and fill-in-the-blanks pseudoapplication found in so many classrooms:

Teachers frequently say: "If a student really comprehends something, he can apply it. . . ." Application is different in two ways from knowledge and simple comprehension: The student is not prompted to give specific knowledge, nor is the problem old-hat (p. 120).

### Facet 3: Application

Application: ability to use knowledge effectively in new situations and diverse contexts.

[By understanding] I mean simply a sufficient grasp of concepts, principles, or skills so that one can bring them to bear on new problems and situations, deciding in which ways one's present competencies can suffice and in which ways one may require new skills or knowledge

—Gardner, 1991, p. 18

How and where can we use this knowledge, skill, or process? How should my thinking and action be modified to meet the demands of this particular situation?

- &check; A young couple uses their knowledge of economics (e.g., the power of compounded interest and the high cost of credit cards) to develop an effective financial plan for saving and investing.
- &check; 7th grade students use their knowledge of statistics to accurately project next year's costs and needs for the student-run candy and supply store.
- × A physics professor cannot diagnose and fix a broken lamp.

### Matching an Idea to a Context

Understanding involves matching one's idea or action to context. Also, it involves tact in the sense William James (1899/1958) referred to the tact needed for teaching, namely "knowledge of the concrete situation" (as opposed to theoretical—Facet 1—knowledge of child psychology).

The implications for teaching and assessment are straightforward and at the heart of the performance-based reforms the authors have been a part of for the last decade. We show our understanding of something by using it, adapting it, and customizing it. When we must negotiate different constraints, social contexts, purposes, and audiences, understanding is revealed as performance know-how, the ability to accomplish tasks successfully, with grace under pressure, and with tact.

Application of understanding is thus a context-dependent skill, requiring the use of new problems and diverse situations in assessment, as Bloom (1956) and his colleagues long ago argued:

If the situations . . . are to involve application as we are defining it here, then they must either be situations new to the student or situations containing new elements as compared to the situation in which the abstraction was learned. . . . Ideally we are seeking a problem which will test the extent to which an individual has learned to apply the abstraction in a practical way (p. 125).

Similarly, in describing synthesis, the authors of the taxonomy research argue that the student must apply knowledge by developing a complete unique product or performance, noting, "It is obvious that the student must have considerable freedom in defining the task for himself/herself, or in redefining the problem or task."

### Real-World Problems

The problems that we develop for students should be as close as possible to the situation in which a scholar, artist, engineer, or other professional attacks such problems. The time allowed and conditions of work, for example, should be as far away as possible from the typical controlled exam situation. Bloom, Madaus, and Hastings (1981) take this view:

The adequacy of the final product may be judged in terms of:

- a. the effect it has on the reader, observer, or audience,
- b. the adequacy with which it has accomplished the task, and/or
- c. evidence on the adequacy of the process by which it was developed (p. 268).

Or, as Gardner (1991) recently argued:

The test of understanding involves neither repetition of information learned nor performance of practices mastered. Rather it involves the appropriate application of concepts and principles to questions or problems that are newly posed. . . . Whereas short-answer tests and oral responses in classes can provide clues to student understanding, it is generally necessary to look more deeply. . . . For these purposes, new and unfamiliar problems, followed by open-ended clinical interviews or careful observations, provide the best way of establishing the degree of understanding . . . attained (pp. 117, 145).

Swiss child psychologist Jean Piaget (1973/1977) argued more radically that student understanding reveals itself by student innovation in application. He said that many so-called application problems, especially in mathematics, were not truly novel and hence not indicative of understanding:

Real comprehension of a notion or a theory [which] implies the reinvention of this theory by the student. Once the child is capable of repeating certain notions and using some applications of these in learning situations he often gives the impression of understanding; however, this does not fulfill the condition of reinvention. True understanding manifests itself by new spontaneous applications (pp. 726–732).

Thus, the instructional and assessment implications of Facet 3 call for an emphasis on performance-based learning: work that focuses on and culminates in more authentic tasks, supplemented by more conventional tests (see Wiggins, 1998; McTighe, 1996–1997).

## Facet 4: Perspective

Perspective: critical and insightful points of view.

The profit of education is the ability it gives to make distinctions that penetrate below the surface . . . . One knows that there is a difference between sound and sense, between what is emphatic and what is distinctive, between what is conspicuous and what is important

—Dewey, in Johnson, 1949, p. 104

An important symptom of an emerging understanding is the capacity to represent a problem in a number of different ways and to approach its solution from varied vantage points; a single, rigid representation is unlikely to suffice

—Gardner, 1991, p. 13

From whose point of view? From which vantage point? What is assumed or tacit that needs to be made explicit and considered? What is justified or warranted? Is there adequate evidence? Is it reasonable? What are the strengths and weaknesses of the idea? Is it plausible? What are its limits? So what?

- &check; A 10-year-old girl recognizes in TV advertising the fallacy of using popular figures to promote products.
- &check; A student explains the Israeli and Palestinian arguments for and against new settlements on the Gaza Strip.
- × A bright but rigid student refuses to consider that there is another way to look at gun control.

To understand in this sense is to see things from a dispassionate and disinterested perspective. This type of understanding is not about any student's particular point of view but about the mature recognition that *any* answer to a complex question typically involves a point of view; hence, an answer is often one of many possible plausible accounts. A student with perspective is alert to what is taken for granted, assumed, overlooked, or glossed over in an inquiry or theory.

Perspective involves making tacit assumptions and implications explicit. It is often revealed through an ability to ask, What of it? and to see an answer—even a teacher's or textbook's answer—as a point of view. This type of perspective is a powerful form of insight, because by shifting perspective and casting familiar ideas in a new light, one can create new theories, stories, and applications.

## The Advantage of Perspective

In the critical-thinking sense of the term, students with perspective expose questionable and unexamined assumptions, conclusions, and implications. When a student has or can gain perspective, she can gain a critical distance from the habitual or knee-jerk beliefs, feelings, theories, and appeals that characterize less careful and circumspect thinkers.

Perspective involves the *discipline* of asking, How does it look from another point of view? How, for example, would my critics see things? In his autobiography, Darwin (1958) noted that this critical stance was key to his success in defending his controversial theory:

I . . . followed a golden rule that whenever a published fact, a new observation or thought came across me, which was opposed to my general results, to make a memorandum of it without fail and at once; for I had found by experience that such facts and thoughts were far more apt to escape from memory than favorable ones. Owing to this habit, very few objections were raised against my views that I had not at least noticed and attempted to answer (p. 123).

Thus, perspective as an aspect of understanding is a mature achievement, an earned understanding of how ideas look from different vantage points. Novice learners, those just setting out on the road to mastery, may have a revealing point of view, even when they lack a thorough explanation of things. Consider the child who speaks out in *The Emperor's New Clothes*. But novices, by definition, lack the ability to take *multiple* perspectives, as Gardner pointed out earlier.

### Clear Performance Goals

To develop fluency and flexibility in perspective taking—if understanding is to blossom—a student needs to have a clear performance goal and to keep that goal in constant view as different points of view emerge. The case method in law and the problem-based learning method in medicine exemplify this point.

Therefore, students learn they are not "done" with a project or lesson simply because they worked hard, followed directions, and turned in a piece of work from a single point of view—their own. Instruction and performance standards must require students to see things from the perspective of the ultimate standards, the various players, and the primary audience—not their own intentions—as they doggedly try to solve a particular problem.

A more subtle and sophisticated perspective involves grasping the points of view behind teacher and textbook pronouncements. What is the point of view of the authors of the U.S. history and physics textbooks concerning what is true, verified, and important? Do other authors share those views? Do different experts, teachers, and authors establish different priorities? If so, with what justification and advantages or disadvantages? That this line of questioning seems too esoteric shows how far we are from giving students needed perspective.

Everyone recognizes the problem of achieving perspective in newspaper reporting, so why isn't it addressed in textbook writing? Everyone knows that authors' views shape choice of content, emphasis, and style, so why aren't educators helping students to use these language arts skills in understanding textbooks and theories in them? What questions and assumptions informed the text's authors? What were Euclid, Newton, Jefferson, Lavoisier, and Darwin trying to accomplish? Based on what assumptions? Students cannot be said to have perspective, hence understanding, of the *Elements* of Euclid, Newton's *Principia*, the *Declaration of Independence*, or Darwin's *Origin of Species* unless they have some insight into point of view.

Thus, an essential perspective on perspective involves encouraging not only students but also their coursework to ask and answer, What of it? What is assumed? What follows? These questions need to be asked for all core knowledge and texts in the students' experience. Our instructional and assessment strategies need to better highlight the means and ends of a liberal education, namely, greater control over essential questions and ideas so the student can see both intrinsic and extrinsic value in intellectual life.

The *Oxford English Dictionary* offers one definition of the verb *understand* as "to know the import" of something. By this criterion, our educational system is not very successful in causing understanding. Few students leave school with an understanding of the value of their schoolwork—and of the value of the discipline required to learn the disciplines. Few can successfully ask and answer, What of it? Such a critical stance toward knowledge underlies what we mean by a liberal education. Thus, it is a sad commentary when we reduce liberal education to a few courses in the humanities, organized around some old texts—as if the content, not the critical point of view, defined a liberal education. But why should we be surprised? Few courses are taught and assessed from the vantage point of a guiding question—one that implies multiple points of view and intellectual criteria focusing on justification as opposed to mere correctness.

Facet 4 promotes the idea that instruction should include explicit opportunities for students to confront alternative theories and diverse points of view regarding the big ideas. In an earlier era, Joseph Schwab (1978) at the college level came closest to envisioning an education for perspective. He developed what he called the art of "eclectic": the deliberate design of coursework that compelled students to see the same important ideas (e.g., free will versus determinism, the development of personality) from very different theoretical perspectives.

### Facet 5: Empathy

Empathy: the ability to get inside another person's feelings and worldview.

To understand is to forgive.

—French proverb

"Do women ever come up to you and say 'How did you know that? How did you feel that?'" I ask, and for the first time, he turns and looks at me evenly: "Yeah, that's the normal response," he says in a voice that suddenly isn't so shy. "It's not that I understand women any better than anyone else, but I do understand feelings. . . . All you have to do is imagine what that girl is going through, just turn it around and put yourself in those same shoes. . . . We're all the same people."



—The singer Babyface *New York Times Sunday Magazine*, 1997, Sec. 6, p. 22

How does it seem to you? What do they see that I don't? What do I need to experience if I am to understand? What was the artist or performer feeling, seeing, and trying to make me feel and see?

- &check; An Israeli adolescent empathizes with the restrictive, constrained lifestyle of his Palestinian contemporaries.
- &check; From a recent British national exam: "*Romeo and Juliet*, act 4. Imagine you are Juliet. Write your thoughts and feelings explaining why you have to take this desperate action."
- × An accomplished basketball player-turned-coach berates his young players often because he cannot relate to their struggles to learn the game.

Empathy, the ability to walk in another's shoes, to escape one's own emotional reactions to grasp another's, is central to the most common colloquial use of the term *understanding*. When we try to understand another person, people, or culture we strive for empathy. It is not simply an affective response or sympathy.

Empathy is a *learned* ability to grasp the world from someone else's point of view. It is the discipline of using one's imagination to see and feel as others see and feel. It is different from seeing in perspective, which is to see from a critical distance, to detach ourselves to see more objectively. With empathy, we see from inside the person's worldview; we embrace the insights that can be found in the subjective or aesthetic realm.

A German scholar, Theodor Lipps, coined the term *empathy* at the turn of the 20th century to describe what the audience must do to understand a work or performance of art. Empathy is the deliberate act of finding what is plausible, sensible, or meaningful in the ideas and actions of others, even if they are puzzling or off-putting. Empathy can lead us not only to rethink a situation but to have a change of heart as we come to understand what formerly seemed odd or alien.

This kind of understanding implies an existential or experiential prerequisite. If someone were to refer to experiences like poverty, abuse, racism, or high-profile competitive sports and say, "You cannot possibly understand without having been there," the implication would be that insight from experience is necessary for understanding.

A recent controversy involving the songwriter Paul Simon echoed the same theme (*USA Today*, 1997). Some Puerto Ricans contended a Jew cannot possibly understand the experience of Puerto Ricans. The subject was a new musical, *Capeman*, cowritten and produced by Simon and Reuben Blades. Though we might disagree with that particular sentiment, as teachers, we regularly acknowledge that students need to directly or indirectly experience the ideas they study.

## A Form of Insight

Empathy is a form of insight because it involves the ability to get beyond odd, alien, seemingly weird opinions or people to find what is meaningful in them. Students have to *learn* how to open-mindedly embrace ideas, experiences, and texts that might seem strange, off-putting, or just difficult to access if they are to understand them and their connection to what is more familiar. They need to see how weird or dumb ideas can seem insightful or sophisticated once we overcome habitual responses, and they need to see how habit can block our understanding of another person's understanding.

All great interpreters and historians of ideas need empathy. "If we laugh with derision" at the theories of our predecessors, as anthropologist Stephen Jay Gould (1980) says, we will fail "in our understanding of their world" (p. 149).

From his own experience in reading Aristotle, Kuhn (cited in Bernstein, 1983) suggests:

When reading the works of an important thinker, look first for the apparent absurdities in the text and ask yourself how a sensible person could have written them. When you find an answer, when those passages make sense, then you may find that more central passages, ones you previously thought you understood, have changed their meaning.

A simple example of the need for empathy can be found in our own system of government. Few students know that U.S. senators were appointed, not popularly elected, for more than 100 years. Fewer still understand why such a practice seemed like a good idea then. It is easy to imagine that our forefathers were misguided or hypocrites. We can think of assignments and assessments that ask students to role-play the writers of the Constitution. The challenge would be to make a case to a group of citizens that appointed offices are in the citizens' best interest. As a postscript, we could ask students to write an essay or journal entry on the pros and cons of our current popular vote system and to consider the value, if any, of the electoral college.

## A Change of Heart

As we noted in our earlier discussion of language, understanding in the interpersonal sense suggests not merely an intellectual change of mind but a significant change of heart. Empathy requires respect for people different from ourselves. Our respect for them causes us to be open-minded, to carefully consider their views when they are different from ours.

It becomes easier, then, to imagine schoolwork that deliberately confronts students with strange or alien texts, experiences, and ideas to see if they can get beyond what is off-putting about the work. This is, in fact, a common activity in foreign language classes that stress cultural issues. The Bradley Commission on the Teaching of History argued that a primary aim of history is to help students escape their ethnocentric and present-centered views (Gagnon, 1989).

## More Experiences in Learning

To ensure greater understanding of abstract ideas, students must have far more direct or simulated experiences of them than most current textbook-driven courses now allow. We refer in this book to the idea of an intellectual Outward Bound to ensure the needed changes: Learning needs to be more experiential, more geared toward making students directly confront the effects—and *affect*—of decisions, ideas, theories, and problems. The absence of experience in learning may explain why so many important ideas are misunderstood and learnings so fragile, as the misconception literature reveals. Assessment also must pay greater attention to whether students have overcome egocentrism, ethnocentrism, and present-centeredness in their answers and explanations.

## Facet 6: Self-Knowledge

Self-knowledge: the wisdom to know one's ignorance and how one's patterns of thought and action inform as well as prejudice understanding.

All understanding is ultimately self-understanding. . . . A person who understands, understands himself. . . . Understanding begins when something addresses us. This requires . . . the fundamental suspension of our own prejudices.

—Gadamer, 1994, p. 266

It is the duty of the human understanding to understand that there are things which it cannot understand, and what those things are.

—Kierkegaard, 1959

How does who I am shape my views? What are the limits of my understanding? What are my blind spots? What am I prone to misunderstand because of prejudice, habit, or style?

- &check; A mother realizes that her frustration with her daughter's shyness is rooted in issues from her own childhood.
- &check; Mindful of the fact that many students are visual learners, a middle school teacher deliberately includes visual organizers and images.
- × "When all you have is a hammer, every problem looks like a nail."

Deep understanding is ultimately related to what we mean by wisdom. To understand the world we must first understand ourselves. Through self-knowledge we also understand what we do *not* understand; "know thyself" is the maxim of those who would *really* understand, as the Greek philosophers often said. In a sense, Socrates is the patron saint of understanding. He knew he was ignorant, whereas most men did not realize they were.

In daily life, our capacity to accurately self-assess and self-regulate reflects understanding. Metacognition refers to self-knowledge about how we think and why, and the relation between our preferred methods of learning and our understanding (or lack of it). The immature mind is thus not merely ignorant or unskilled but unreflective. A naive student, no matter how bright and learned, is lacking in self-knowledge to know when an idea is "out there" or a projection; to know when an idea seems objectively true but really only fits the student's beliefs; or to know how templates or frames for perception shape how and what the student understands.

## Intellectual Rationalization

Our intellectual blind spots predispose us toward *intellectual rationalization*: the ability to unendingly assimilate experience to beliefs, and categories that seem not merely plausible ideas but objective truths. Too easily, we keep verifying our favored and unexamined models, theories, analogies, and viewpoints.

For example, thinking in either-or terms is a common example of such a natural habit, one that we see rampant in education reform and one that Dewey viewed as the curse of immature thought. Students often think in dichotomies without seeing those categories as narrow projections. She's cool. He's a jerk. They're in the jock crowd, not the nerd crowd. That teacher likes me and hates you. Math isn't for girls. Football is for animals. This is a fact; that's wrong.

Salinger (1951) made brilliant use of this propensity in *The Catcher in the Rye*. Holden is prone to viewing other adolescent boys and adults as "phonies," and his prejudice conceals more than it reveals. We learn a good deal about Holden's alienation, in fact, when by his own admission his categorization of people as either phony or not breaks down when he considers such interesting and competent adults as the Lunts, the blues piano player, and his teacher. Maturity is evident when we look beyond simplistic categories to see shades of perhaps unexpected differences, idiosyncrasies, or surprises in people and ideas.

We educators, too, are often unthinkingly reliant on and satisfied by neat categories and striking metaphors, seeing their limits and subjectivity only long after the fact. Is the brain really like a computer? Are children really like natural objects or phenomena to be treated as equal, so that a standardized test can be modeled on the procedures of scientific experiments? To talk of education as "delivery of instructional services" (an economic metaphor and a more modern variant of the older factory model) or as entailing "behavioral objectives" (language rooted in Skinnerian animal training) is to use metaphors, and not necessarily helpful ones.

### A Paradox

The paradox is that our language and grammar are the stuff of all new explanation, but they can impede progress as much as promote it, as Wittgenstein (1953) argued in describing philosophy as conceptual and linguistic analysis:

The fundamental fact is that we lay down rules, . . . and then when we follow the rules, things do not turn out as we assumed. That we are therefore, as it were, entangled in our own rules. This entanglement in our rules is what we want to understand (Aphorism 125).

More than 300 years ago, Francis Bacon (1620/1960) provided a thorough account of the misunderstandings introduced by our own habits of thought and the cultural context in which we find ourselves:

The human understanding is of its own nature prone to suppose the existence of more order and regularity in the world than it finds . . . [and] when it has once adopted an opinion draws all things else to support and agree with it. . . . It is the peculiar and perpetual error of the intellect to be more moved and excited by affirmatives than by negatives. . . . Numberless, in short, are the ways, and sometimes imperceptible, in which the affections color and infect the understanding (Book I, Nos. 45–49).

Yet seeing prejudice as always wrong or harmful is also prejudice. Gadamer and Heidegger, for example, see human prejudice as inseparable from human understanding. And Woolf (1929) noted that a self-conscious explanation of our prejudices may be the best knowledge we can offer:

Perhaps if I lay bare the ideas, the prejudices that lie behind this statement ["A woman must have money and a room of her own to write fiction"], you will find that they have some bearing upon women and fiction. At any rate, when a subject is highly controversial—and any question about sex is that—one cannot hope to tell the truth. One can only show how one came to hold whatever opinion one does hold. One can only give one's audience the chance of drawing their own conclusions as they observe the limitations, the prejudices, the idiosyncrasies of the speaker. Fiction here is likely to contain more truth than fact (p. 4).

In talking about open-mindedly interpreting texts, Gadamer (1994) says that the right stance

Supposes only that we self-consciously designate our opinions and prejudices and qualify them as such. . . . In keeping to this attitude, we grant the text the opportunity to appear as an authentically different being and to manifest its own truth, over and against our preconceived notions (pp. 238–239).

### What Self-Knowledge Demands

Self-knowledge is a key facet of understanding because it demands that we self-consciously question our understandings to advance them. It asks us to have the discipline to seek and find the *inevitable* blind spots or oversights in our thinking and to have the courage to face the uncertainty and inconsistencies lurking underneath effective habits, naive confidence, strong beliefs, and worldviews that only seem complete and final. When we talk of subject-matter "disciplines," such courage and persistence is the essential source of rational understanding as opposed to dogmatic belief.

Practically speaking, a greater attention to self-knowledge means that we must do a better job of teaching and assessing self-reflection in the broadest sense. In one sense, we do that quite well: Many programs and strategies help students develop greater metacognition and awareness of their own learning style. But the ideas we express here suggest that greater attention is needed to self-assess performance and the philosophical abilities that fall under the

heading "epistemology"—the branch of philosophy that addresses what it means to know and understand knowledge and understanding, and how knowledge differs from belief and opinion—what we are striving for in this book.

If understanding is composed of the six facets, what do they look like in practice? How can we more accurately distinguish between those students with and without understanding? If understanding can be described as naive and sophisticated, how can we use rubrics to assess it? What problems in assessment are peculiar to understanding, and how can we become better at assessing for it? To those questions we now turn.

### Misconception Alert

We have noted that any robust teaching of understanding must grapple with the phenomenon of misunderstanding. And throughout this book, we alert readers to potential misunderstandings. Now we direct that concern to the facets themselves. The following list is not intended to be exhaustive, merely suggestive and cautionary.

#### Facet 1: Explanation

*Misconception 1:* If the student gives a correct answer to a complex and demanding question, he must have an in-depth understanding.

*Misconception 2:* If the student cannot write an explanation of her views, she lacks understanding.

Both these misconceptions involve the plausible but incorrect view that a student who can provide an accurate answer and explanation on a test understands the answer. But we have all seen students who could correctly give back what they learned without understanding why the answer or explanation is correct. This concern is one reason that at the doctoral level a dissertation and its defense are required. Right answers, with documentation, could be merely borrowed and not understood.

The second misconception is the reverse view, a common problem in assessment: A performance test can be an invalid way to assess knowledge when the performance ability (or lack of it, in this case) determines the quality of the answer. For example, a student may write a beautiful and flowing essay but have little of substance or novelty to say; another student is a poor writer but filled with insights. Often in such assessments, the writing quality counts for more than the understanding being assessed—improperly, if our aim is to assess understanding as opposed to writing ability.

#### Facet 2: Interpretation

*Misconception:* If the student offers an engaged and rich response to literature, he understands that work of literature.

This is a common misconception in language arts. Reader response becomes equated or confused with understanding the text. For example, a student might have a thoughtful, engaged, and fluent response to a text, but the teacher's assessment of that response might erroneously suggest that he also has provided a substantiated and subtle interpretation of the text. But some highly responsive and engaged readers get the meaning all wrong, whereas some seemingly detached or bored readers can penetrate to the core of a book's most important ideas and meanings without being engaged by them.

#### Facet 3: Application

*Misconception 1:* Any effective performance with knowledge indicates understanding of that knowledge.

*Misconception 2:* Any ineffective performance with knowledge indicates a lack of understanding of that knowledge.

In activity-based teaching and performance-based assessment, we all too easily can assume that if the student performs well then he understands; that if she has learned the skills of persuasive writing or soccer then she must understand them. But the two are not synonymous. We can make this assessment clearer by asking such questions as, Does the student understand persuasion? Does the student understand the purpose of the game and act on an explicit strategy? In other words, is there a deliberate purposefulness and

reflectiveness to performance?

In fact, persuasion and the point of the game can and must be taught, learned, and assessed using additional performances from the targeted skills. We will likely need to hear or read Facet 1 answers, namely, explanations of what the student did and why.

The reverse is true. Students who do poorly on a specific performance task do not necessarily misunderstand the topic. As with explanation, they may be unskilled at the performance but understand it. Consider, for example, sports commentators who cannot play a sport but reveal through analysis their deep understanding of the game. Here, too, we must be wary of making invalid inferences on the basis of performance results. To put the matter more precisely, we need to make sure that we have built in the most appropriate and varied performances of understanding.

*Misconception 3:* Application means that the student can correctly answer teacher-assigned problems based on what was taught.

This is a long-standing misconception abetted by textbook end-of-chapter problems and standardized tests. As we noted in Chapter 3, Bloom's (1956) taxonomy does not support such a view. Authentic application involves novel problems, realistically messy situations, and required adaptations and adjustments to theoretical knowledge and skill. Algorithmic or mechanical application is rarely adequate in authentic contexts that require judgment, heuristics, problem solving, and adjustment based on feedback.

#### **Facet 4: Perspective**

*Misconception 1:* Having an opinion equals having perspective.

*Misconception 2:* Perspective implies relativism.

Both views represent an ancient misunderstanding, one that many thinkers have tried to expose and eradicate. Just because we find a view plausible or well argued does not mean that it is correct. Just because we can find criticisms in all complex theories and arguments does not mean that all theories are equal. On the contrary, criticism is the only way to get beyond relativism. Such perspective is, of course, threatening to those who prosper and retain authority based on an orthodoxy.

#### **Facet 5: Empathy**

*Misconception 1:* Empathy is affect, synonymous with sympathy or heartfelt rapport.

*Misconception 2:* Empathy requires agreement with the point of view in question.

Empathy is not sympathy. It is a disciplined effort to understand what is different, not a question of feeling what other people feel. Similarly, just because we work to understand what is different doesn't mean we agree with it. Rather, we come to understand it as plausible or meaningful.

#### **Facet 6: Self-Knowledge**

*Misconception:* Self-knowledge equals self-centeredness.

Self-knowledge is the opposite of self-centeredness. When we know ourselves, we know our limits and are far less likely to confuse our views with those of others or our knowledge with our prejudices.

## **Endnote**

<sup>1</sup> Bruner contrasts human science "interpretations" with scientific "explanations." The latter are "preemptive," according to Bruner. Two explanations or theories of phenomena cannot both be correct. In history, sociology, or textual analysis, multiple accounts can be valid.

Copyright © 1998 by the Association for Supervision and Curriculum Development. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission from ASCD.

---

**Association for Supervision and Curriculum Development (ASCD)**

1703 N. Beauregard Street, Alexandria, VA 22311 USA • 1-800-933-2723 • 1-703-578-9600

[Copyright © ASCD, All Rights Reserved](#) • [Privacy Statement](#)