

1

How Writing Increases Understanding

We remember Ernest Hemingway for his rugged fiction. But in 1932 he published a nonfiction book titled *Death in the Afternoon*, an analysis of Spanish bullfighting that examines fear and courage. In describing the ceremony and traditions of bullfighting, Hemingway also famously said of writing: “Prose is architecture, not interior decoration” (Hemingway, 1932, p. 191). Readers of Hemingway will recognize this philosophy realized in the terse, controlled prose of his familiar novels, such as *The Sun Also Rises* and *A Farewell to Arms*.

In this book, *Writing for Understanding*, the central theme echoes Hemingway’s dictum: prose is the architecture of understanding. Each time students write, they are building, literally, brick by brick, word by word, increased understanding of subject matter. This does not mean, however, that each piece of student writing will or must be a polished gem. Most pieces, in fact, will simply be rough bricks. The strategies in this book are not specifically intended to help teachers turn students into accomplished writers, though practice in writing invariably is time well spent. Rather, the strategies are designed to help teachers incorporate meaningful student writing assignments into daily instruction to increase students’ understanding of content.

Prose

Written or spoken language in ordinary form—that is, without metrical structure. Poetry, which usually has a metrical structure, often is viewed as the counterpoint to prose.

Does this mean that writing conventions—correct spelling, grammar, punctuation—should be ignored? Of course not. It is simply a matter of focus, and the focus for teachers who are not writing teachers per se is content: mathematics, science, history, civics, art, drama, music, physical education, health, and so on. For example, mathematics teachers can increase students' understanding of content by using writing assignments to elicit explanations of how students have solved various problems. At the same time, most students *will* improve their writing skills simply through practice and peer interaction about writing, without direct instruction in writing conventions. (For the sake of convenience, however, readers will find that Chapter 9 addresses a number of the most frequently asked questions about writing conventions.)

Think of this first chapter as a course, Architecture of Writing 101. My purpose is to explore how writing increases students' understanding of content—regardless of subject matter or students' abilities—and to dispel common myths and misconceptions that get in the way of using writing as an effective instructional tool.

DEBUNKING MYTHS AND MISCONCEPTIONS

Many teachers, unless they are directly responsible for teaching writing, shy away from having students write substantive text. There seems to be a general fear—even among some language arts teachers—that asking students to write more than a few words will inevitably lead to more work for both students and teachers with minimal gain in learning. Many teachers believe that assigning writing is a “Catch-22” situation. Parents, teacher supervisors, and students will *expect* every writing assignment to be corrected, which teachers don't have time to do, nor do many teachers feel competent or comfortable doing so. This leads teachers to question whether having students write really improves students' writing *or* learning.

It's best to dispense with a few myths and misconceptions related to these concerns at the start. Let's begin with the first concern.

Myth 1: All writing must be corrected.

This is a common misconception that should be dispelled on the first day of class. Writing for understanding means that students will write many types of prose for a variety of purposes. Virtually none of this writing will need to be read by the teacher with an eye to correcting grammar and punctuation, which is what most parents, teacher supervisors, and students mean when they talk about *correcting*—in other words, marking or red-penciling—students' written work. In some cases, such as writing to reflect on new information, students' writing will not be intended for

the teacher to read at all. In self-reflective writing, such as journaling, the student writer is his or her own intended reader. In other instances, students may share their writing with peers, with or without teacher intervention.

When introducing writing for understanding as an instructional strategy, it will be helpful to explain this approach in advance: to the teacher supervisor to gain support; to students so that they understand how writing will be used in their studies; and to parents, by a newsletter sent home or during an early open house, so that they understand your approach as well.

Myth 2: All writing must be graded.

This misconception pairs with the preceding one. It may be helpful to incorporate a check-off system to encourage students to keep up with writing tasks, but assigning a grade to most of the writing assignments described in this book is unnecessary and can be counterproductive. Grades are value markers. Students may get mistaken impressions of the value of some tasks over others. This assignment is graded; therefore, it is important. This assignment is not graded; therefore, it's not important. In fact, non-graded writing assignments may be more valuable in increasing content understandings than fully developed or graded writing.

Writing done to increase understanding of content is important not in the particulars—this answer or that journal entry—but in the aggregate. In other words, the process of thinking and composing is more important as an instructional strategy than the product, the written text. As with the correcting of students' writing, it will be beneficial to explain in advance to students and others how written work will be graded and, more important, why much of students' writing will not be graded.

Myth 3: Students' writing won't improve without teacher feedback.

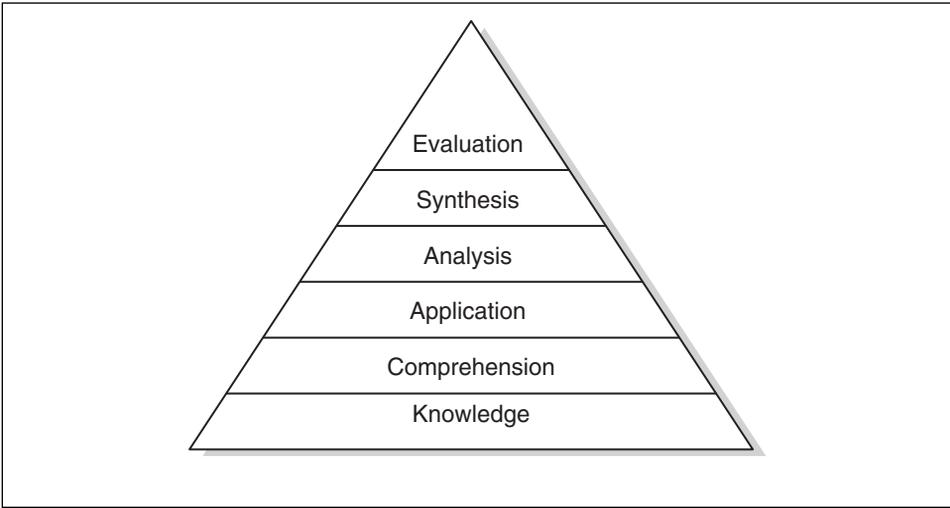
Certainly some writing problems will not get corrected without direct instruction. However, in many cases, students *do* correct their own writing as they develop self-awareness as writers. They read other students' prose. They comment on one another's writing. With time and practice, most students improve their ability to express ideas cogently in writing.

Writing is like any skill. Whether a student is learning to serve a tennis ball, to solve a complex equation, or to draw a convincing looking apple, practice improves performance. The same is true for writing. Feedback from teachers and peers helps, of course. But real improvement in writing comes, as it does in all skill development, when the student takes charge of learning by building self-awareness that leads to self-correction and increased understanding.

Myth 4: Written responses to questions are no more effective than short answers (true-false, multiple choice, fill in the blank) for increasing student learning.

On the contrary, prose responses require more complete, usually more complex thinking than short answers. True-false, multiple-choice, and other types of short-answer questions rarely can be structured to require or encourage higher level thinking. To take a cue from Bloom’s familiar taxonomy of cognition (Bloom & Krathwohl, 1956), most short-answer questions ask students to think at the lowest levels: demonstrating knowledge or comprehension (remembering or understanding) by repeating or reproducing information. In contrast, well-constructed questions that require prose responses can push students toward higher level thinking: applying, analyzing, synthesizing, and evaluating information. Bloom’s taxonomy is illustrated in Figure 1.1.

Figure 1.1 Bloom’s Taxonomy



Following is a typical true-false question:

Seventy-five percent is the same as three-fourths. True or false?

The student must recall this specific fact or be able to make the mathematical conversion in order to choose *true* as the correct response. At most, this item requires simple application. But it is also possible that the student just remembered this particular equivalence without being able to make

the computation. There is no way for the teacher to judge the depth of a student's learning from this type of question. It would take several questions of the same character to do that.

On the other hand, a prose-response item might be stated as follows:

Explain how to convert three-fourths to a percentage.

In this case, students must first recall the pertinent information, then apply it, and finally describe the process. Writing the explanation requires remembering, understanding, applying, and analyzing—in other words, the same cognitive starting points as the true-false question *plus* higher level thinking in terms of analysis and description. From the students' responses to this type of question, the teacher can readily discern how well students understand the concept and decide whether to reteach or move on to other content.

Myth 5: Getting students to write will take more time than it's worth.

When teachers commit to making writing an integral part of teaching and learning, writing activities simply become part of the natural instructional flow for both teachers and students. It does take higher level thinking on the part of teachers as well as students. At first, this may seem to be more time-consuming, but with practice, most teachers will find that prose-response questions require no more time to develop than short-answer questions—and usually they will need fewer prose responses to assess students' mastery of content.

Effective writing assignments will certainly demand more higher level thinking of students. And, yes, thinking deeply about content and writing prose responses do take more time than rote or superficial thinking and true-false, fill-in-the-blank, and multiple-choice responding. But—and this is an important *but*—the payoff is greater depth of understanding. The ripple effects of deeper content knowledge include:

- Students tackle advanced subject matter more readily and more successfully than they would on a base of superficial knowledge.
- Students perform better on assessments of content knowledge, especially those high-stakes tests that depend on a broad knowledge base rather than an understanding of specific course content.

There is general consensus in the education community that middle and high school students do not write as much or as well as they should

Alternatives to Bloom

Since the mid-1950s when Bloom's cognitive domain taxonomy was published (along with affective and psychomotor taxonomies), a number of writers and theorists have tinkered with this familiar classification system without, in my view, improving it much. Mary Forehand (2005) provides a succinct overview of recent developments.

in order to meet the communication demands that they will face in further education and the world of work. The 2007 National Assessment of Educational Progress (NAEP) writing assessment found that more eighth- and twelfth-grade students now master “basic” writing than was the case in previous assessments, in 1998 and 2002. However, only a much smaller percentage—33 percent of eighth-graders and 24 percent of twelfth-graders—are *proficient* writers (Salahu-Din, Persky, & Miller, 2008). Proficient refers to the skills needed to write a successful school essay or to explain complex information.

FIVE RESEARCH-BASED *TRUTHS* ABOUT WRITING

It seems fair to trade five myths for five truths. One overarching truth is that writing is underused as an instructional strategy. Following are, in brief, five more specific truths about writing that teachers should consider as they plan for optimal instruction. Like most truths in life, these are not new. The first four, in fact, come from research done by Judith A. Langer and Arthur N. Applebee (1987) twenty years ago. Some truths simply don’t go out of date.

Truth 1: Writing involves conscious manipulation of content, which improves understanding.

“In general,” Langer and Applebee (1987) comment, “any kind of written response leads to better performance than does reading without writing” (p. 130). Why? The answer lies in the manipulation of content. As students write, they must recall information, apply it in new contexts, describe it, explain it, analyze it, summarize it, criticize it, and so forth. They use the whole range of thinking, from lower level recall to higher level evaluation, as they shape their written responses. The more students write, the more they manipulate content. Thus the more they remember and understand.

According to Langer and Applebee’s (1987) analysis,

within groups of students who complete the same tasks, students who write at greater length tend to perform better than students who write less, even after allowing for a general tendency for better students to do better at everything. (p. 130)

Truth 2: Writing improves understanding of content that is the specific focus of the writing.

The studies included in Langer and Applebee’s (1987) analysis suggest that the positive learning effects of writing are *highly specific*. Students

learn most about the content that they examine in their writing. Just because students examine in depth a particular idea or section of text does not mean that they will examine the entire text with the same degree of care. This understanding points to two instructional cues. Langer and Applebee (1987) state the first of these directly, “that the particular writing task chosen may matter a great deal, depending upon a teacher’s objectives” (p. 131). Implicitly, this understanding also should prompt teachers to ask students to write often to increase the amount of content that is given in-depth attention.

Writing also can be a means of implementing formative assessment—that is, using writing to check for understanding. Fisher and Frey (2007) point out, “During content-area instruction, student writing can be used to determine what students know, what they still need to know, and what they are confused about” (p. 61). They also quote Kuhrt and Farris (1990), who believe, “The upper reaches of Bloom’s taxonomy could not be reached without the use of some form of writing” (p. 437). Popham (2008) suggests that “instruction, if properly conceptualized and skillfully implemented, can be effective without any formative assessment whatsoever” (p. 51). But, they continue:

It is less likely to be, and here’s why. The function of formative assessment is to help teachers and students decide whether they need to make any adjustments in what they’re doing. . . . Many teachers’ instructional procedures and many students’ learning tactics need major or minor adjustments. . . . In short, formative assessment serves as a sensible monitoring strategy for both teachers and students. (p. 51) (emphasis in original)

Students’ written assignments thus may also serve to monitor not only general content understanding but, as Langer and Applebee (1987) suggest, understanding of specific content.

Truth 3: Writing that broadly considers content increases general understanding, while writing that is more narrowly focused increases depth of understanding.

Writing tasks such as taking notes, answering comprehension questions, and summarizing tend to “focus attention across a text as a whole” and therefore “lead to relatively superficial manipulation of the material being reviewed” (Applebee & Langer, 1987, p. 131). However, when a student engages in analytic writing tasks concentrated on more specific information, then the writer’s attention also is “more directly focused on the relationships that give structure and coherence to that information” (Applebee & Langer, 1987, p. 131). Considering these relationships will inform teachers’ choices of writing tasks. For example, for some content, it will be more effective to focus narrowly on certain concepts and relationships

among them if understanding such relationships is more important than remembering a large body of facts.

Mansilla and Gardner (2008) contend that for students to thrive not only in school learning but in lifelong learning, they “must develop the capacity to think like experts” (p. 19). This concept gets at the notion of content selection. To nurture what Gardner, in particular, has termed the “disciplined mind” (see Gardner, 1999), teachers need to (1) help students identify essential topics in the discipline, (2) ask or allow students to spend considerable time on these few topics and study them deeply, (3) help students approach the topics in various ways, and (4) in so doing, help students develop performance understandings—that is, be able to “think with knowledge in multiple novel situations” (Mansilla & Gardner, 2008, p. 19).

Truth 4: Writing that considers unfamiliar ideas increases student understanding, whereas writing about content that is familiar may do little to increase understanding.

Langer and Applebee (1987) draw this commonsense conclusion, which sounds like merely a truism. But how often is assigned writing redundant in just this way? If students are asked to write about content they already know well, what more are they expected to learn? Theoretically, of course, one can always find keener nuances in any subject matter. But that is no longer writing for understanding as it is meant in this book.

Furthermore, writing for the purpose of increasing students’ understanding of content should not be confused with having students write to demonstrate an understanding they already possess. This is not to say that writing as demonstration has no place. After all, that is the type of writing commonly found on essay tests. And to an extent that also is the nature of writing as formative assessment. But writing for understanding is not intended to test students’ knowledge per se. Of course it may inform teachers about students’ prior knowledge or level of concept mastery as an integral part of increasing students’ understanding. In the main, the strategies in this book are aimed specifically at increasing students’ knowledge and understanding of content.

Truth 5: Writing supports learning for students at various levels of English proficiency.

In recent decades, schools have seen increasing linguistic diversity coupled with the development of new ways to address the learning needs of students who are nonnative speakers of English. Writing for understanding is a particularly powerful tool for increasing content mastery by English language learners (ELLs). A recently published eight-year study by Carol Booth Olson and Robert Land (2007) found that ELLs

benefited from the cognitive strategies approach to reading and writing about challenging texts, and especially demonstrated significant progress from analyzing and revising their own essays. (p. 296)

Olson and Land (2007) refer to an article by Langer and Applebee (1986), which preceded the volume cited in Truths 1–4, to define “cognitive strategies approach” as

to make visible for students what it is that experienced readers and writers do when they compose; to introduce the cognitive strategies that underlie reading and writing in meaningful contexts; and to provide enough sustained, guided practice that students can internalize these strategies and perform complex tasks independently. (p. 274)

The writing for understanding strategies suggested in this book are specifically designed to implement a cognitive approach in which students write in meaningful contexts often so that, over time and through practice, they gain content knowledge and deepen understanding.

DEVELOPING EFFECTIVE WRITING QUESTIONS AND PROMPTS

In order for students to expand and enhance content understanding through writing, they must use higher level thinking. This means that teachers must structure writing questions and prompts that elicit such thinking. Kenneth R. Chuska (2003) makes the case this way:

The content of a teacher’s questions will determine what students perceive as important. Low-level questions call for only factual information, and if these are the only questions that are asked, students will believe that correct, right, single answers are most important. However, questions that prompt students to use their knowledge, experiences, backgrounds, beliefs, and intuition will give student a broader perspective and a sense of importance from contributing original ideas. (p. 12)

One way to think about how to develop effective questions, or writing prompts that function similarly, is to consider what journalists call the five W’s and one H: who, what, when, where, why, and how. These are the questions that should be answered in the lead of a news story. They also are good starting points for classroom writing assignments—but with a caveat or two.

Teachers should bear in mind what kinds of responses these question words will elicit. *Who* can be answered with a name, *what* with one or two words of description, *when* with a date or a time, and *where* with a place.

These questions don't usually evoke much real writing. *Why* and *how*, on the other hand, require students to respond by reasoning and explaining. In many cases, it is important for students to know those who's, what's, when's, and where's. But those are starting points, not ends in themselves. An easy way to expand a basic *who-what-when-where* question is to add a secondary question that asks for the explanation. Here's an example of a straightforward *who* question:

Who painted the mural *Guernica*?

Answer: Pablo Picasso.

If students are studying art history, for example, this is a perfectly reasonable question. But it focuses on simple identification, and no real writing is needed. By the way, having students answer in a complete sentence ("Pablo Picasso painted *Guernica*.") doesn't make this a writing question. A question that elicits a written response should ask students to look deeper into the subject matter. A secondary question can be used to move students beyond identification into writing for deeper understanding. For example,

Who painted the mural *Guernica*? Why did the artist paint this mural?

Answer: Pablo Picasso painted *Guernica* as a protest against the German bombing of the small Spanish town of Guernica during the Spanish Civil War. He wanted the world to witness the injustice of this action through his painting.

Now the teacher and the student have opened a door to further learning and discussion. From this particular question and answer, a lesson might delve into topics as wide-ranging as artistic symbolism, the value of protest art in the past and today, or the history of the Spanish Civil War and the social and political conditions leading to World War II.

Writing questions can also take the form of writing prompts, which are statements. For example, the above question could be stated as follows:

Identify the artist who painted *Guernica* and explain the artist's reasons for making this image.

Writing prompts can be used to direct students' written responses toward more specific forms, in this case, identification and explanation. Figure 1.2 lists additional questions or prompt terms that can be used to activate higher level thinking.

Figure 1.2 Higher Level Thinking Activators

How and why are questions that tend to activate higher level thinking and responding. Following are some other higher level thinking activators:

Analyze	Devise	Outline
Argue	Discuss	Plan
Assess	Distinguish	Predict
Categorize	Examine	Prioritize
Classify	Explain	Propose
Compare	Formulate	Rate
Compose	Illustrate	Recommend
Construct	Imagine	Restate
Contrast	Interpret	Show
Create	Invent	Solve
Debate	Investigate	Translate
Describe	Judge	Use
Design	Justify	Verify

The focus of a lesson and the grade level of the students will determine the extent to which questions or prompts like these are used and the sophistication of response that can be expected. The sample question and prompt above are as effective for sixth-graders as for high school seniors. The nature and depth of the responses will vary. Teachers will be able to build subsequent discussions and future writing questions and prompts to match students’ levels of content knowledge and understanding. Following is an example to illustrate this point.

What was Paul Revere’s ride, and why is it famous?

Upper elementary or middle school student’s response: Paul Revere rode through the towns to warn people that the British were coming. The British army wanted to arrest some important American leaders to make the Americans stop rebelling against the king. Paul Revere’s ride is famous because Henry Wadsworth Longfellow wrote a poem about it.

High school student’s response: Paul Revere was asked to ride from Boston to Lexington to warn John Hancock and Samuel Adams that the British army was

on the march. The army planned to arrest them. In small towns along the way, Revere warned other patriots about the British army's movements. Revere's ride probably would have been lost to history except that Henry Wadsworth Longfellow wrote a poem about it. Longfellow's "Paul Revere's Ride" was written nearly one hundred years after the famous event, but it was published widely. The poem made the ride into a kind of myth. Today everyone knows about the midnight ride of Paul Revere because of this poem.

The development of effective writing questions and prompts will be further explored in the chapters that follow. Each of the next five chapters concentrates on eliciting a different mode (type or genre) of writing from students: narrative, descriptive, expository, argumentative, and persuasive. Some of these descriptors may seem unfamiliar—they will be to most students at first—and so each of these chapters begins with a clear definition and proceeds from there.

DAILY WRITING

Writing for understanding is most effective when students write often. Daily writing fills this need in a certain way, and once a pattern of writing is established it is easy to maintain and build upon. Daily writing, in the sense intended here, may or may not be connected to a larger project in any significant way. It may be a lesson starter or a discussion starter or a way of encouraging students to settle themselves mentally and physically to begin learning.

One strategy for daily writing is to begin each class period with a writing question posted somewhere in the classroom. Most teachers find it fairly easy to establish a consistent routine so that students come into the classroom and immediately set to work independently writing a response to this question while the teacher goes about the usual business of taking attendance and such. But this should be more than merely a settling-in exercise that is quickly abandoned. Instead, this writing moment can be used for

- Reviewing a previous lesson before continuing on the same topic
- Activating prior knowledge before starting a new lesson
- Arousing interest or curiosity about content to be studied

The writing that students do in response to the daily question is intended to be brief—just enough to get the mental juices flowing, so to speak—and to set the stage for the rest of the class period.

Here's how to use this strategy:

1. Write a question or a prompt that requires higher level thinking but can be answered in four or five sentences. (See the samples in Figure 1.3.)

2. Write, post, or project the question so that students see it the moment they come into the classroom.
3. Establish a pattern of behavior so that students enter the classroom and immediately begin to write. Ask students to use a separate journal or a separate section of their notebook. Then allow about five minutes for writing. Once this pattern is set, students will follow it without teacher direction.
4. Ask a few students to read what they have written. Use these responses to move into discussion, direct instruction, or some other aspect of the day's lesson.

Figure 1.3 Sample Daily Writing Questions and Prompts

Review a Previous Lesson

- Explain how you know that a number is a prime number.
- In your own words, define *ecosystem*.
- What did protesters hope to gain by dumping a shipment of tea into Boston Harbor?

Activate Prior Knowledge

- Have you heard the term *variable*? Describe what you think it means.
- In what ways do you think organisms resemble one another within a species?
- Briefly describe how you think that cell activity in the body might be regulated.

Arouse Interest or Curiosity

- You want to carpet your bedroom. How might you decide how much carpet to buy?
- If you were to devise a train to run by magnetic energy, what properties of magnets would you need to consider?
- It's the late 1700s, and an enemy army has landed on shore near your town. Speculate on ways that you might warn people in other nearby towns without modern means of communication.

This last step is critical. By being asked to share what they have written, students are taught (1) that writing is part of learning, (2) that such writing assignments are integral to the lesson and not merely busy work, and (3) that what they write is valued. Using students' written responses in this way also provides teachers with a way to check informally (formative assessment) on students' understanding, as well as to gauge how best to proceed with the day's lesson. For example, students' answers to a prior knowledge question may tip off the teacher that more background information will need to be provided in order to teach the intended lesson successfully.

There also are ways to use this type of short writing activity during a class period and at the end of period instead of or in addition to doing so

at the beginning of the period. These ways will be explored in the chapters that follow.

SOME THOUGHTS ON TAKING NOTES

Many teachers provide little or no guidance to students about taking notes in class. Some schools and some teachers offer sessions or entire classes on study skills that include note taking, but many of these classes are aimed at students who have trouble learning. Other students are left to fend for themselves. However, note taking can provide another vehicle for increasing students' writing for understanding, if teachers choose to use it as a writing strategy.

Taking notes "on the fly" as a lesson is being presented argues for jotting down words and phrases, not complete sentences or paragraphs. Students usually develop their own form of shorthand for this purpose. Where writing for understanding comes into focus is during the next (often omitted) stage, when students reread their jottings and write a summary. Karthigeyan Subramaniam (2008), an assistant professor of science education at Penn State Harrisburg, offers the following advice to teachers to improve students' note-taking skills and expand them to include writing for understanding:

Model note-taking tools, skills, and cues. . . . Try to implement more introspective and active note-taking skills (discriminating between salient and non-salient notes to be written, summarizing notes from the textbook, comparing and contrasting facts, annotating drawings and sketches, giving students the independence to make their own notes), rather than passive note-taking skills (dictation, copying notes from the board or textbook). (np)

Note taking in this manner encourages students to use their notebooks, as Subramaniam (2008) says, as "repositories in which their content knowledge and writing work together to form meaning" (np). Taking notes with an eye to writing for understanding is another form of daily writing that is easy to integrate into the classroom routine and yet can have a powerful positive effect on increasing students' acquisition and understanding of content.