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Intuition

> During all those years there was a feeling of direction, of going straight toward something concrete. It is, of course, very hard to express that feeling in words, but it was decidedly the case and clearly to be distinguished from later considerations about the rational form of the solution.
>
> —Albert Einstein,
> in Wertheimer's *Productive Thinking*

We are working on the last paper of the semester. After the rigors of the library paper with its precise requirements, I want to give students an assignment where they can satisfy some of their creative urges. We have been reading and discussing selections having to do with how various cultures view nature, as the Self or as the Other: Nobel Peace Prize winner Rigoberta Menchú's "Earth, The Mother of Man," a piece on ecofeminism, another on the Earth First! movement, Wendell Berry's "Think Little," and several on how ancient and modern cultures have conceptualized gardens based on their view of the natural world.

In this part of the country, we are surrounded by natural beauty—and also by controversy about how that beauty should be preserved and maintained. This assignment will, I hope, make students more aware of and help them articulate and analyze their feelings about a particular natural spot.

To this end, I use a guided visualization exercise at the beginning of the class to help them "see" a place first before they try to describe it.

I always worry when I use this exercise—will the students find it too hokey, too New Age? Will they cooperate? Will this exercise, like everything else in the class so far, be "too hard" for Ira? Will Tom and Chad fall asleep? But they do cooperate (Ira is absent, as has been happening with increasing frequency; Tom and Chad snort a little at the beginning but get into the exercise anyway). I ask the class first to sit in a comfortable position, with eyes closed. Then I ask them to relax specific parts of their body, starting with the toes and working on up to the facial muscles, a technique that I tell them can also be used to help them deal with stress.

I then ask them to think about a particular place, a place that is peaceful and beautiful, somewhere they like to be, and visualize themselves in that place. I ask them to look around—what colors do they see? Are some things brighter or duller than others? The place has certain characteristic sounds they enjoy—what are those sounds? Listen carefully—are they loud or soft? High in pitch or low? There are certain fragrances associated with this place—what are they? There are things to touch—what do they feel like? Do they have rough or smooth textures? I ask them to move around in this place, experiencing it from several different vantage points.

After a peaceful minute or two, I tell them to count slowly to three, breathe in deeply, open their eyes, and say silently to themselves, "I feel alert and relaxed." Then I ask them to freewrite, describing this place and why it is meaningful to them. Everyone writes, but Rod writes with particular intensity. His draft, describing a river where he and his father went fly-fishing, becomes the best paper he has written this semester; unlike his experience with earlier papers, this one needed little revision. We discuss the paper and his love of fly-fishing, and I loan him my copy of Maclean's *A River Runs Through It* for his own enjoyment.

He tells me he "knew" how this paper should go right from the start—it just "flowed."

We have all felt it at some point, that feeling of directedness and certainty. In ordinary conversation, we call this feeling by various names: intuition, inspiration, creative thinking, a hunch, an educated guess. Those who write about this phenomenon of nonanalytical thinking often describe it in terms of feeling, hearing, or seeing. Psychologists have referred to it as "thinking with the muscles" (Kempf 23), "knowing with the left hand" (Bruner), "listening with the third ear" (Reik), listening to one's "inner voice," or "subjective knowing" (Belenky, Clinchy, Goldberger, and Tarule). Philosophers, especially those interested in education, write about intuition as "awakening the inner eye" (Noddings and Shore) and as the "felt sense," "the soft underbelly of thought . . . a kind of bodily awareness that . . . can be used as a tool . . . a bodily awareness that . . . encompasses everything you feel and know about a given subject at a given time. . . . It is felt in the body, yet it has meanings" (Gendlin 35, 165). In the field of composition, Perl has applied Gendlin's "felt sense" to writing as a way of describing that feeling of momentum or of inspiration that guides us as we plan, draft, and revise our work ("Understanding Composing"). This chapter examines this affective "felt sense" as part of the thinking process. By understanding the phenomenon more fully, we as teachers can help our students understand how to be more receptive to intuition. We can show them that they need not wait for inspiration to strike but can find ways to make appointments with the muse when they write.

First, let us be clear about definitions. By "intuition" I mean both the knowledge that comes to us without conscious use of rational, analytical means and the process by which such knowledge comes to us (see Harré and Lamb).[1] "Insight" describes a moment of intuitive comprehension, the phenomenon of suddenly "seeing" a solution or understanding structures and relationships. The term was first used in psychology by Gestalt psychologist Wolfgang Köhler (1925)

to describe a form of rapid and intelligent problem-solving by chimpanzees, where the chimps behaved as if their perception of the problem (bananas hung out of reach) had undergone sudden restructuring when they saw all the constituent elements of the problem in the same field of view (the bananas, a stick, and boxes that could be stacked and stood upon). Insightful experiences are legendary in the sciences: the "Eureka!" experience Archimedes had in the public bath, the breakthrough that the falling apple brought to Newton's thinking about gravity, the sudden flash of understanding Henri Poincaré experienced (about the relationship between Fuchsian functions and non-Euclidian geometry) when stepping onto a streetcar (Perkins; Poincaré, "Mathematical Creation"; Hadamard). Those of us in the humanities know insight as the "aha" experience we have when we see a new relationship between ideas or sense a new direction for a piece as we write. "Inspiration," a term used most often in the humanities, refers to the affective state of tension, excitement, and engagement felt during an intuitive, insightful experience. The term is often used in ordinary parlance in connection with artistic expression or religious experience, but it is also used in a broader sense to describe the affective state that accompanies all episodes of intuitive, insightful knowing, of being carried along by and totally absorbed in what you are doing—the state athletes refer to when they are "playing in the zone," a state Csikszentmihalyi calls "flow."

Intuition as the Apprehension of Ultimate Truth

The construct of intuition has undergone important changes over time, changes that shed some light on the present understanding of the term. Let us look first at ancient views of the phenomenon.[2] In the beginning, intuition was taken to be not just a way of knowing but to be a particular kind of knowing—the nonrational, direct apprehension of higher truth or of the divine. The ancients, who made

no clear distinction between external events and internal impressions (see Noddings and Shore 3), described intuitive knowing in external terms, as visions seen or voices heard: the gods appear to the heroes of the *Iliad*, a still, small voice speaks to Elijah, a light from heaven knocks Saul to the ground on the road to Damascus, a heavenly being appears to Muhammad and commands him to recite.[3] Most ancient societies had seers, prophets, or oracles who could interpret the intuitive experiences of others, predict events, and give advice based on their own messages from the cosmic forces. Eastern religions viewed (and still view) intuition as a valuable source of truth; Hindus and Buddhists achieve insight into the cosmic order of things through the discipline of body and mind in meditation.

The ancient Greeks and Romans, in spite of their emphasis on rationality, also saw intuition as the understanding of and the source of truth. Stories of the lives of the noble Greeks and Romans demonstrated that for many generals and rulers, the words of priests and soothsayers superseded rational conclusions and were ignored at one's peril (as was the warning to beware the Ides of March). The Pythagoreans combined their knowledge of astronomy and mathematics with a belief that numbers (which are intuitively apprehended) are the ultimate elements of the universe—elements that if understood could unlock the secrets of the cosmos. One basis for this belief was Pythagoras's discovery of the precise mathematical basis for harmonious musical intervals. This insight into the relationship between nature and number had for his followers a mystic force, giving him the status of a seer (Bronowski 156–57; the notion of the "music of the spheres"—the heavenly music emitted as the planets turn on crystal spheres in a mathematically harmonious cosmos—is based on the Pythagorean idea that the universe is governed by exact numbers). Plato's doctrine of ideas held that while induction (which operates on the sensory world) can yield conceptions, only intuition (which operates on conceptions) can yield ideas, the ultimate reality beyond the senses.

The mind has inborn impressions of these ideas (or abstract forms), impressions that make all knowledge possible. For Plato, all knowing was remembering, an intuitive recall of the deep structure of reality. In his *Posterior Analytics*, Aristotle referred to intuitive reason, or knowledge of the principles of scientific knowledge, which exist without logical proof. Intuitive truths (we might call them assumptions) are necessary for deductive reasoning, since without them reasoning would consist of an endless chain of proofs. The Neoplatonist Plotinus held that true knowledge is obtained through nonrational "seeing," a mystic experience in which the seer feels united with the object of contemplation. Medieval theologians like St. Augustine and Thomas Aquinas identified this intuitive mystic experience with the contemplation of God and divine revelation.

As Western cultures moved into a more rationalistic, scientific age, the concept of intuition lost much of its original association with the mystical and divine—indeed, since it is not subject to demonstrative reasoning or empirical observation, intuition was often discounted as a way of knowing anything. Nevertheless a few philosophers, reacting against the rationalism of the times, defended intuition as a source of and path to ultimate truth. This truth no longer came externally, however; as Conners notes, the god moved within (73–74), and psychologists began to speak of inner sight and inner voices. Classical intuitionism, as psychologist Malcolm Westcott calls it (*Toward*), held that intuition is a form of immediate knowledge that cannot be understood in rational terms and that is superior to rational understanding.[4] Spinoza argued that intuition was the only route to absolute truth; reason can lead to knowledge of the abstract, but only intuition can lead to knowledge of the essence of the particular—to "knowledge of" rather than "knowledge about." Attainment of intuitive knowledge puts the knower in direct contact with ultimate reality. Reason is not discounted in this process—in fact, the most elaborate intuitive experiences happen in concert with the full exercise of rea-

son—but only intuition can lead to true knowledge and conviction (see Westcott, *Toward* 11–12). Kant claimed that intuition was the source of propositional knowledge, a nonrational recognition of such entities that could not be known through ordinary sense perception. Like Plato, he proposed that the mind held a priori knowings of truth (like the basic axioms of Euclidean geometry); intuition, then, was a way of getting at what was already known innately. At the end of the nineteenth century, Bergson argued that we can use intuition to gain a deeper understanding of reality than intellect alone can give us. This reality (which is dynamic change, flux, movement) is ordinarily hidden from us by the intellect, which imposes immobility and makes possible the conduct of ordinary affairs. Through intuition, we apprehend the dynamic flux of life, the élan vital or life force. Bergson believed that while there is no guarantee that intuition will come when bidden, intuition can be encouraged through the mental effort of freeing oneself from reason and logical thinking.

Intuition as a Way of Knowing and Thinking

With the advent of modern psychology, intuition came to be seen not as a way of knowing the truth or apprehending ultimate reality but simply as a way of knowing (see Noddings and Shore 7). Carl Jung, the first to move intuition out of the realm of metaphysics into psychology, discussed the phenomenon as part of his psychoanalytic theory of personality types. According to Jung, personality and behavior can be understood in terms of four mental functions: intuition (perception by way of the unconscious), sensation (perceptions by way of the senses), thinking (cognition, the forming of logical conclusions), and feeling (subjective evaluation). One's personality is partly shaped by whichever of these functions becomes more fully developed than the others (some researchers have used Jungian personality theory to explain individual differences in writing processes;

see Jensen and DiTiberio). Intuition for Jung is in opposition to sensing, as thinking is in opposition to feeling; it is the nonrational, unconscious perception of possibilities, implications, principles, and objects as a whole (at the expense of details). By "unconscious" he means not only one's individual, personal unconscious but also the collective unconscious—the inborn, inherited understanding of universal, archetypal human situations (like the situation of Oedipus, for example). For Jung, intuitive perception of the collective unconscious leads us to the collective wisdom of our culture about recurrent human problems. It is a way of immediate knowing, of connecting with cultural archetypes, but no more special than other ways, and is modified by the other mental functions.[5]

In the first part of the twentieth century, psychology did not devote much attention to intuition. Because they defined learning as a sequential, step-by-step process, behaviorists did not know what to do with intuition or with the phenomenon of insight; they defined the latter simply as "one-step learning" (see Mowrer). The Gestalt field psychologists, as noted earlier, were largely responsible for introducing the concept into the modern psychological conversation. One such scientist, Max Wertheimer, took the notion of intuition as a crucial part of what he termed "productive thinking." Examining mathematical (usually geometrical) problem-solving, he theorized that as problem-solvers we have a need to grasp things as a whole and to see what the structure of the whole requires for the parts (212). When we sense a gap, we look for completeness, for inner relations, structure, function; that search is accompanied by a feeling of directed tension, which eventually leads to a sudden insight arrived at intuitively rather than logically. For Wertheimer, intuition involves "seeing" (his descriptions of the phenomenon are nearly all visual) deep structures, relationships, wholes.[6] Later, Westcott, who thought of intuition in more limited terms as a special case of inference, picked up Wertheimer's notion of productive or intuitive thinking

("New Approach"), defining it as an especially high level of problem-solving where the problem is not always explicit or fully defined and the process of reaching a solution is not clearly defined in a set of steps—the solution is in fact reached in "jumps" or "intuitive leaps" ("On the Measurement"). This intuitive leap differs from the inductive leap in that there is less evidence available as to which way one should leap and there are no analytical steps leading up to the leap. It is nonrational and untraceable, where the inductive leap is rational and traceable (*Toward* 40–41). Modern cognitive psychology has continued to take intuition as a form of inference, examining the phenomenon as informed judgment in the context of discovery (Bowers, Regehr, Balthazard, and Parker).

Psychiatrist Eric Berne (inspired by his own intuitive experiences while examining soldiers at an army separation center after World War II) advanced the understanding of intuition by formulating the concept of "clinical intuition," the clinician's quick "take" on or diagnosis of a patient in spite of little concrete evidence.[7] Berne defines such intuition as "knowledge based on experience and acquired through sensory contact with the subject, without the 'intuiter' being able to formulate to himself or others exactly how he came to his conclusions" (4). This is not dissimilar from how experienced teachers do a quick "take" on student papers—in holistic scoring, for example.

Berne's discussion of the process and how to foster it can be applied to other situations that have possibilities for intuitive knowing. First, Berne writes that intuition can and should be actively cultivated, since in his experience intuitive knowing proved remarkably useful and reliable (22); the function can be attained more easily through practice (25). A certain attitude of mind, what he termed the "intuitive mood," is necessary for intuition to come into play. He found that to enter this mood, he needed to establish a "state of alertness and receptiveness," requiring intense concentration (23). Such a state is different from the withdrawn state of

meditation in Yoga in that one is able to maintain normal social contact in the intuitive mood, but it resembles meditation in that logical thinking is suspended. This is perhaps why the visualization exercise I used in class and other such techniques (like Moffett's use of meditation) work well for many students. Berne also states that intuition is prelinguistic (as when students say "I know what I mean but I just can't say it")—it can be "felt" or "seen" or "heard," but not yet said; the conscious verbalizations of the intuition are approximations and refinements of the felt sense (26–27).[8] We as teachers can help students verbalize this "felt sense" by teaching them some of the strategies, for example giving them various heuristics for invention (as I tried to do in the visualization exercise—using a heuristic for description involving the five senses).

A Theory of Intuition

If we want students to make good use of their intuitive knowledge, we need to understand not only what intuition is but also how it works. What follows is a theory of intuition in a cognitive psychology framework, based on the observations of those who have written about it and my own interpretations of the phenomenon. We begin with Aristotle, who observed that when acquiring new knowledge, the organism first experiences sense perceptions, then retains them, then at a higher level systematizes them (*Posterior Analytics*). Berne, writing of his own intuitive experiences, agrees with Aristotle's analysis (6). Berne points out that this analysis resembles a cognitive science view of how knowledge is retained and organized in what is now called schema theory—we experience the world, form internal representations (schemas) from that experience, and mentally organize related schemas into networks.

When cognitive scientists write about schemas, however, they define them as knowledge structures that are logical, propositional, and linear—even algorithmic; such

schemas include narrative structures (such as patterns for folktales), scripts (such as the pattern of events included in going to a restaurant), and scenes (such as the pattern for furnishing a living room). These schemas are organized logically and accessed in the same way. But there is another kind of schema, one that can help us understand how the intuitive process might work. Mark Johnson proposes that we also form "image schemas," ones that operate not in logical but in analogical or metaphorical fashion. These image schemas are not mental pictures but are abstract and conceptual; they are not limited to visual properties but can have auditory and kinesthetic properties as well. These images, according to cognitive psychologist Allan Paivio, have their own coding and representation system, independent of but partly connected to the representation system for verbal representations: images can evoke or be exchanged for verbal representations, and verbal representations can be exchanged for images (*Imagery, Mental Representations*). This may explain why clustering techniques and other visual approaches to invention work so well for some writing assignments—such approaches tap image schemas.

Many have written about the fact that intuition is subconscious (or if conscious, unaware of its own workings). Berne, for example, wrote that during his own intuitive episodes when diagnosing patients, there was a feeling that "things are being 'automatically' arranged just below the level of consciousness (or, as a cognitive scientist would put it, in long-term memory); 'subconsciously perceived' factors are being sorted out, fall 'automatically' into place and are integrated into the final impression" (26). What is being "arranged" in intuitive knowing? I suggest that when we are working on a particular problem (like writing a paper), we are using short-term memory, mentally reviewing and analyzing various schemas and looking for similarities, based on prior knowledge. But we are also working at another level in long-term memory, working analogically and metaphorically to access "image schemas." A moment of insight

occurs when we suddenly "see" the structural similarities between previously unrelated schemas, as when Archimedes connected his own weight to the weight of the crown as he watched water being displaced by his body in the bath.[9] It is not the truth of the insight but the similarities of the schemas that provide us with the feeling of certainty that comes with intuitive knowing—a particular solution "feels" right because the schemas match up so well, like two puzzle pieces that come together with a satisfying snap.

Intuition in the Classroom

This theory of intuition is based on assumptions that differ from what Young terms "Vitalist" assumptions—that is, that creativity is inborn and therefore composing cannot be taught. To the contrary, the present discussion assumes that creative, intuitive thinking can be learned, just as new schemas can be formed and old ones restructured, and that teachers can find ways of fostering intuition in the classroom. In such a discussion, it is important to focus on how psychologists (as opposed to most philosophers) have defined the phenomenon: not as a path to truth but as a way of knowing, different from but not superior to rational comprehension. First of all, such a focus will keep the examination away from such subjects as extrasensory perception, spiritualism, peyote cults, and other manifestations of intuitive truth-seeking suitable for ordinary conversation in California, perhaps, but not for a rigorous academic discussion of the topic. Furthermore, if we think of intuition as a way to truth, we must ask the question, whose truth? Teachers must always be alert to the fact that the classroom is not the place to impose one particular way of truth-seeking on our students any more than it is the place to impose one particular version of truth. If, for example, we use the techniques of meditation advocated by Moffett in "Writing, Inner Speech, and Meditation," we must be clear that we are not asking that students subscribe to the Eastern religions out of which those techniques

arose (see Crosswhite's critique of Moffett's suggestions). We want to help our students learn to think for themselves, but it is not our business to tell them what to think.

But perhaps just as important as the issue of teaching versus indoctrination is one indisputable fact: intuition can be wrong. It is, as Berne found in his clinical work, a capacity that is fatigible (25). When we are tired or overworked, our intuition can lead us in the wrong direction. And even when we are fresh, we can be misled by this "felt sense." The literature is full of anecdotes about "aha" experiences of fruitful insight; what does not often get reported is the kind of "aha" experience I had while writing this chapter. My felt sense was that an entire section on Eastern religious traditions and intuition was crucial to the discussion. I was carried along by the similarities between the mystical experience and the more common phenomenon of intuitive knowing. Only when I finished the chapter and went over it with a critical eye could I see that the section on mysticism led in a direction away from rather than toward the main path of the discussion.

But even though intuition, like logical reasoning, can occasionally be wrong, it is still a useful way of knowing, one we can cultivate in the writing classroom. We can do this by first establishing a curriculum that fosters analogical and metaphorical as well as analytical thinking. Noddings and Shore suggest that we need to think about "intuitive arrangement" or "intuitive presentation" of subject matter—that is, one that takes into account the functioning of intuition in the planning of curriculum (116). Instead of beginning a unit with well-defined objectives and asking, "How can we get students to learn these things?," we might begin by asking (as I did on the paper describing a place and its meaning), "What do we want the students to experience intuitively in order to engage them in learning?" We might start a class by piquing the students' interest, seeking to familiarize them with a domain and allowing for rather than pointing out a direction to be taken (for example, if students are reading

"No-Name Woman" from Maxine Hong Kingston's *Woman Warrior*, we might show them pictures of Chinese peasant life or a videotape such as the provocative *Small Happiness* [New Day Films, 1984] that documents the place of women in modern Chinese rural areas). Schumacher and Nash suggest that metaphor and analogy are powerful learning tools, helping students "restructure" their knowledge as well as acquire new knowledge and transfer knowledge from one domain to another. We can make substantial use of metaphor and analogy in the curriculum, for example, asking students to look for similarities among the readings and to think of ways to compare them (in terms of structure, subject matter, audience, and so on). We can ask them to create visual representations of their ideas in clusters or maps, using some of the techniques suggested by Rico. We can ask them to use metaphors and analogies themselves as they write to increase their awareness of the power of such images.

We can also help students understand their own intuitive process as they write. We cannot proceed by having students consciously monitor this process, however. Unlike motivation and emotion, intuition does not accept self-monitoring and assessment; indeed, as Berne notes, if the intuiter tries to analyze or verbalize what is happening, the intuitive process is impaired (23–24). It is a nonrational and nonreflective process, one in which the focus is so intense that there is no possibility of self-observation (26), only of retrospective accounts. We can, however, help students understand the conditions under which intuition occurs and how to establish those conditions for themselves. Wallis's classic work on creative thinking provides a useful framework within which to help students understand the process. Wallis, discussing the work of great thinkers, describes four stages of the creative process: preparation, incubation, illumination, and verification. Preparation involves intense conscious, systematic mental effort, investigating the issue or problem analytically from all directions. Then the problem or issue in question is put aside and not thought about con-

sciously; it incubates beneath the surface, where mental exploration takes place in long-term memory. The moment of illumination or insight often comes dramatically, when one is least expecting it (when sitting in a bath, for example, or stepping on a streetcar). Then verification is necessary, a period of intense analytical work to test the validity of the insight and work it into rational (sometimes verbal) form. Thus rational analysis and intuition complement one another in the thinking process. As Wallis notes, a good deal of creative thinking resembles musical composition (we might substitute "composition in general") more than it does the "problem-solution" scheme described by Poincaré and other creative scientists; nevertheless, Wallis contends, the four stages he describes can generally be distinguished in all fields of inquiry (54). It should also be noted that while Wallis speaks of "stages," he is also quite clear that these stages are not discrete steps but blend into one another and can be recursive; as Perkins points out, it might be better to think of them not as stages but as aspects of the creative thinking process (184–85).

It is clear from the descriptions of Wallis and of others who have researched the process (see, for example, Getzels and Csikszentmihalyi) that creative, intuitive thinking involves intense mental effort. Most teachers concentrate on fostering the analytical thinking efforts that Wallis identifies with preparation and verification. If we want to establish a balanced method of education, however, we need to help students "proceed intuitively when necessary and to analyze when appropriate" (Bruner and Clinchy 83). There are ways of encouraging what Berne terms the "intuitive mood" and Noddings and Shore term the "intuitive mode"—an affective state characterized by involvement of the senses, an attitude of commitment and receptivity, a quest for understanding, and a productive tension between subjective certainty and objective uncertainty (Noddings and Shore 69). Let us consider how writers can encourage this affective state.

Preparation before one sits down to write includes, in

all knowledge domains, a good deal of dogged rational work, especially in accumulating the content knowledge needed for the task at hand. For most academic writing tasks, this work involves such acts as reading, discussion, experimentation, observation, and note-taking. The beginning stage of the actual writing (what Noddings and Shore term the "preintuitive mode") is often characterized by "an agony of avoidance" (94)—almost all writers find reasons not to begin to write. Involvement of the senses in various rituals is a time-honored way for writers to get themselves over this procrastination. Those who are visually minded might doodle for awhile; others might take walks, or take baths, or meditate, or eat. Dr. Samuel Johnson always drank great quantities of tea, sometimes as many as twenty-five cups at one sitting; Amy Lowell and George Sand smoked cigars; Schiller kept rotting apples under the lid of his desk (Ackerman 292–93).[10] Students who think that experienced writers work effortlessly are fascinated to find that in fact they need a deliberate warm-up before inspiration can strike. We can discuss writers' rituals with students, confess our own if we are so moved (mine involves exactly two cups of strong coffee), ask students to think about what helps get them started, and try a few rituals—perhaps visualization techniques, since "seeing" seems to be an important part of intuition—in our classes.

The setting where one works is also important for encouraging the intuitive mood. As Berne noted, once the intuitive mood has been established, the setting often does not matter, since we become "lost" in our work (the literature on creativity is full of anecdotes about "absent-minded" thinkers totally unaware of their surroundings). But most people need a quiet, pleasant place to work, preferably a room of one's own. We can ask students to think about their own surroundings—when and where do they write best, morning or late at night? Listening to music or completely quiet? In the library or at home? (Aside from making students aware of how to establish the intuitive mood, such questions can

make us and our students aware that their difficulties with writing may have something to do with the circumstances under which they write. Melanie, the returning student, at first turned in papers that were disjointed and poorly organized. In a conference I discovered that she tried to write after supper while helping her youngest child with his homework. The organization of her papers improved markedly when she got up earlier than her children and wrote in the serenity of the morning.) Establishing routines to help automate the more low-level aspects of the thinking and writing process will also help in the preparation as well as the verification stages. The muse may come unbidden, but it is well documented that structure and routinization will help to invite her in and keep her entertained (Noddings and Shore 98).

Once certain processes become routinized and automatic, our mental capacity is free for more intuitive encounters with the issue at hand. We can help students understand the paradox of making an appointment with the muse by establishing the importance of particular routines for writing in the classroom (for example, a particular time each day or week for journal writing). It is important to note that establishing routines does not mean a return to rote learning. It does mean that there are some matters (like proofreading) that students find difficult and irksome but that can be made through routine use almost automatic (especially with the help of a computer spell-checker), freeing students for productive engagement with ideas.

Students should understand that once they have started to write, their efforts may not immediately bear insightful fruit; we can counsel them to view the resulting frustration as a natural part of the process and to develop an attitude of commitment, receptivity, and engagement. Intuitive knowing is sustained by motivation, by the quest to understand. One way to foster this attitude of commitment is to schedule some time for incubation, for what Murray calls "the essential delay," to mull over their ideas and wait for possible in-

sights, or at least to come back to a draft and see it afresh. The easiest way to do this is, of course, for the teacher to build incubation time into the assignment by requiring several drafts. Student schedules and human nature being what they are, most students—even advanced students who know better—will write their papers at the last minute (see Ronald and Volkmer's illuminating piece on students' accounts of their own writing processes). As Noddings and Shore point out, the teacher can also do much to encourage an attitude of commitment by suspending evaluation (106–08), by establishing learning goals rather than performance goals for students, as discussed in chapter 3. In establishing such goals, our aim is to have students work not just to complete the assignment with a good grade but also to understand the material they are grappling with, to learn something of value. If we succeed, students will be motivated "to try, to risk, to look, to judge, and to stick with the material until it speaks to [them]" (Noddings and Shore 112).

Finally, we can help students understand that they must balance the strong subjective certainty of the intuitive mode with the objective skepticism of the analytical mode. The affective element of intuitive thinking is so powerful that it sweeps questioning aside, carrying us along in its strong flow. Because the intuitive mode operates prelinguistically, however, we must then translate the products of intuition into what Noddings and Shore call "public form"—a poem, a mathematical proof, a piece of prose. We need to work this form out and critique it carefully to see if what we wrote at a fever pitch is worth keeping or if it should be tossed; in Elbow's terms, after we play the believing game we need to play the doubting game ("Ranking"). Again, we need to make this process explicit to students. Those who have had intuitive experiences while writing have a particularly difficult time critiquing what they produced in that mood of certainty and direction. The affective experience is so intense that they become attached to every line of the piece that flowed under their pens (or across their computer screens).

The paper seems right the way it is because of the mood in which it was written. Showing students that we have to revise or even scuttle some of what we ourselves write in an intuitive mode will help them understand the process of shuttling back and forth between believing and doubting, between intuition and rational critique. We can make appointments with the muse, but we also need to make a later appointment with our rational mode of thought to verify that the intuitive song we are singing is actually in tune.