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Feel free to pick up a pencil and change the title of this article. Raise the number or reduce it to suit. Be sure to use a pencil, though, for the number won't be permanent; it will change with each new term of year because my "thirty" represents the number of students in a class. Whatever your real number, I want to suggest that all students can become aides, assistants in their own education.

The biggest discovery I made when I started to have students evaluate their own work was that often they were the only ones who could do it. To put it another way, I realized I couldn't always teach them because only they could discover what they needed to learn. This revelation came when a writing class of college-bound students was working a painful route through Loren Eisley's *Immense Journey*. I wanted to see how much of the man and his attitudes they'd begun to discover. We had struggled with vocabulary, style, and ideas. I say "we," for I too was struggling to find means to help them cope. They took **dialectic** notes. We had had almost page-by-page oral analysis. They had written **precis**. Nothing broke through the wall of frustration, confusion, misconception, even hostility that grew higher daily. So along about Chapter Five, I turned to an exercise I'd learned to use in literature classes to help students understand the characters—the **biopoem**. This time, though, they were to write one about the author.

The degree of cooperation I received was due, I'm sure, as much to relief at avoiding or postponing another antagonistic class discussion as to desire to understand. Some of it was, perhaps, due to a shift in emphasis from previous concentration on the ideas in the book to the man who wrote it, his point of view, and his purpose. Whatever the cause, cooperation was what I got. I'm convinced that if all I had done was ask them to write the biopoem and hand it in, something would have been gained and we'd have had a pleasantly diverting few minutes. But luckily I did more; I asked them to share their poems, to give and get peer

response. Students spent almost half an hour criticizing, applauding, justifying, and challenging each other's adjectives in line two of the poem. Those who'd pulled words out of the air with no concern for meaning or application were felled dramatically by classmates with cracks like "Whaddaya mean, he's superfluous? How can a guy be superfluous? Look it up." The sensitive were encouraged by positive responses to their sometimes unexpected contributions to the lines that begin with "Who fears. . . ." One student wrote, "Who fears a closed mind," and when I collected the papers, I found twelve others in the class had added that to their papers. Another wrote, "Who fears the end of life before we know the beginning?" That idea was recorded by several others. A combination of peer and self-evaluation: Someone else's idea was better, struck a responsive note, and was added to or substituted for a weaker one. We could have reached the same insights by other methods, but what seems to me important was that this particular writing-to-learn technique, the biopoem, forced them to produce a similar body of material which could then be compared and evaluated. Discussion had a focus, the result of shared effort they'd made and considered. They'd been exposed to others' styles of thinking, looked at them analytically, and in some way, if only a small one, become aware that thinking processes can be analyzed.

What did they learn? Lots of things. First, that they held many reactions and insights into Eiseley's book in common. This revelation told them that a thread of meaning, style and point of view was in the book, that it was discoverable, and that they were beginning to discover it. Second, that no one of them had a monopoly on discovery, insight, or understanding. Just about everyone had at least one good contribution to make, and just about everyone had a silly, superficial, or completely off-the-mark comment in his or her poem. Third, that the responses of their peers were both helpful and frank, and in criticizing the words and ideas of their peers they were learning how to criticize the words and ideas of Eiseley.

What did I learn? I learned that I hadn't understood or appreciated either students' misconceptions, or their previously untapped ability to apply their fresh intelligence and reactions to the book I'd worked with so many times. In this instance, my teaching contribution was merely to provide the vehicle for learning; they provided the fuel that ran it. They provided it more quickly and in greater quantity than I could have if I'd worked one-to-one with each of them.

Once the biopoem exercise led them to see the person behind the book, I felt free a few days later to assign an **unsent letter** to Mr. Eiseley. Each was to choose an idea or opinion of Eiseley's she or he objected to, resented, or just simply didn't understand, and tell him why. Look at just one result from a girl who had been in tears a week before. She had understood one of his ideas, specifically pinpointed her objections to it, learned to spot the basic stuff of his style, and expressed something about her own reading and learning difficulties.

Dear Mr. Eiseley,

I disagree with your approach to presenting the idea that man evolved from the water. I refer to Chapter Two . . . entitled "The Flow of the River."

The chapter begins with an explanation that water is the most basic substance in the planet. The words you choose to define this concept such as "magic" and "charmed fairy circle" offer a poetic story for the reader to imagine. Your adventure floating downstream introduces a dream-like quality when you explain your feelings of being part of the living river. . . .

The poetic concepts at the beginning are suffocated in poetic descriptions of the "wind ripples" and "odorous shadows". . . . Because of the poetic presentation I could not absorb your feelings of being part of the river. Instead of experiencing the thrill of sensing one's origins, I tried to interpret the narration of "sliding down the vast tilted face of the continent" and could not parallel floating down a river with "wearing down the face of time."

My unsuccessful attempt at translating your poetry discouraged sympathetic feelings for your tale of the frozen fish. I was unable to accept the reality of a fish reborn from the ice and to use the story as a representation for the idea that change and evolvement are gambles that men and fish both indulge in. This left me with a blank mind, unable to probe curiously the fact that there is no logical explanation for evolution.

Yours truly,

Betty Hansen

Subsequent discussion of the book was livelier, more to the point, less of a struggle, and more beneficial once momentum had been started. I didn't get twenty-seven brilliant papers (this is the real world), but neither did I get any disasters. Everyone approached the final assignment with a reasonable interpretation of the book and a sense of what a critical review should be, and traces of tire marks from the biopoem exercise ran through each. Best of all, each paper, good or bad, had an individual tread pattern. Each had made a personal contribution to the class's evaluation of Eiseley's book and had proudly incorporated it into the paper. A big improvement over the past when I'd found, all too often, a parroting of ideas I'd suggested as possibilities.

The practice of having students do work that the teacher may never see or grade presents philosophical hurdles for many of us. At least it did for me in the years before my enlightenment. Somehow I felt that if students were asked to spend their time writing, I owed them my time to read (and grade) their work. My classes seesawed between the only two miserable choices my fears and guilt offered: They either wrote frequently for a much over-worked crank, waiting days for my nonetheless hurried responses to their work, or they wrote too infrequently for a more relaxed teacher who returned graded papers within a day or two. While I kept no record to compare, subsequent reflection leads me to suppose that those students who wrote profusely with delayed feedback must have progressed farther than those who wrote less often and received infrequent tender loving care. In writing, at least, constant practice improves fluency. Whether that principle applies to the content of math, history, science, or any other subject, I'm not prepared to say.

Long discussions with my colleagues left my dilemma unsolved but led to deeper layers of concern. I finally dug through them to the fundamental question of just what it was I thought I was teaching. Or, more aptly phrased, what was it my students were supposed to be learning? Could I pinpoint a particular novel, for instance, that was a necessity for their lives? Which one would it be? Or which two or three or ten? Why had we chosen the ones we teach, out of all the good ones available? Which poems or poets were necessities, ignoring any possible cultural veneer we might give our students? (How many of us, much less of them, have ever made or would make sophisticated small talk about T.S. Eliot at a cocktail party?) Realistically, did our choices of curriculum matter? Assuming selections that represented quality, the answer seemed to be "No," followed by the, to me, inevitable conclusion that I wasn't teaching literature in the sense of specific content. Rather, I was trying to teach how to enjoy, understand, and criticize literature. In a word, process.

Are process skills as necessary to other subjects as they are to writing and literature? I think an argument can be made that they are, at least partially as important. In math, for instance, we don't teach answers, because an infinite number of answers exist for an infinite number of problems. We teach process: how to find an answer. I recognize that there will be a specific answer to a specific problem if the correct process is used, but I also know many math teachers who give partial credit to a student's work when the answer is wrong because of inaccurate computations in a correct process.

What do we really teach in history? Facts? Many of us think so, do so, and bore students, who promptly forget them. But what of permanent value do we really want history students to carry away from the class? Isn't it an ability to take a set of historical facts and from them

discover cause and effect? Even more basic, isn't it the ability to distinguish between fact and opinion? In other words, to master processes that enable them to make sense of the events that have shaped their world.

What about one of the practical subjects, like home economics? There, process is all. How ridiculous to think one could possibly anticipate all the recipes or patterns a student would want to use in a lifetime. Many of them don't exist yet. What teachers give their students is knowledge of processes that can be applied, with luck, infinitely. The same holds true for shop courses. Seldom would even a freshman want to duplicate the well-made but bizarrely shaped cutting board that ended up as Mother's Christmas present. She certainly doesn't want another one, and probably no one else in the student's life will ever be so doting as to accept one with good grace.

The essence of art is creativity. That precludes rote repetitions and duplication. The art teacher has no choice but to teach process. Anything else is not art—mass production, maybe, but not art. And I would argue that science education is by and about process. Experiments are processes, most frequently to discover other processes. Experiments rise from questions. The art of devising questions that lead to evocative experiments is a matter of process. And certainly the necessary step of evaluating the experiment depends on a process of further questioning.

My real conviction is that the most valuable thing we can and do give our students in any subject is knowledge of how to learn it. Furthermore, we must make them confident enough of their ability so that they learn and ultimately perform as they choose.

In short, they must be weaned. God forbid that either they or we should remain permanently fixed in the student-teacher roles we have in the classroom. At some point the student will have to decide alone whether the joint really is securely glued in a perfect right angle, whether the tax return is correctly computed, whether the letter of application is impressive enough to earn an interview. If we've taught students to make these decisions, they all will be. The ultimate process, the one on which all others depend is self-evaluation.

Have you ever noticed that often when students are handing in a test or other work they slip their papers somewhere into the middle of the pile? They seem to feel embarrassed or threatened at the thought of having you see their work while they're standing right there, or even sitting in the same room. They *know* you will eventually read it, but somehow they think their direct responsibility for it evaporates when you read it in some remote place like the faculty room or your home. They can put a distance between themselves and those marks or numbers or words they authored; judgment won't take place in their world, only in yours. I can sympathize with that behavior because it was the pattern of most of my education. One of the bravest things I ever did was to turn a term paper in early (out of direct necessity, believe me). I knew it would remain distinctively my work, and for once I couldn't run away from my responsibility of authorship. It was frightening, having judgment passed while I was aware of it. That same fear lay behind my initial reluctance to be thrust into the world of peer evaluation in a writing group. How embarrassing to have to read my words aloud to a live audience. But that's where I learned. First of all, that my peers were more helpful than I'd ever found a teacher to be. Second, that since they didn't, after all, have final judgment, I was free to accept or reject their advice. That led me to making conscious decisions on my own, sometimes to please them, sometimes to impress them, which is what I have to do in my real-life audiences. I'm grateful for the practice. So will your students be.

Look at this familiar scene. One boy leans across the aisle and whispers, "What'd you get for number three?" Is that student cheating? No, not if he already has an answer on his own paper. He's just doing what he most needs to do, getting support from a friend before he dares risk having you judge his work. And what if Mary's answer isn't the same as his? They'll argue, or compare processes, to see which one of them is right. That is, if you don't catch them at it and take their papers away. You probably have to if it's a test, but you shouldn't if it's just class work. You showed them how to do it, but they'll teach each other.

If it's been a test you've monitored so well that no one has had a chance to counsel with another, follow the crowd out the door and listen. Ignore "That was a bitch! I know I flunked!" and "Jeez, how unfair can Mrs. West get?" Catch, instead, things like "What'd you put for that question about style?" or "Were we supposed to apply that latest theorem on the last problem?" They're too impatient to wait to find out what an abstract thinks about it when you grade their papers. They want their fears confirmed or destroyed right then by someone whose opinion really matters: their peers.

Much of this typical activity is bravado, of course. Or consolation, or ritual. It's so pervasive, however, that we ought to take note of it. Obviously, what their peers think matters terribly. Shouldn't we be taking advantage of this? We don't have a monopoly of bright ideas and original thoughts, and our opinions certainly don't command the respect nor carry the value that those of their peers do. Students will accept criticism from their peers they won't take from us (or that we can't say). Let's make that work for us—not to relieve our paper load, but to help them learn. We can use it as the first step in weaning them from dependence on our judgments to confident self-evaluation.

But to make our peer evaluation work for them we have to clearly distinguish for ourselves and them the difference between formative and summative evaluation.

I like the word *formative*. The notion of shaping pleases me. First of all, something is being shaped, is growing, becoming. I can see the blob of dough flattening, stretching, thinning, rounding, sometimes sticking to the rolling pin. I have to scrape it off, sprinkle just a tad more flour onto the emerging crust, push a little chunk into the hole torn out, re-roll the patch. If it's for a bottom crust, I don't care. If it's for the top crust, I devise a pattern of steam-slashes to conceal the error. Or I let it go and say it doesn't affect the taste. At least, that's what I hope my family and guests will say. Besides, if I serve the pie from the kitchen and give the funny piece to myself, no one will ever know. A formative process. Not final, I had choices. I had remedies. I could even have wadded the whole thing up and started over, hoping for perfection the second time. Making my crust, I was my own critic, my own formative evaluator.

Recall a paint job you have done. Most likely you were annoyed when your spouse, friend, neighbor, or roommate called your attention as you worked to a spot you'd missed. But you fixed it, didn't you? Weigh that against your annoyance with yourself or someone else who points out that spot after you've finished, cleaned up, put the furniture back, and the paint has dried. That's summative evaluation in its most discouraging form. And most avoidable.

Students don't know these things consciously or automatically. At the very least their attitude about you and the course will improve if you can outline for them, step by step, all the check points along the way. How often should they step down from their stepladder and back off to get a different perspective on the paint job? From what angles should they look at it to see it in different lights? What brush techniques can they use so that the patch won't show? Would it be efficient and helpful to have someone else do the looking too? Maybe that's the best way to start. It's always easier to examine someone else's work than to examine our own. And once critical of others' mistakes, we're a little more cautious about committing the same ones ourselves. Clever as we may think ourselves, we can't instinctively avoid all possible errors—at least not at one time, on one project. How helpful to be forewarned. How comfortable to know we have a chance to spot and correct them, that we know how to.

Let me give you some examples of formative evaluation from my own classes. The subject is English, of course, but you can translate as you will into social studies, science, or whatever. Because I work in a twelve-week trimester, I don't always have time to develop the sense of

community that is so essential to effective writing groups. Occasionally the class chemistry is right from the beginning, and students readily read their work in their groups. More often, they are reluctant, as I was. When that happens, I simply photocopy assorted anonymous samples of the drafts during the revision process, give everyone a copy, and have the class follow along as I read aloud. Response is inevitable and highly instructive. A page greeted with dead silence tells the writer worlds about the piece. No one reacted to it. It was dead, pointless. When pressed for reasons for their silence, students will give answers like "I don't get it," "It wasn't interesting," or "Who cares?" I can direct them to specifics by asking what's missing, what, if anything, they've been shown (not told), what they'd say if they'd written the piece. These suggestions and responses are seriously noted and often incorporated into subsequent drafts. Shortcomings of spelling, punctuation, and handwriting are always resented and vociferously pointed out. A display, perhaps, to let me know they know what's correct. When such shortcomings present real handicaps to understanding, I second the motion. Occasionally, a student will ask why his or her paper has never been duplicated, and if, as is usually the case, I say that it was too messy and illegible, you can be sure I get a neater draft the next time.

I'd asked a class at one point in a sequence of writings to write a letter to the school board giving their suggestions for improving the school. Among the usual collections of requests for less homework, better parking space, no attendance rules, and the like, was a model of precision and correctness. The draft began along these lines: "Dear School Board: I think (our school) is a very fine one with an excellent educational program." On it went for a page and a half error-free. My reading of it was greeted with silence, broken finally when an anonymous voice in the back of the room muttered, "It sounds like an advertisement." It did, and I'd been wondering how I could suggest that without destroying all the writer's illusions and securities about correct writing. Other papers had said a few nice things too, but more colorfully with more voice. In the discussion that followed, even the school's critics admitted that some people like the school and have a right to say so. What they objected to in this paper was the formal flattery they heard. The final draft was an improvement-not great, but an improvement.

Positive reinforcement comes just as freely as negative criticism, and more spontaneously. A smothered gasp at an unexpected image, a guffaw at an outrageous point of view, an absolutely rigid silence as everyone reads along, engrossed, tell the writer how well the audience has been captured. Thinly disguised students or teachers who figure in the piece are identified out loud at the clue. I don't have to ask for expla-

nations, although I do, forcing the readers to find the exact words that prompted their reactions, asking them what was unexpected, and so on. They become better critics themselves, knowing precisely what moved them, and the writer learns what it was that worked so well. Highly imitative, they'll pepper the next batch of papers with the kinds of things their peers did successfully this time.

After a few rounds of this kind of critiquing, the number of requests for suggestions for improvement of early drafts increases. Self-evaluation is beginning to operate. Sometimes students compare the present project with an earlier piece of their own; sometimes I get a request for ideas to make it work the way someone else's did. I know that peer evaluation works when they write two- or three-sentence **admit slips**, and I see students passing theirs around before I collect them. They're eager for reaction, and obviously expect an appreciative one or they wouldn't have dared pass it across the aisle. The flow of stupid, obscene, or beside-the-point responses dries quickly to a trickle when the thoughtful, clever, imaginative ones get read, posted, and discussed by students from other classes. As being "published" for their peers' enjoyment and edification becomes important, the quality of work rises.

Encouraging Thinking

So far I've talked about peer response to performance, a step in the process of production. What I'm also beginning to realize is that peer response can be directed to encourage thinking. Recalling and analyzing class discussions of literature, I realize that they have seldom become much more than arguments. Students weren't generating creative ideas or exploring the possibilities others' ideas open up.

But after I started using some writing-to-learn techniques, I found an explosion of peer interaction and evaluation. The day my sophomore mythology class read, in *The Iliad*, Homer's description of the shield Hephaestus made for Achilles, we spent some time analyzing the various scenes in the five concentric circles of the shield. Then I asked them all to list the scenes that would be on such a shield if it were to be made for an American today. In discussing the wedding picture, we had decided that it was symbolic of a cultural ritual and that the modern shield didn't necessarily have to show a wedding to be analogous. Once the lists had been completed, circle by circle, we started sharing. Contributions flew so fast I soon ran out of blackboard, and I know some great suggestions were lost in the shuffle. Many were greeted with laughter, a few with brief applause and most importantly, were generated after the fact, so stimulating were the responses. A few were challenged. One memorable one came from two girls who'd spent a large part of the working time in deep cahoots in the back corner. They had a novel idea for the wedding scene and couldn't wait to share it. My astonishment was visible when they announced they'd put a picture of people going to the bank in that section of their shield. What a defense they made for the idea! It was a "ritual" that almost everyone practiced, part of our spending-oriented culture. The class realized that the idea had come from a different application of the word "ritual." The two girls had used it in its meaning of "habitual." Everyone else (and I) had taken the word to mean a "rite," even "celebration." And we were off on word meanings and connotations, with enthusiasm running high.

And at the end of that class, one boy lingered to say what fun all the "off-the-wall ideas" had been. I'd enjoyed it too, obviously, and didn't realize until later what had really happened. I'd been using the class as my guinea pigs to try out the exciting list of writing-to-learn exercises I'd developed into a set of lesson plans in a summer workshop. The class had enjoyed them, and an almost daily question had become, "What off-the-wall thing will we do today?" Biopoems, dialogues, guided imagery, etc., had been as novel to them as to me. But go back to the beginning of this paragraph and read exactly what the boy had said. The fun was no longer in my assignments but in their responses. They'd begun competing and feeding off each others' creative energies.

I found, too, that self-evaluation of learning style, progress, and work habits can be as important to a student as evaluation of work when, halfway through a six-week term paper project I panicked, again from awareness that I didn't know what it was my students needed to know in order to learn the term paper process I was trying to teach them. In a flash of combined inspiration and desperation, one day, I asked the class to take a few minutes and write unsent letters to themselves about their progress: How far along were they? What else did they need to research? When had they last spent serious time on the project? What was worrying them? What didn't they understand? What did they want me to explain again? What a wonderful marriage of writing-to-learn and self-evaluation techniques it proved to be! They seemed delighted with the assignment, and wrote busily for a long time. I neither asked nor expected them to share their letters with each other, and I certainly didn't want or expect to see them. Sharing took place privately, however, and I got instant feedback on what a relief it was to have to pinpoint their individual problems and shortcomings. And I certainly received clear and specific requests for further instruction. A few, amused as well as helped by the exercise, insisted on showing me their letters, and just about everyone thanked me. Most major

bottlenecks in term paper production were removed, and I was able to program the next few days of instruction to fit students' needs. Again, I didn't get a brilliant set of final papers, but for the first time ever, all papers were handed in on time, and all had, however imperfectly, followed directions. I had never asked students to evaluate their papers before, and I am convinced that it made the difference.

Admit slips are great for this student review, too. I use them regularly for review before a test. I ask students to write something they don't understand and want explained. Or I ask them to write an essay question they know they couldn't answer. This forces students to confront their own misgivings and problems. And by the time each slip has been read by me and answered by other students (or by me, as a last resort), we've had a full period of thorough review of the things they need to have reviewed. It was their lesson, not mine.

I worry lest a reader see my advocacy of peer and self-evaluation as a thinly-veiled device to shift the burden of paper-grading from me to my students. I certainly didn't intend the title of this to imply that student evaluation was the route to a lighter teaching load. Instead, I see the practice as an integral part of many writing-to-learn activities, done purposely to teach important skills. Students assess their own and others' work as it's developing, helping each other to generate, assimilate, and expand knowledge: to find personal direction in their learning. Formative peer evaluation is reaction and suggestion, not judgment. Evaluators benefit, learning to be constructively critical, to appreciate process. Those being evaluated learn responsibility for their work. When they evaluate themselves, they develop the sense of control over their work that is necessary for pride in it.

Finally, the question of grades, of summative evaluation. It must be done. I belong to that legion who love to lament, "Oh, if only we weren't forced to give good grades! If only school weren't such a competitive system." Phooey! Grades are as realistic as all the other final criteria life imposes on us. We will or won't get the job, the promotion, the girl or boy. Even my pie, the crust so lovingly formed, will or won't be edible. Someone, sometime, will pass judgment on our actions and products. My premise here is that our evaluation as teachers will be more useful, easier, and fairer if what we're grading has first passed muster, as it developed in the eyes of the students themselves. One enormous caveat is essential. Peer and self-evaluation will be meaningless if students themselves have no criteria or standards on which to base them, no yardsticks to measure by; our summative evaluation will be arbitrary if we don't use the same yardsticks. We must supply these measurements, and at the beginning of the process. That's what teaching is. We

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have to supervise and direct the peer evaluation to see that no one has lost or switched yardsticks along the way. The chances of that happening decrease when we invite our students to help design them, let them help set the standards. Yes, we're obligated to stick to content. Yes, our curriculum represents the wisdom of scholars. But also yes, we can engage students in deciding how they can best learn it, how their performance can best be judged. Peer evaluation shows them and us how they're learning as well as what they're learning.

With so much going for it, I'm embarrassed to think how long it took me to discover peer evaluation. I knew, with a kind of desperation, that my students would be weaned (if only by graduation) and only by happy circumstance would have a college roommate, a secretary, or a spouse to do for them what I'd been doing-showing them the weaknesses and errors in their writing. I also knew I hadn't provided them with enough tools or practice to do the job for themselves, to be their own evaluators. Now I feel more confident that these vital dimensions are being added to their education, largely through use of writing-tolearn exercises, which frequently require sharing and peer response. It has benefits for me, too. I can and do assign more work in smaller chunks, while actually decreasing my paper-grading load, because most of the small assignments lead to formative evaluation. Both my students and I know more clearly what I'm looking for when I grade the final product. I have a much clearer idea of the quality to expect when I read that product. Best of all, they've learned more: about the subject, about themselves, and about learning.