

# PROBLEM- SOLVING AND REFLECTIVE THINKING: JOHN DEWEY, LINDA FLOWER, RICHARD YOUNG

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Some years ago when I was a new instructor in the composition classroom seeking my own mentors and given to looking for essays my students might read and relate to their own intellectual and emotional experiences, I found an essay by Loren Eiseley entitled "The Mind as Nature." In it Eiseley refers to the works of John Dewey as his own inspiration for teaching. He quotes often from Dewey, and at the conclusion of this essay about teaching and learning, he writes:

We are, in truth, sculptors in the snow, we educators, but thank God, we are sometimes aided by the wild fitfulness which is called 'hazard,' 'contingency,' and the indeterminacy which Dewey labeled 'thinking.' If the mind is indigenous and integral to nature itself in its unfolding and operates in nature's laws, we must seek to understand this creative aspect of nature in its implications for the human mind. (224)

I was a fledgling instructor confronted with the mystery of the classroom, of seeking the creative, the intuitive in my students. How could I release this creativity, the potential of the human spirit in each of these students? They had experienced only texts made up

of rules, prescriptive primary and secondary education with emphasis on the perfection of form at the expense of individuality. I saw the five-paragraph essay written as if it were an exercise in “fill-in the blanks,” and I detected a weariness and boredom in my students who were performing rather than learning.

At the same time new texts were arriving with regularity. I was not a solitary figure on the rhetorical landscape seeking effective ways to approach composition; a shift in emphasis was taking place. Research in psychology, linguistics, and rhetoric was opening new territory claiming, and rightfully so, that learning and thinking involve process. Our students must move away from primary concern with product and look to *what* happens as they think and write. In other words, we as teachers must begin to study the *how* of thinking and writing. We must “abjure the inculcation of fixed conclusions at the expense of man’s originality” (Eiseley 203).

Eiseley’s paraphrase of Dewey stayed with me as I became familiar with the rhetoric texts sent to me every semester by a host of publishers. I noted the changes in texts such as *The Writing Commitment*, which went through three editions from 1976 to 1984, and *Writing With a Purpose*, which went through seven editions from 1950 to 1975. I was struck by the change in emphasis in early process texts such as Jim Corder’s *Contemporary Writing: Process and Practice*, 1979, and Maxine Hairston’s *A Contemporary Rhetoric*, editions in 1974, 1978, and 1982.

The next step in my own confrontation with process versus product was to listen to the nagging voice in my mind which directed me to reread Dewey’s *Logic: The Theory of Inquiry and How We Think*. I discovered that I was engaging in what Dewey generally calls “reflective thought,” that I was attempting to make connections between what I knew, what I had read, and what I *felt* about the teaching of composition. I had already established, in Dewey’s terms, conditions which aroused and guided my curiosity; now I had to find the method “of setting up the connections in things experienced” to promote, on later occasions, the flow of suggestions; to create problems and purposes; and to allow for the succession of ideas (56).

My curiosity was guided by the several texts I have mentioned, but I was still looking for the method which would most closely bind Dewey to the contemporary rhetorical stance. I found that method first in Richard Young’s contribution, *Rhetoric: Discovery and Change*, and then in Linda Flower’s *Problem-Solving Strategies for*

*Writing.* Flower tells her reader, the student writer, what writing and thinking entail: "Make meaning. First . . . make sense out of complex situations, and do so in words. Intuitive understanding is not enough. A writer must use language to make meaning: that is, to name key issues, to describe their interrelationships, and turn the sense of the whole into concepts expressed in words" (4). Flower defines writing primarily as problem-solving. "Often," she writes, "a problem is a situation that occurs when you are at Point A but you want to be someplace else, at Point B, and there is an obstacle in your way . . . a problem is only a problem for *someone*; it is not an impersonal situation waiting for a solution. A problem only exists when someone feels a conflict or dissonance" (19-20).

Young also tells his students that problems do not exist independent of individuals, that there are only problems for someone.

A person's image of the world is composed of attitudes, values, beliefs, and various kinds of information, all of which combine to form an exceedingly complex, more or less coherent system. Problems arise when features of the image are perceived to be inconsistent with one another, to clash in some way . . . when he discovers something in the nature of the world doesn't 'fit' his conception of it . . . When a person becomes aware of such an inconsistency, he finds himself in what might be called a problematic situation. The uneasy feeling that accompanies this awareness is characteristic of the earliest stages of inquiry. (90)

Dewey tells us specifically that thought involves dissonance, a sense of incongruity, and it is the writer's task to "transform a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort, into a situation that is clear, coherent, settled, harmonious" (100-101).

All three give examples of problematic situations. Dewey begins by offering a simple case which enables us to understand how inquiry works as the inquirer moves from awareness of a problem to its solution.

Suppose you are walking where there is no regular path. As long as everything goes smoothly, you do not have to think about your walking; your already formed habit takes care of it. Suddenly you find a ditch in your way. You think you will jump it (supposition, plan); but to make sure you survey it with

your eyes (observation) and you find that it is pretty wide and that the bank on the other side is slippery (facts, data). You then wonder if the ditch may not be narrower somewhere else (idea), and you look up and down the stream (observation) to see how matters stand (test of idea by observation). You do not find any good place and so are thrown back upon forming a new plan. As you are casting about, you discover a log (fact again). You ask yourself whether you could not haul that to the ditch and get it across the ditch to use as a bridge (idea again.) You judge that idea is worth trying, so you get the log and manage to put it in place and walk across (test and confirmation by overt action). (105)

Note that in this example, as in examples for students in both the Young and Flower texts, the focus of problem-solving is on choices to be made, given the situation, the alternatives presented, and the data available. All three would agree that inquiry, whether it be problem-solving (Flower), tagmemic invention (Young), or reflective thinking (Dewey), allows the thinker/writer to make order out of incongruity and dissonance. The writer can clarify for him/herself and discover content by putting words on paper.

Dewey outlines the entire discovery process in chapter seven of *How We Think*:

#### Five Phases, or Aspects, of Reflective Thought

(1) *suggestions*, in which the mind leaps forward to a possible solution; (2) an intellectualization of the difficulty or perplexity that has been *felt* (directly experienced) into a problem to be solved, a question for which the answer must be sought; (3) the use of one suggestion after another as a leading idea, or hypothesis, to initiate and guide observation and other operations in collection of factual material; (4) the mental elaboration of the idea or supposition (reasoning, in the sense in which reasoning is a part, not the whole, of inference); and (5) testing the hypothesis by overt or imaginative action. (107)

Dewey's approach to thinking as process belongs with the later rhetorical methods where psychology, linguistics, and speech theory also find their place. Thus it is that Flower, who presents us with six steps to analyze a problem, and Young, who gives us tagmemics with its organized grid of particle, wave, and field, come so close theoretically and practically to John Dewey.<sup>1</sup>

Let us recognize early in our discussion of the five stages of inquiry that Dewey, like those who come after him, does not see this movement as linear; rather, he declares it recursive in nature:

Inquiry is not like a race and the beginning of inquiry is not the line that is left behind at the top of the gun. With every step taken in the course of inquiry there is a new beginning issuing from a new ending; but beginning and ending do not follow upon each other—they intercept and unite. In walking along the right foot does not follow upon the left—both are working through the whole stride. What is an ending or a beginning depends upon the functional position as determined within the moment of inquiry. (Ratner 212-213)

In other words, the thinker/writer moves with his material, his data, whenever new information or conflicting evidence occurs to change or modify a working hypothesis, “Partial conclusions emerge during the course of reflection. . . landings of past thought are also stations of departure of subsequent thought. . . . At every such landing stage it is useful to retrace the processes gone through. . . . Thus premises and conclusions are formulated at the same time in definite relation to one another . . .” (Archambault 245-246). Both Young and Flower simplify this concept for students as they, in their texts, show how form arises from things known and unknown, from data, from ideas, leading to conclusions derived only from controlled and directed inquiry. Form should not be imposed by the teacher; it should come from the process of discovery in which the student involves him/herself.

There are, of course, differences between the methodology espoused by Dewey and the methods of Flower and Young. Perhaps Dewey does not allow for as much imaginative or intuitive space as the others do, but he, too, knows that ideas do not always follow an orderly course when he asserts that “there is no single and uniform power of thought, but a multitude of different ways in which specific things—things observed, remembered, heard of, read about—evoke suggestions or ideas that are pertinent to a problem or a question and that carry the mind forward to a justifiable conclusion (55). Dewey speaks little of intuition; Young gives it primary importance in the incubation and illumination stages of composing. “The preparation stage is followed by a subconscious period of activity that is somewhat mysterious and hard to discuss explicitly” (73-74). Further, Young states that problem-solving is not possible by means

of analytic procedures alone. And he sees illumination as a result of subconscious activity tempered by considerable knowledge of the subject matter involved. So he declares when he gives examples of illumination and insight as they came to two famous men—Charles Darwin and Henri Poincare (74-75). Using Poincare's journal, Young describes inquiry as a dialogue between reason and intuition.

Although Dewey puts much more emphasis on reason, it is doubtful that he would quibble about the role of intuition as an active force in the inquiring mind. If a person were to use tagmemic invention to lead to a hypothesis, then that person would, indeed, be operating effectively in Dewey's terms as well—the thinking would be controlled and specific; the method exact:

A person. . . thinks logically when he is careful in the conduct of his thinking, when he takes pains to make sure he has evidence to go upon, and when, after reaching a conclusion, he checks it by the evidence he can offer in its support. . . a bungler can make a box, but the joints will not fit exactly; the edges will not be even. A skilled person will do the work in a way that does not waste time or material and the result is firm and neat. So it is with thinking. (76)

Recognition of a problem is important to Dewey, Young, and Flower. All are educators; each of the three, it seems, hopes to instill in his/her students sensitivity to the social and political problems of their cultures; all are aware that for many students the easiest way to get through is to ignore or deny present problems. Flower's text works on the assumption that there are problems to be solved in the lives of each individual in and out of the classroom. Young's work speaks directly to the student who would rather not recognize problems; who would, essentially, rather not reflect. What he says to these students is of lasting importance:

Because many of us have come to believe that having problems is evidence of a personal deficiency we may often be reluctant to acknowledge them, particularly intellectual problems in the classroom. Yet it is the perceptual and knowledgeable person who most often has problems; it is the best student who sees the limitations of human understanding and the need for inquiry in every aspect of human affairs. The existence of a problem does indicate inadequacies of some sort, but it is more profitably seen as an opportunity to be seized,

as a state from which growth and productive change can come. Uneasiness is the seed from which subsequent investigation grows; ignore it and the process of inquiry may never begin. (91)

Young's words reverberate with Dewey's; it is almost as a chorus that they speak: "When a situation arises containing a difficulty or perplexity, the person who finds himself in it may take one of a number of courses. He may dodge it, dropping the activity that brought it about. . . . He may indulge in a flight of fancy, imagining himself. . . in some way in possession of the means that would enable him to deal with the difficulty. Or, finally, he may face the situation. In this case, he begins to reflect" (Ratner xvi).

When Dewey describes his second stage, Intellectualization, he once more rings the notes that Young plays so successfully some forty years later. A question well-put, he maintains, is half-answered; a question well-put is located in time and space. In the words of Young, "a well stated unknown greatly increases the efficiency of an inquiry, for it frequently carries with it hints of a solution and even suggests a hypothesis (95-96). And Flower joins the song in harmony maintaining that the definition of a problem contains the method for resolving that problem. Young and Flower give specific methods and sets of questions for locating a problem in a particular context; Dewey does not. He merely sets forth the process without the specifics which later rhetoricians have been able to provide through the use of tapes, transparencies, interviews, and several technological advances not available to Dewey. No doubt John Dewey would have been pleased, after all the controversy surrounding him and his theories of education, to find his theory elaborated, verified, and vindicated by a later generation of teaching scholars.

The fourth stage—exploring the problem or reasoning to reach an hypothesis—involves observation, study, and combination or recombinations of data for Dewey, Flower, and Young. The latter two, as I have stated, present rigorous procedures for organizing the data. Young has his students look at that data from three perspectives—particle, wave, field. Each of these looked at successively puts the problem into a larger context and allows the student to work with qualitative and contrastive features of the data. Flower advises the exploration of parts of the problem with shifting operational definitions as the problem clarifies itself in a defined context. Dewey generalizes, admonishing the thinker/writer not to ac-

cept a suggestion in its first form because that will prevent him from looking into the problem more thoroughly: "Conjectures that seem plausible at first sight are often unfit or even absurd when their full consequences are traced out. . . . The development of an idea through reasoning helps supply intervening or intermediate terms which link together into a consistent whole elements that at first seemingly conflict with each other . . ." (112).

Reasoning, the use of the mind as a critical tool to find answers to questions in a controlled and directed manner, is at the core of the writing process for Flower and for Young and at the core of the thinking process for Dewey. Intellection becomes the mark of the critical and curious in our society; it is responsible for an informed citizenry, an educated people, and it the use of intellectual powers which must be taught to our students so that they may discover their own ability to express ideas, to shape them, and to create unified arguments unique to them and important to others.

The last step in the process is "testing the hypothesis by action to give verification" for Dewey, "Verification: evaluating hypothesis" for Young, and "Coming to a well-supported conclusion" for Flower. All would agree that in testing or evaluating hypotheses, a mistake can be found, a wrong turn discovered, or a missed bit of data uncovered. This will mean a step backward for the writer/thinker and a possible revision or rethinking of his/her material. Every student writer should know that if he/she engages in this four, five, or six step process, learning will occur. The mere possession of the skills of problem-solving, of tagmemics, or of patterns of inquiry is of value because it allows for and encourages further critical thinking. If a hypothesis does not test out—cannot be verified, the student must be made to realize that he/she has not experienced failure.

A great advantage of the habit of reflective activity is that failure is not *mere* failure. It is instructive. The person who really thinks learns quite as much from his failures as his successes. For a failure indicates to the person whose thinking has been involved in it, and who has not come to it by mere blind chance, what further observations should be made. . . . It either brings to light a new problem or helps to define and clarify the problem on which he has been engaged. Nothing shows the trained thinker better than the use he makes of his errors and mistakes. What merely annoys and discourages a person not accustomed to thinking, or what starts him out on a new course of aimless



attack by mere cut-and-try methods, is a stimulus and guide to the trained thinker. (114-115)

The texts of Young and Flower devote themselves to training students as thinkers; both want what Dewey wants—perceptive human beings who can engage in reflective habits of mind, learn to express themselves with confidence, and believe that what they have thought and expressed is of value to themselves and to others, even to their peers in the classroom. Dewey, I think, speaks not only for himself, but for Young, for Flower, and for many other teachers of writing who practice in our high schools, colleges, and universities today. He may even have been aware of his own possible effect on the future when he wrote: “It has been suggested that reflective thinking involves a look into the future, anticipation, or prediction. . . every intellectual suggestion or idea is anticipatory of some possible future experience, while the final solution gives a definite set toward the future. It is both a record of something accomplished and an assignment of a future method of operation . . .” (117).

No doubt Dewey’s *Theory of Inquiry* did involve a look into the future; he joins many great rhetoricians of an earlier past (Aristotle and Quintillian, for example) who also offered us insight into the future—into the NOW with its challenge to facilitate writing and thinking, to make them rewarding activities for those who wish to learn: the students in our classrooms. We must eschew the “mechanical and routine,” we must do away with any “burden of information which is useless unless it is understood” (77-78). And this means for Flower, Young, and Dewey that understanding, through reflective habits of thought, is the comprehension of various parts of information acquired, or experienced, as they relate to one another.

Eiseley was right—“we must abjure the inculcation of fixed conclusions at the expense of man’s originality.” For Dewey, for Flower, for Young, and for me, this is a truth—a conclusion reached after engaging in reflective activity, after working with the known and the unknown, after experiencing the awareness of a problem—a felt difficulty, a dissonance—after working through the problem and testing the hypothesis. Our mutual conclusions: give students a process—a method for reaching conclusions and solving problems, allow them to become familiar with their own minds and hearts, give them the courage to engage in confrontation, and let them come to their own conclusions with integrity, individuality, and imagination.

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## NOTE

<sup>1</sup>See Flower, 21-27. There she elaborates on the following six steps in analyzing a problem: 1) define the conflict or key issue; 2) place the problem in a larger context; 3) make the problem definition more operational; 4) explore parts of the problem; 5) generate alternative solutions; 6) come to a well-supported conclusion.

## WORKS CITED

- Archambault, Reginald, ed. *John Dewey on Education*. New York: Random House, 1964.
- Dewey, John. *How We Think*. Lexington, Mass.: D.C. Heath and Company, 1933.
- Eiseley, Loren. *The Night Country*. New York: Charles Scribner Company, 1971.
- Flower, Linda. *Problem-Solving Strategies for Writing*. New York: Harcourt, Brace, Jovanovich, 1981.
- Intelligence in the Modern World: John Dewey's Philosophy*. Introduction. Ed. Joseph Ratner. New York: Random House, 1939.
- Young, Richard E., Alton L. Becker, and Kenneth Pike. *Rhetoric: Discovery and Change*. New York: Harcourt, Brace, Jovanovich, 1970.