

Defining Reflection: Another Look at John Dewey and Reflective Thinking

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Thinking, particularly reflective thinking or inquiry, is essential to both teachers' and students' learning. In the past 10 to 15 years numerous commissions, boards, and foundations as well as states and local school districts have identified reflection/inquiry as a standard toward which all teachers and students must strive. However, although the cry for accomplishment in systematic, reflective thinking is clear, it is more difficult to distinguish what systematic, reflective thinking is. There are four problems associated with this lack of definition that make achievement of such a standard difficult. First, it is unclear how systematic reflection is different from other types of thought. Second, it is difficult to assess a skill that is vaguely defined. Third, without a clear picture of what reflection looks like, it has lost its ability to be seen and therefore has begun to lose its value. And finally, without a clear definition, it is difficult to research the effects of reflective teacher education and professional development on teachers' practice and students' learning. It is the purpose of this article to restore some clarity to the concept of reflection and what it means to think, by going back to the roots of reflection in the work of John Dewey. I look at four distinct criteria that characterize Dewey's view and offer the criteria as a starting place for talking about reflection, so that it might be taught, learned, assessed, discussed, and researched, and thereby evolve in definition and practice, rather than disappear.

The essential point—the inner intent—that seems so seldom grasped even by teachers eager to embrace the current reforms is that in order to learn the sorts of things envisioned by reformers, students must think. In fact, such learning is almost exclusively a product or by-product of thinking.

Thompson & Zeuli, 1999

Thompson and Zeuli's words are as true for teachers as they are for students. In the past 10 to 15 years, numerous commissions, boards, and foundations, among them, the National Board for Professional Teaching Standards (NBPTS, 1987); the National Commission on Teaching and America's Future (NCTAF, 1996); the National Foundation for the Improvement of Education (NFIE, 1996); the National Staff Development Council (NSDC, 1995), and states and local school districts, have identified reflection/inquiry, what Thompson

and Zeuli would call thinking to learn, as a standard toward which all teachers and students must strive. The NBPTS's fourth proposition of accomplished teaching is exemplary of many of these standards: "Teachers must be able to think systematically about their practice and learn from experience. They must be able to critically examine their practice, seek the advice of others, and draw on educational research to deepen their knowledge, sharpen their judgment, and adapt their teaching to new findings and ideas" (National Commission on Teaching and America's Future, 1996).

However, although the cry for accomplishment in systematic, reflective thinking is clear, and the logic that students and teachers must think to learn is undeniable, it is useful to revisit what it is we mean by reflection and thinking. How is the kind of thinking that Thompson and Zeuli and the NBPTS call for different from other modes of thought? It is the purpose of this article to bring some clarity to the question of how teachers must think—and reflect—to be able to think to learn. To do so, I return to the work of John Dewey. Dewey is mentioned consistently in books and articles written on reflection, teacher education, and student learning, but an extensive examination of what he actually meant by reflection is missing from the contemporary literature. In fact, over the past 15 years, reflection has suffered from a loss of meaning. In becoming everything to everybody, it has lost its ability to be seen.

There are four problems associated with the lack of a clear definition of reflection. First, it is unclear how systematic reflection is different from other types of thought. Does mere participation in a study group, or the keeping of a journal, for example, qualify as reflection? If a teacher wants to think reflectively about or inquire into her practice, what does she do first? How does she know if she is getting better at doing it? To what should she aspire?

This leads to a second, concomitant problem: assessing a skill that is vaguely defined. With the demand for portfolios, for example, that demonstrate reflective thought and practice, what, exactly, are we looking for as evidence of reflection? Are personal ruminations enough or are there specific criteria that can guide assessment?

Third, without a clear picture of what reflection looks like, it is difficult to talk about it. The lack of a common language means that talking about it is either impossible, or practitioners find themselves using terms that are common but hold different meanings or are different but have overlapping meanings (e.g., reflection, inquiry, critical thinking, metacognition).

Finally, and no less important, without a clear sense of what we mean by reflection, it is difficult to research the effects of reflective teacher education and professional development (e.g., inquiry groups, reflective journals, or book clubs) on teachers' practice and students' learning, an essential question that must be addressed.

An inherent risk in an imprecise picture of reflection is that, in an age where measurable, observable learning takes priority, it is easily dismissed precisely because no one knows what to look for. Or worse, it is reduced to a checklist of behaviors. Dewey reminds us that reflection is a complex, rigorous, intellectual, and emotional enterprise that takes time to do well. He gives us a way to talk about reflection and reflective practice so that it does not fall into disuse and instead becomes richer and more complex as a result of that conversation. He provides us with a touchstone, a taproot, from which the conversation can flow and to which it can return when it gets lost or muddled.

In this article, I look at four distinct criteria that characterize Dewey's view of reflective thought and offer them as a starting place for talking about reflection so that it might be taught, learned, assessed, discussed, and researched, and evolve in both meaning and usefulness. In doing so, I acknowledge the risk inherent in delineating reflection. I do not seek to codify it or cement it or have it added to yet another list of standards to be met and tested. My purpose is, quite simply, to provide a clear picture of Dewey's original ideas so that they might serve as we improvise, revise, and create new ways of deriving meaning from experience—thinking to learn.

DEWEY'S CRITERIA FOR REFLECTION

Nearly 100 years ago, John Dewey articulated his concept of how we think in a book by the same name (*How We Think*, 1910/1933)¹. He identified several modes of thought, including belief, imagination, and stream of consciousness, but the mode he was most interested in was reflection. Nearly a century later the details of his concept of reflection, which, for the purposes of this paper, I will equate with inquiry, are still not familiar. Although his work is frequently cited, with many teacher education programs claiming to turn out reflective practitioners, and although many curricula claim to be inquiry based, a thorough exploration of the process and purpose of reflection as he outlined it is scant or missing altogether. Scholars of Dewey (e.g., James W. Garrison, Maxine Greene, Anthony G. Rud, Jr., Nel Noddings), who tend to be philosophers rather than practitioners, have addressed these questions, but it is not clear that practitioners (i.e., teachers and teacher educators) refer to this literature in constructing their own approaches.

Any student of Dewey knows that an encounter with his prose can be work. In an effort to make his thinking more accessible, I have distilled from his writing four criteria that I feel characterize his concept of reflection and the purposes he felt it served.

These four criteria include the following:

1. Reflection is a meaning-making process that moves a learner from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas. It is the thread that makes continuity of learning possible, and ensures the progress of the individual and, ultimately, society. It is a means to essentially moral ends.
2. Reflection is a systematic, rigorous, disciplined way of thinking, with its roots in scientific inquiry.
3. Reflection needs to happen in community, in interaction with others.
4. Reflection requires attitudes that value the personal and intellectual growth of oneself and of others.

CRITERION #1: REFLECTION AS A MEANING-MAKING PROCESS

This criterion is loaded with several important sub-criteria, each inseparable from the others and part of a coherent, if complex, whole. Connection among pieces that together form a whole, in fact, echoes Dewey's view of reflection. To understand in depth what this criterion means and to arrive at the centrality of reflection, it is necessary to examine its pieces separately. I start with the whole: Dewey's view of the purpose and meaning of education.

It is critical to understand that for Dewey (1916/1944) the purpose of education was the intellectual, moral, and emotional growth of the individual and, consequently, the evolution of a democratic society, the worth of which is measured by:

the extent in which the interests of a group are shared by all its members, . . . the fullness and freedom with which it interacts with other groups, . . . [and the extent to which it] makes provision for participation in its good of all its members on equal terms and which secures flexible readjustment of its institutions through interaction of the different forms of associated life. . . . (p. 99)

Such a society is democratic, Dewey (1916/1944) argued, and needed a brand of education which would give the individual "a personal interest in social relationships and control, and the habits of mind which secure social changes without introducing disorder" (p. 99).

Dewey (1916/1944) defined education as "that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases [one's] ability to direct the course of subsequent experi-

ence (p. 74).” Dewey essentially defines education as a verb rather than a noun. In doing so, he has also given us a definition of learning.

Within this definition, which echoes throughout Dewey’s later works, one encounters the interactions, habits of mind, fullness and freedom, and social relationships articulated previously. In an effort to understand all that is contained in the definition, I will systematically examine the terms contained therein, beginning with Dewey’s notion of experience.

An experience, according to Dewey (1938), can be broadly conceived. It is more than simply a matter of direct participation in events. It could be that, or it could be something as ephemeral as interacting with “objects which [one] constructs in fancy” (p. 43). It could also be the solitary reading of a book or a discussion with others. What is important is that there is interaction between the person and his or her environment. The environment, Dewey (1938) argues, “is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had” (p. 44). An experience, then, is not an experience unless it involves interaction between the self and another person, the material world, the natural world, an idea, or whatever constitutes the environment at hand.

Dewey goes on to point out that because an experience means an interaction between oneself and the world, there is a change not only in the self but also in the environment as a result. The effect is dialectical with implications not just for the learner but for others and the world. Through interaction with the world we both change it and are changed by it.

Interaction, then, is the first important element of experience. The second, which is inextricably linked to the first, is continuity. The concept of continuity is central to an understanding of Dewey’s notion of learning and teaching and is implied by the term “subsequent experience” found in the previous definition. Dewey speaks of continuity on both a broad and a narrow scale. Broadly, it is the march of civilization, what he calls social continuity. “The continuity of any experience through renewing of the social group,” Dewey (1938) writes, “is a literal fact. Education, in its broadest sense, is the means of this social continuity of life” (p. 39). He attributes the advances in science and technology, law, as well as more civilized ways of interacting with one another, to continuity. (The contemporary reader must forgive Dewey’s Eurocentric view of what counted as civilized. He frequently refers to “savages” in contrast to more civilized peoples, words that make us cringe today.)

More narrowly conceived, continuity means something very close to what Piaget meant by schema building. That is, we make sense of each new experience based on the meaning gleaned from our own past experiences, as well as other prior knowledge we have about the world—what we have heard and read of others’ experiences and ideas. Dewey (1938) writes:

What [an individual] has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with the situations which follow. The process goes on as long as life and learning continue. (p. 44)

Interaction and continuity, the elements of experience, are the *x* and *y* axes of experience. Without interaction learning is sterile and passive, never fundamentally changing the learner. Without continuity learning is random and disconnected, building toward nothing either within the learner or in the world.

If experiences are the basis of one's learning, however, they are not necessarily always constructive, or educative, experiences. According to Dewey there are both educative and "mis-educative" experiences. A mis-educative experience is one that "arrests or distorts growth." A close reading of Dewey also conveys that a mis-educative experience leads in a callous, insensitive, and generally immoral direction. He gives the example of a child who learns how to manipulate his parents. The child may in fact become, as many children do, an exceptionally talented manipulator. The child may well demonstrate real, and more refined, skill at getting exactly what he wants from others. The result of such learning does not lead toward growth as Dewey defines it, nor does it contribute to the greater good of society. It does not reveal "new perceptions of bearings or connections," which lead to a broadening of one's moral understanding of self and the world.

A mis-educative experience can also be one that leads someone into "routine action," thus "narrow[ing] the field of further experience," and limiting the "meaning-horizon" (Dewey, 1916/1944, p. 78). Routine action suggests that one acts without an awareness of the effect of one's actions on the environment (including others). One is therefore closed to the impact that the environment might have on him or her. Thus the cycle of growth that results from two-way interactions is halted. Routine habits, Dewey points out, possess us rather than our having dominion over them. The former suggests lack of awareness and self-serving motives; the latter, awareness and the desire to contribute to the larger good.

An educative experience, on the other hand, is one that broadens the field of experience and knowledge, brings awareness to bear, and leads in a constructive direction, toward "intelligent action." It is characterized by forward movement rather than stagnation. Intelligent action is considered rather than impulsive and is shaped by data garnered from experience at one end and one's goal or purpose (one that serves society) at the other. "It is the aim of progressive education," wrote Dewey (1916/1944), "to take part in correcting unfair privilege and unfair deprivation, not to perpetuate them" (p. 119).

Experiences alone, however, even educative ones, are not enough, claims Dewey. What is critical is the ability to perceive and then weave meaning

among the threads of experience. “Experience . . . is not primarily cognitive,” Dewey (1916/1944) asserts. That is, an experience is not the same as thought. Rather, it is the meaning that one perceives in and then constructs from an experience that gives that experience value. An experience exists in time and is therefore linked to the past and the future. “[T]he *measure of the value* of an experience lies in the perception of relationships or continuities to which it leads up. It includes cognition in the degree in which it is cumulative or amounts to something, or has meaning” (Dewey, 1916/1944, p. 140). And here, at last, we come to the role of reflection.

The function of reflection is to make meaning; to formulate the “relationships and continuities” among the elements of an experience, between that experience and other experiences, between that experience and the knowledge that one carries, and between that knowledge and the knowledge produced by thinkers other than oneself.

In discovery of the detailed connections of our activities and what happens in consequence, the thought implied in cut and try [sic] experience is made explicit. . . . Hence the quality of the experience changes; the change is so significant that we may call this type of experience reflective—that is, reflective *par excellence*. (Dewey, 1916/1944, p. 170)

The creation of meaning out of experience is at the very heart of what it means to be human. It is what enables us to make sense of and attribute value to the events of our lives. Dewey ascribes the act of meaning making to the soul. Dewey (1938) ponders,

What avail is it to win prescribed amounts of information about geography and history, to win ability to read and write, if in the process the individual loses his own soul: loses his appreciation of things worthwhile, of the values to which these things are relative; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur? (p. 49)

Let us return for a moment to Dewey’s definition of education: “that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases [one’s] ability to direct the course of subsequent experience.” Reflection is that process of “reconstruction and reorganization of experience which adds to the meaning of experience.” (The steps in this process are outlined in detail later.) An experience has meaning because of the relationships that the individual perceives. Aldous Huxley once wrote, “Experience is not what happens to you, it’s what you *do* with what happens to you” (cited in Kegan, 1983, p. 11). Dewey might alter this to say that experience is what happens to you; what you do with what happens to you is directly dependent on the meaning that you make

of it. And though the experiences that befall us may be out of our control, the meaning that we make of them is not.

To move the discussion to the realm of teaching for a moment, we can say that a reflective teacher does not merely seek solutions, nor does he or she do things the same way every day without an awareness of both the source and the impact of his or her actions. Rather, from his or her practice and the students' learning, the teacher seeks meaning and creates from this a theory to live by, a story that provides structure for the growth of the students and the teacher. When the teacher seeks solutions, he or she also pursues connections and relationships between solutions so that a theory might grow. This theory guides practice (which includes but is not limited to problem solving) until it encounters a situation where the theory no longer serves, at which point, through more reflection, it is either revised, refined, or discarded, and a new theory is born.

To understand this journey from practice to theory, and around again to practice, it is necessary to understand the process of reflection itself. The next criterion explores that process.

CRITERION #2: REFLECTION AS A RIGOROUS WAY OF THINKING

In *How We Think* (1933), Dewey explores the process of reflection in great detail. It is complex, and Dewey uses at least 30 different specialized terms in his efforts to describe it. This may be one of the reasons that educators have shied away from tackling his vision of reflection; Dewey was a philosopher, and our urge to leave such efforts to other philosophers is understandable. As a teacher educator, and not a philosopher, however, I have found it helpful to approach the book with an eye toward my own experiences as well as those of teachers with whom I have worked. In an effort to make Dewey's ideas as accessible as possible, I have tried to limit my use of the specialized terms here without losing the essential meaning behind them.

As Dewey defines it, reflection is a particular way of thinking and cannot be equated with mere haphazard "mulling over" something. Such thinking, in contrast to reflection, is, in a word, undisciplined. Dewey mentions three kinds of thought that he distinguishes from reflection: stream of consciousness, invention, and belief. Although he clearly values reflection as the road to learning, at the same time he does not dismiss these other kinds of thinking, acknowledging that they often serve up the very questions that reflection can productively tackle.

The first of these other kinds of thinking is stream of consciousness. It is the thinking all of us are involuntarily awash in all the time. An "uncontrolled coursing of ideas through our heads," Dewey calls it (1933, p. 4). This is often the only kind of thinking teachers have time for. Reflective

thought, in contrast, comprises “definite units that are linked together so that there is a sustained movement to a common end (p. 5).”

The second kind of thinking is invention. Invention stands in contrast to direct perception of facts—it is, in short, imagination. Although Dewey contrasts imagination with the rigors of reflection, he does see its importance within reflection. Reflection requires that the thinker draw on past experience, “image-ing” other events that are similar to or different from the experience being inquired into. Imagining is therefore a subset of reflection but cannot be counted as equivalent.

The third kind of thinking Dewey identifies is believing. He characterizes this kind of thought as

prejudgments, not conclusions reached as the result of personal mental activity, such as observing, collecting, and examining evidence. Even when they happen to be correct [like the belief that the earth is round] their correctness is a matter of accident as far as the person who entertains them is concerned. (1938, p. 7)

Reflection, in contrast to acceptance of conventional belief, constitutes “[a]ctive, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (italics in original, p. 9). Dewey cites Christopher Columbus as a reflective thinker, noting that he must have concluded that the world was round rather than flat based on his experience as a navigator. (A questionable example on Dewey’s part because Columbus’s contemporaries actually knew full well that the earth was round!)

The impulse to reflect is generated by an encounter with, and the conscious perception of, the potential significance inherent in an experience. Not everyone is able to perceive this potential. (How many apples had fallen on heads before Newton perceived the inherent significance of the event?) Thus, an additional quality is necessary in the person—a quality of being present to the nature of the experience and an openness to its potential meanings.

It is the bridge of meaning that connects one experience to the next that gives direction and impetus to growth. The process of reflection, Dewey claims (1916/1944), moves the learner from a disturbing state of perplexity (also referred to by him as disequilibrium) to a harmonious state of settledness (equilibrium). Perplexity is created when an individual encounters a situation whose “whole full character is not yet determined” (p. 150). That is, the meaning(s) of the experience has not yet been fully established. The internal experience for the learner is one of disequilibrium and unsettledness. It is a yearning for balance that in turn drives the learner to do something to resolve it—namely, to start the process of inquiry, or reflection.

An additional source of motivation is curiosity, without which there is little energy for the hard work of reflection: “[U]ntil we understand, we are, if we have curiosity, troubled, baffled, and hence moved to inquire” (Dewey, 1933, p. 132). Although curiosity comes naturally to children, a childlike wonder about the world is something that adults often must cultivate in themselves. In my own work with teachers, I have been struck by the importance of curiosity. Although many teachers get caught in the web of perplexity, not all of them care, or, more often, feel they have the time to explore why they are stymied. They can revert to blaming either the students or themselves, or they simply give up, figuring they’ll never understand and lack the time to do so anyway. Curiosity, in contrast, bespeaks a positive, wide-eyed attitude toward both one’s own and others’ learning. I will return to the other attitudes that Dewey values in the fourth criterion.

The process of reflection can be broken down into six phases. Let it be said that Dewey himself is less than clear about these phases and leaves it to the reader to divide them up. For example, in *How We Think* (1933), he identifies first two and then five phases; in *Democracy and Education* (1916/1944) he writes of five slightly different phases. He uses terms ambiguously, first making a distinction between, for example, an idea and a suggestion, and then using them interchangeably. Be that as it may, he does make it clear that a reflective thinker moves deliberately from the data of the experience to formulating a theory, to testing his theory about the experience. In an effort at clarity, the words I use to label these phases are my own.

The following six phases of reflection, which clearly mirror the scientific method, consistently appear in his writing about the process:

1. an experience;
2. spontaneous interpretation of the experience;
3. naming the problem(s) or the question(s) that arises out of the experience;
4. generating possible explanations for the problem(s) or question(s) posed;
5. ramifying the explanations into full-blown hypotheses;
6. experimenting or testing the selected hypothesis.

I have already explored the nature of an experience. I will therefore start with number two.

Spontaneous Interpretation of the Experience

As soon as one is in an experience, as well as after an experience, spontaneous interpretation of what is going on ensues. In the initial phases of reflective thought, this interpretation is involuntary. Things leap to mind. From the “feltness” of the experience possible meanings suggest themselves. These suggestions, as Dewey calls them, come out of our previous experiences and are therefore sensible, though not always thoughtful conclusions. To stop the thought process here is irresponsible, Dewey (1933) argues, because an interpretation necessarily leads to an action, and an action based on a “leapt to” conclusion could be an inappropriate, or even a harmful, one. It requires discipline and patience:

[A person] may jump at a conclusion without weighing the grounds on which it rests; he may forego or unduly shorten the act of hunting, inquiring; he may take the first “answer,” or solution, that comes to him because of mental sloth, torpor, impatience to get something settled. One can think reflectively only when one is willing to endure suspense and to undergo the trouble of searching. (p. 16)

Dewey notes that the first step once one is in an experience is to “note or perceive” a fact (e.g., a cloud): “the seen thing is regarded as in some way *the ground or basis of belief* in the suggested thing; it possesses the quality of *evidence*” (Dewey, 1933, p. 10). This is a critical point. What one sees—that is, what one directs one’s attention to—is limited, especially in a classroom setting where it is impossible to see everything. One can, however, develop one’s ability to be present, to perceive more rather than less. Experienced teachers seem to have this ability—their awareness spreads like a net over the infinite number of “facts” of classroom life.

So the suggestions, inferences, or interpretations a teacher makes depend on what she perceives and on her experience, which in turn, Dewey (1933) notes “depends upon the general state of the culture.” In addition, interpretations are subject to “the person’s own preferences, desires, interests, or even his immediate state of passion” (p. 96). This points to the important role that commitment to one’s growth and an attitude of open-mindedness play. I discuss this further under the fourth criterion.

Dewey was acutely aware of the need to slow down the interval between thought and action in this phase of reflection. Time to reflect is essential, he wrote, especially with the novice. He distinguishes the thought of an expert from that of a novice. It may be that one sign of the experienced teacher is a shortening of the time needed between thought and action. In other words, a veteran teacher may move through all six phases of reflection in a relative instant. A related difference might reside in the depth of the teacher’s experience. The important and relevant aspects of an expe-

rience are quickly recognizable to the veteran because the connections that have been formulated over time are broad, and the skills one might draw on to respond are well developed. A yawning student to an expert may suggest a number of possibilities, ranging from fatigue to resistance, with a range of concomitant responses from which to choose. To a novice it may only suggest boredom, eliciting, for example, a self-judgmental or an angry interpretation—"I'm a boring teacher" or "They have no respect!" and a reaction that punishes the teacher and the students, rather than one that responds to students' needs.

Schön's (1983) "reflection-in-action" is actually present in both the novice and expert. The difference is a question of wisdom garnered through experience—"being able to select and apply just what is needed when it is needed" (Dewey, 1933, p. 65). So an expert's spontaneous interpretation may be much wiser than a novice's considered response. Yet Dewey would contend that even an expert's interpretation is not beyond question. The store of one's wisdom is the result of the extent of one's reflection.

It is also often in the slowing down that teachers, especially experienced teachers, begin to discover what it is that they already know—what Polanyi (1967) and later Shulman (1988) called their "tacit knowledge."

Naming the Problem or the Question

Dewey calls this phase of thought intellectualization, or locating the problem. I choose to think of this step and the preceding one as phases of observation and description of the experience. There is a distancing of the problem as it were—getting enough distance so that one can see, like backing away from a painting to see the whole picture. In addition, one's first emotional reaction, along with the visible facts of an experience, becomes an object of thought. One moves from an impressionistic "sense" of things to an articulated idea. "[T]here is a process of intellectualizing what at first is merely an emotional quality of the whole situation. This conversion is effected by noting more definitely the conditions that constitute the trouble." Formulating the problem or question itself is half the work. As Dewey says, "A question well put is half answered" (1933, p. 108).

There can be a great sense of relief and accomplishment at this stage of the reflective process because making meaning has begun. It is not a casual process but a disciplined one that demands that the individual continually ground his or her thinking in evidence and not overlook important data that may not fit his or her evolving ideas. The discipline of description as distinct from interpretation can bring these facts to light. This phase also demands that the learner align those data and the questions he or she poses—that is, is the question relevant to the data, the text of one's experience? Is there, in other words, integrity to the inquiry process?

This is perhaps one of the most challenging aspects of reflection. The question that a learner is able to formulate depends directly on the completeness and complexity of the data or description that he or she has gathered and generated. The completeness and complexity of the data are in turn made visible according to the extent of the teacher's own ability to observe, pay attention, perceive, and be open—in short, be present—to all that is happening in the classroom.

Generating Possible Explanations

In this phase the individual returns to the suggestions that arose in phase two, either refining them so that they are more like probabilities or rejecting them as improbable. Dewey calls this the formation of tentative hypotheses. It is the first phase of analysis. The explanations that arise will come from a synthesis of the meaning derived from the current experience with that drawn from previous experiences. In addition, in this case, the learner goes to other sources beyond himself or herself. Bringing in other resources, both people and books, is paramount to deepening and broadening the scope of one's understanding. The point here is that a number of possible connections are now being generated, and meaning is beginning to take shape, rather like a sculpture that has undergone its first defining chisel.

Ramifying Selected Hypotheses

The division between this phase and phase four is difficult to discern; one flows seamlessly into the next. Phase five is a more intense and focused version of phase four, but they both involve analysis. Dewey himself condenses them at an earlier point under the heading of "reasoning" (1916/1944, p. 150). It is these two phases, Dewey contends, that set reflective thought apart from other forms of thought. Reconstructing or reorganizing experience means more than just taking swipes at the obvious elements of an experience, the sculptor hacking away at a protrusion on the marble or wood. It means spending enough time with the data of an experience, with the texture and density and grain of it, so that it can emerge in all its complexity. What might have been a reaction based on a simple-minded analysis (phase two) is thus transformed into a possible reflective response based on full knowledge of its ramifications. This phase could be understood as a series of intellectual dry runs through the problem/question and its various conclusions. It provides a platform of reason and understanding from which one can take the next step, intelligent action.

Dewey understood the implications of depriving teachers of this phase of reflection. He frequently referred to the intellectual dependency teachers have on other authorities (e.g., school boards, textbook publishers, princi-

pals, superintendents) to make their teaching decisions for them. As early as 1904 Dewey deplored

the willingness of our teaching corps to accept without inquiry or criticism any method or device which seems to promise good results. Teachers . . . flock to those persons who give them clear-cut and definite instructions as to just how to teach this or that. (p. 152)

He consistently cites the need to develop teachers' professionalism. Such professionalism, he argued, grows out of a scientific (reflective) approach to education. As with any learner, teachers who are given a chance to reflect systematically on their experience can come to an understanding of what their students do and why. With these understandings in hand, they are better equipped to articulate their needs and their students' needs, to take stands, and to propose actions, both inside and outside the classroom walls.

Experimentation

Often those who write about reflection will stop before this final phase, forgetting that for Dewey, reflection must include action. Dewey's notion of responsibility, one of the four attitudes he felt were integral to reflection, implies that reflection that does not lead to action falls short of being responsible. Reflection is not a casual affair. Nonetheless, he also understood that the action that one does take is not definitive. That is, it is an experiment, a testing of one's theories. (Appropriately, the words experience and experiment share the same Latin root; the 16th-century definition of an experience was to experiment, "to put to the test."² In French, they are still one and the same word, *expérience*.)

The consequent action that one takes is "intelligent" and qualitatively different from routine action because of the thought that has preceded it. A colleague of mine makes the distinction between a "reaction" and a "response." A reaction, he says, is "like the snap of one's fingers, an automatic type of [reply] that does not have any assessment or thought to it" (Johnson, 1998, p.2). A response, on the other hand, is based on careful assessment and thought. In fact, the anatomy of a response is hugely complex. It is based on knowledge and awareness of the learner, oneself, the subject matter, the contexts within which we all operate, and the dynamic interactions among all of these.

This final phase of reflection is the one that offers the possibility of settledness, a resolution to the disequilibrium. One finally feels that the meaning one has ascribed to an experience fits, makes sense, and can be relied on in future experiences. More often than not, of course, once one has tested one's theories in action, more questions, more problems, more

ideas arise. In this sense the process is cyclical; reflection comes full circle, the testing becomes the next experience, and experiment and experience become, in fact, synonymous.

In effect, it may be possible to collapse Dewey's six phases into four:³

1. presence to experience;
2. description of experience (implies holding at bay spontaneous interpretations—Dewey's phase two—until analysis, where they can be more closely examined in light of the data gathered; See Himley & Carini, 2000, for the profound possibilities of this step);
3. analysis of experience (which subsumes Dewey's phases four and five); and
4. intelligent action/experimentation (Dewey's phase six).

In my own work with reflective professional development groups, we have used these steps to good effect. Questions, problems, and ideas weave themselves through all four phases, evolving and refining themselves as they do so (see Rodgers, in press).

It should be clear that the movement from experience, to spontaneous interpretation, to naming the problem and reasoning through its complexities must lead to change. The individual acts in that world according to the new meanings he or she derives and imposes. I noted previously that although individuals can create meaning in isolation, interpretation can be fuller and more complex when generated in community. The third criterion of reflection explores the implications of reflection in a community of fellow thinkers.

CRITERION #3: REFLECTION IN COMMUNITY

Dewey knew that merely to think without ever having to express what one thought is an incomplete act. He recognized that having to express oneself to others, so that others truly understand one's ideas, reveals both the strengths and the holes in one's thinking. "The experience has to be formulated in order to be communicated," he writes. Then continues,

To formulate requires getting outside of [the experience], seeing it as another would see it, considering what points of contact it has with the life of another so that it may be got into such form that he can appreciate its meaning. . . . One has to assimilate, imaginatively, something of another's experience in order to tell him intelligently of one's own experience. . . . A man really living alone (alone mentally as well as physically) would have little or no occasion to reflect upon his past experience to extract its net meaning. (1916/1944, p. 6)

He also knew that in the act of sharing, one's field of experience broadened:

In so far as we are partners in common undertakings, the things which others communicate to us as the consequences of their particular share in the enterprise blend at once into the experience resulting from our own special doing. (1916/1944, p. 186)

Drawing on my own experience as a teacher educator and facilitator of reflective professional development seminars, I have identified at least three factors that highlight the benefits of collaborative reflection: 1) affirmation of the value of one's experience: In isolation what matters can be too easily dismissed as unimportant; 2) seeing things "newly": Others offer alternative meanings, broadening the field of understanding; 3) support to engage in the process of inquiry: The self-discipline required for the kind of reflection that Dewey advocates, especially given the overwhelming demands of a teacher's day, is difficult to sustain alone. When one is accountable to a group, one feels a responsibility toward others that is more compelling than the responsibility we feel to only ourselves.

One of the interesting by-products of working in a supportive community is that it allows teachers to acknowledge their interdependence in a world that scorns asking for advice and values, above all, independence for both students and teachers. Dewey, always leery of dualisms, recognized that teachers and students need both the support of the community and the ability to act independently within the larger world. As psychologist Robert Kegan (1994) points out, deciding for myself should not be confused with deciding by myself (p. 219). No teacher outgrows the need for others' perspectives, experience and support—not if they are interested in being what Dewey calls life-long students of teaching. The community also serves as a testing ground for an individual's understanding as it moves from the realm of the personal to the public. A reflective community also provides a forum wherein the individual can put form to what it is he or she was thinking—or feeling—in the first place. Dewey scholar Richard Pravat (2000) points out the critical role that language plays in making personal knowledge universal: "Language is key," he writes. "It allows the individual to transform his or her own inchoate understanding into a form that is more conscious and rational, thus serving the self. It also allows the individual to share insight or understanding with others, thus serving the community" (p. 6).

Although reflection with others is essential, to speak of reflection in community and to ignore the dispositions that are needed is to neglect an essential part of the act of reflection. Dewey was very aware that reflective work, and especially work in reflective communities, demanded particular attitudes. It is to these attitudes that we now turn.

CRITERION #4: REFLECTION AS A SET OF ATTITUDES

Human beings are not normally divided into two parts, the one emotional, the other coldly intellectual—the one matter of fact, the other imaginative. The split does, indeed, often get established, but that is always because of false methods of education. Natively and normally the personality works as a whole. There is no integration of character and mind unless there is fusion of the intellectual and the emotional, of meaning and value, of fact and imaginative running beyond fact into the realm of desired possibilities. (Dewey, 1933, p. 278)

Dewey's awareness of what educators call the affective dimension of learning is often overlooked. Because he wrote *How We Think*, and not *How We Feel*, it is perhaps not surprising. But Dewey had a keen understanding of the role that affect plays in learning, which he explores, at least in part, in his discussion of attitudes, or dispositions in both *How We Think* and *Democracy and Education*.

Dewey believed that the attitudes that the individual brought to bear on the act of reflection could either open the way to learning or block it. Awareness of our attitudes and emotions, and the discipline to harness them and use them to our advantage, is part of the work of a good thinker, he argues. He recognized the tendency in all human beings to see what we wish were true, or what we fear is true, rather than to accept what evidence tells us is so. Dewey (1933) cautions against the dangers of believing “that which is in harmony with desire” (p. 30). By the same token, there are also those of us who tend to believe the worst—that which we fear most. When desire, fear, need, or other strong emotions direct the course of inquiry, we tend to acknowledge only the evidence that reinforces that premise, causing learning to become tightly circumscribed. In contrast, reflection that is guided by whole-heartedness, directness,⁴ open-mindedness, and responsibility, though more difficult, stands a much better chance of broadening one's field of knowledge and awareness. Of course, one is seldom wholly open-minded, whole-hearted, and so forth, or wholly fearful or needy. We are usually a combination of many of these. I explore each of these four attitudes below.

Whole-Heartedness

Whole-heartedness, also called single-mindedness in *Democracy and Education*, indicates a genuine, no holds barred enthusiasm about one's subject matter. A teacher's subject matter can be seen as threefold: It includes a) the actual content he or she is teaching—French, for example; b) the learner's learning of French; and c) the teacher's teaching and how it is affecting the student's learning. This triangle of factors (i.e., teacher/

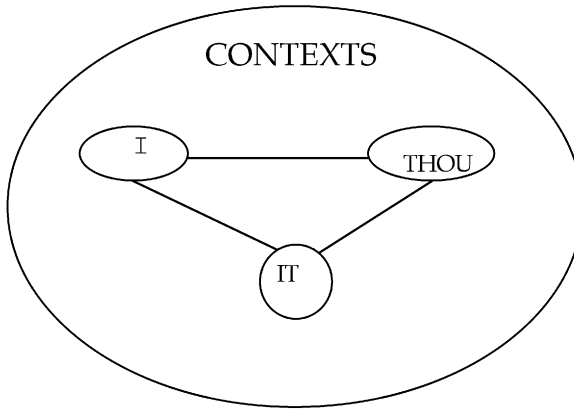


Figure 1. I, Thou, It, and Contexts

teaching, learner/learning, and content—what Hawkins (1974) called the “I-Thou-It”) interacts to form a dynamic nexus, held in tension by the force field of context/s the classroom, school, community and outward, even to the levels of nation and globe. Although Dewey wrote primarily about “content,” together these four factors can be assumed to constitute a kind of meta-subject matter—teaching itself. (See Figure 1.)

Curiosity about and enthusiasm for that subject matter is essential to good teaching. Without them a teacher has no energy, no fuel, to carry out reflective inquiry—much less teaching itself. This kind of total engagement is what Dewey meant by whole-heartedness.

Without whole-heartedness, there exists indifference, and the energy to observe and gather information about learners and their learning, one’s teaching and so forth is not there. It is therefore essential to reflective thinking. On the other hand, if a teacher possesses an attitude of whole-heartedness yet works in a context that beats it out of the teacher, such as having too many students, a curriculum without flexibility, tests that must be taught to and no time to share with other teachers, let alone time to reflect, whole-heartedness obviously suffers, and too often withers to resignation and even bitterness.

Directness

Dewey said that directness can best be described by what it is not. It is not self-consciousness, distractedness, or constant preoccupation with how oth-

ers perceive one's performance. Rather, it indicates a confidence, but not a cockiness, that is almost childlike in its genuineness yet adult in its lack of self-absorption. It bespeaks an attitude of trust in the validity of one's own experience without spending a lot of time worrying about the judgment of others. It resembles whole-heartedness in its single-minded nature, but its focus on an absence of anxiety about oneself makes it distinct and important. It is what beginning teachers often lack. Because they are so identified with the content and their teaching of it, they often totally miss what is going on around them—most important, the learners and their learning.

Although directness means being free of self-absorption, it does not preclude observing oneself in a more detached way. Indeed, the growth of a teacher may well pass from self-absorption, to forgetting oneself, to self-awareness (observing and reflecting upon his or her actions, thoughts, and emotions), as the reflective practice evolves. (See Figure 2.)

A reflective teacher who possesses an attitude of directness might well ask, "Where was the learning in today's work?" This is a very different question from "What did I teach today?" Beginning teachers often confuse the two questions. Being able to answer the first question depends entirely on a teacher's ability to observe, and the ability to observe is directly proportional to the degree to which one can be free from preoccupation.

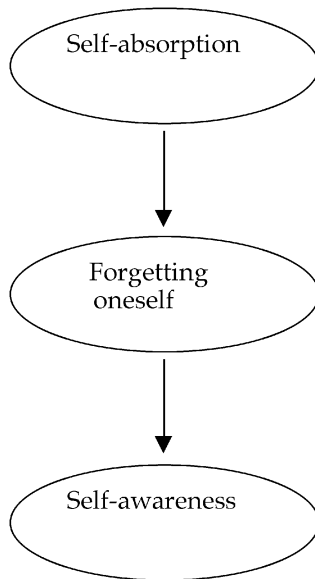


Figure 2. Evolution of Directness in Teachers

One common preoccupation for beginning teachers is the subject matter itself or, to be more precise, lack of subject matter knowledge. Dewey (1933) wisely points out that without a grounding in the subject matter, reflection is difficult:

The teacher must have his mind free to observe the mental responses and movement of the student. . . . The problem of the pupils is found in the subject matter; the problem of teachers is what the minds of pupils are doing with the subject matter. Unless the teacher's mind has mastered the subject matter in advance, unless it is thoroughly at home in it, using it unconsciously without need of express thought, he will not be free to give full time and attention to observation and interpretation of the pupils' intellectual reactions. The teacher must be alive to all forms of bodily expression of mental condition—to puzzlement, boredom, mastery, the dawn of an idea, feigned attention, tendency to show off, to dominate discussion because of egotism, etc.—as well as sensitive to the meaning of all expression in words. He must be aware not only of their meaning, but of their meaning as indicative of the state of mind of the pupil, his degree of observation and comprehension. (italics in original; p. 275)

An attitude of directness is a prerequisite to reflection because until the teacher is able to focus on all elements of the I-Thou-It and their contexts, reflection risks getting stuck on the level of self. Although self is one part of the subject matter of teaching, it is significant only as it connects to the other elements. In the absence of such a connection, reflection risks, and is often rightly judged as, being narcissistic.

Open-Mindedness

Open-mindedness is the third of Dewey's attitudes. He has a lovely way of characterizing open-mindedness as "hospitality" to new ways of seeing and understanding. He makes a delightful distinction between open-mindedness and empty-mindedness, however; it is not, as he puts it, a matter of saying, "Come right in; there is nobody at home" (Dewey, 1933, p. 30). In other words, open-mindedness is not a blind acceptance of all ideas without intelligent critique. Rather, it means a willingness to entertain different perspectives, coupled with an acceptance of the "possibility of error even in the beliefs that are dearest to us" (1933, p. 30), and acknowledgment of the limitations of one's own perspective. Dewey reminds us that to be open-minded means not only being hospitable but also being playful—not clinging too tightly to our ideas but releasing the mind to play over and around them.

Responsibility

Responsibility helps to bind and ground whole-heartedness, directness, and open-mindedness. It is the reality check. It asks, "What are the real-life implications of my thinking?" It also implies that a carefully considered line of thought should lead to action. Dewey (1933) wrote that to be intellectually responsible

is to consider the consequences of a projected step; it means to be willing to adopt these consequences when they follow reasonably from any position already taken. . . . [Learners must ask] for the meaning of what they learn, in the sense of what difference it makes to the rest of their beliefs and to their actions. (p. 32)

Being responsible also means acknowledging that the meaning we are acting on is our meaning, and not a disembodied meaning that is "out there." As Kegan (1994) puts it, "[W]e 'make sense,' but we do not always take responsibility for it as made. We are more likely to believe it is 'the way the world is made' (and leave out the agent of that passively constructed sentence)" (p. 206).

Our meaning making does not stand isolated from our view of the world but grows out of and leads back into it, possibly demanding that our view change radically. It might also mean that the way in which we participate in the world has to change. For example, a teacher I know recently came to the realization that her refugee students' level of English was far below what she had thought. She realized after some observation and analysis that they were not, in fact, resistant or lazy. Before they were able to read sophisticated articles about sexual harassment, for example, (where she wanted them to be), basic vocabulary and pronunciation (where they actually were) had to come first. In other words, once the meaning she made of her and her students' experience in class shifted from "the students are lazy and resistant" to "the students are ill-equipped," it would have been irresponsible to continue teaching them as she had been. Simultaneously, she had to take responsibility for her own desires, (i.e., that students be more advanced, that they be able to dig into sophisticated topics, that they be concerned with the same issues of social justice that she was) and the ways in which her desires were distorting the meaning of her experience and her students' learning.

Readiness

As a whole, the four attitudes comprise the essential constituents of what Dewey calls readiness to engage in reflection. Dewey freely admits that they

do not necessarily cover the range of attitudes necessary for reflection. Given such an opening, I would add two others, which Dewey does refer to in other places—curiosity and the desire for growth. Without these, the courage required for truly reflective work would be absent. Truly to inquire into one's practice in a whole-hearted, direct, open-minded, responsible way demands the courage to release not only what one holds dear but the elements of one's very identity. Again, Kegan (1994) helps us to understand this when he writes that

being able to think [reflectively] is not just a discrete skill, it is an active demonstration of a mind that can stand enough apart from its own opinions, values, rules, and definitions to avoid being completely identified with them. It is able to keep from feeling that the whole self has been violated when its opinions, values, rules, or definitions are challenged. (p. 231)

SUMMARY

In this article I have discussed four criteria for reflection that come primarily from *How We Think*, *Democracy and Education*, and *Education and Experience*. I demonstrated that reflection is not an end in itself but a tool or vehicle used in the transformation of raw experience into meaning-filled theory that is grounded in experience, informed by existing theory, and serves the larger purpose of the moral growth of the individual and society. It is an iterative, forward-moving spiral from practice to theory and theory to practice. I emphasized that the process of reflection is rigorous and systematic and distinct from other, less-structured kinds of thinking. It has its origins in the scientific method and, as such, includes precise steps: observation and detailed description of an experience, an analysis of the experience that includes generation of explanations and development of theories, and experimentation—a test of theory. This experimentation, which involves interactions between the self, others, and one's environment, in turn serves as the next experience from which learning can continue, a phenomenon that Dewey called continuity. This can all happen in solitude, but in community with others the learner will broaden his or her understanding of an experience beyond where it might go in isolation.

At the same time that reflection requires cognitive discipline, it also calls upon an individual's emotional discipline. As much as possible one must remain engaged in the experience as it is happening, in an undistracted way, so that data can be gathered through observation (whole-heartedness and directness). One must also remain open-minded, entertaining many interpretations of his or her experience so that one does not limit one's

understanding and the actions that flow from it. Finally, one must accept that a shift in understanding of an experience may call for an entire shift in outlook. And responsibility demands that action—practice—line up with outlook—theory.

CONCLUSION

Dewey was precise in his description of what it means to think reflectively. By adhering to the essential rigor inherent in his definition, teachers and reformers achieve several ends. First, the process of reflection, and the steps of observation and description in particular, require the teacher to confront the complexity of students and their learning, of themselves and their teaching, their subject matter, and the contexts in which all these operate. Any action the teacher takes, therefore, will be considered rather than impulsive and based on a deep knowledge of each of these elements and their interactions, which ultimately can only benefit students' learning. In like fashion, once teachers learn to think, they can teach their students to do the same, for teachers teach best what they understand deeply from their own experience. From there they can encourage their students to confront thoughtfully the phenomena of their world.

Second, because reflection is a particular, defined way of thinking, it can be practiced, assessed, and perfected. Once reflection can be talked about with precision by both teachers and researchers (as well as students!), it cannot be so easily dismissed as "soft," nor lost in the flurry of vaguely defined movements. How to think reflectively, after all, is not a bandwagon issue. It is not a fad whose time has come and gone but perhaps the most essential piece of what makes us human, of what makes us learners.

Finally, with a clear language of reflection, there can be reflection on reflection, including research on the impact of reflection on both teachers' practice and students' learning. It is in these ways, as Dewey knew well, that there will be growth in our learning about how to think, to teach, and to learn. Dewey would urge us to reflect carefully upon his theory of reflection in light of our collective experience, changing that theory as our experience and accumulated knowledge dictate—thinking to learn.

Notes

1 Dewey wrote two versions of *How We Think*, one in 1910 and the second in 1933. The 1933 version is considerably different from the 1910 version. Richard Prawat (2000) and others (McCarthy & Sears, 2000) point out that the first version preceded Dewey's shift from a more Jamesian view (nominalism) to a point of view more aligned with Charles Sanders Peirce (realism). The version referred to in this paper is the second, 1933 version.

2 *The shorter oxford English dictionary on historical principles*, (1965), London.

3 These phases were born of numerous discussions and a joint presentation at the 1999 TESOL convention in New York City with my colleagues Claire Stanley and Jack Millett of the School for International Training, Brattleboro, Vermont.

4 The first edition of *How We Think* was published in 1910 and contained no explicit mention of attitudes. Six years later, with the emergence of *Democracy and Education*, Dewey addressed four attitudes: directness, whole-heartedness, open-mindedness, and responsibility. With the revision of *How We Think* in 1933, Dewey included a discussion of attitudes, but only three of the original four survived, leaving directness out of the 1933 text. Directness resembled whole-heartedness, which may be the reason he dropped it, but I feel it is a distinct attitude worth cultivating, and so I include it here.

References

- Dewey, J. (1904). The relation of theory to practice in education. In M. L. Borrowman (Ed.), *Teacher education in America: A documentary history*. New York: Teachers College Press.
- Dewey, J. (1944). *Democracy and education*. New York: Free Press. (Original work published 1916)
- Dewey, J. (1933). *How we think*. Buffalo, NY: Prometheus Books. (Original work published 1910).
- Dewey, J. (1938). *Experience and education*. New York: Collier Books, Macmillan.
- Hawkins, D. (1974). *The informed vision: Essays on learning and human nature*. New York: Agathon Press.
- Himley, M., & Carini, P. (Ed.). (2000). *From another angle: Children's strengths and school standards*. New York: Teachers College Press.
- Johnson, W. (1997, October). Voices: An interview with Jack Millett. *TESOL Matters*.
- Kegan, R. (1983). *The evolving self: Problem and process in human development*. Cambridge, MA: Harvard University Press.
- Kegan, R. (1994). *In over our heads: The mental demands of modern life*. Cambridge, MA: Harvard University Press.
- McCarthy, C. L., & Sears, E. (2000). Deweyan pragmatism and the quest for true belief. *Educational Theory*, 50, (2), 213–227.
- National Board for Professional Teaching Standards. (1987). *The five propositions of accomplished teaching*. Retrieved October, 2000, from www.nbpts.org
- National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future*. New York: Author.
- National Foundation for the Improvement of Education. (1996). *Teachers take charge of their learning*. Washington, DC: Author.
- National Staff Development Council. (1995). *Standards for staff development*. Oxford, OH: Author.
- Osterman, K. F., & Kottkamp, R. B. (1993). *Reflective practice for educators: Improving schooling through professional development*. Newbury Park, CA: Corwin Press.
- Polanyi, M. (1967). *The tacit dimension*. Garden City, NY: Anchor Books.
- Prawat, R. S. (2000). The two faces of Deweyan pragmatism: Inductionism versus social constructivism. *Teachers College Record*, 102, (4), 805–840.
- Rodgers, C. (in press). Seeing student learning: Teacher change and the reflective process. *Harvard Educational Review*.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Shulman, L. (1988). The dangers of dichotomous thinking in education. In P. Grimmet & G. Erickson (Eds.), *Reflection in teacher education* (pp. 31–39). New York: Teachers College Press.

Thompson, C. L., & Zeuli, J. S. (1999). The frame and the tapestry: Standards-based reform and professional development. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning professional: Handbook of policy and practice* (pp. 341–375). San Francisco: Jossey-Bass.

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