

*"There is the same sort of advantage in having conceptual frameworks manufactured and on hand in advance of actual occasions for their use, as there is in having tools ready instead of improvising them when need arises."*—John Dewey

Nathaniel Champlin

## John Dewey: Beyond the Centennial

### I

THE most comprehensive value criterion Dewey would have us build into our conceptual framework as teachers still stands as a dynamic challenge to education: "The educational process has no end beyond itself; it is its own end. . . . Since in reality there is nothing to which growth is relative save more growth, there is nothing to which education is subordinate save more education."<sup>1</sup> This value criterion "must find universal and not specialized limited application."<sup>2</sup> The full range of experiences and problems available must be confronted if growth in one direction is seen in its relation to "continuing growth in new directions."

But those of us who are concerned to fashion a curriculum must have more to go on if we are to determine the *kinds* of experiences or problems to include and

the kinds not to include under the "growth for the sake of further growth" criterion. What Dewey calls "intermediary propositions" are needed in order that the proposed "universal" criterion effectively guides the selection and rejection of curriculum—even report card—content. And if we undertake such research, then we must focus upon the theory of thought, intelligence and learning upon which the growth criterion was built and to which it must finally submit. But here, too, Dewey leaves work to be done.

In discussing thought and one kind of its workings he tells us that he has "touched only upon the fringes of a complex subject" and that he will be satisfied if he has directed our attention to "neglected" aspects of the problem of thought. Dewey's conclusions on these two interrelated matters suggest that we can proceed more adequately not simply by mastering and applying, but also by reconstructing and extending his own theories. The task is no less than that of sharpening our most important "tool"—our conceptual framework.

<sup>1</sup> John Dewey. *Democracy and Education*. New York: The Macmillan Company, 1916. p. 59-60.

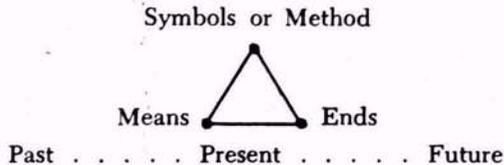
<sup>2</sup> John Dewey. *Experience and Education*. New York: The Macmillan Company, 1938. p. 29. By permission of Kappa Delta Pi, Tiffin, Ohio, owners of copyright.

## II

For Dewey intelligence is a procedure, activity or function rather than some *thing* located *inside* some other thing. It is a behavior which is directed by purposes, ends or goals. "Ends are foreseen consequences . . . which are employed to give activity added meaning and to direct its further course." As such, ends are not "terminal points of activity" but rather "redirecting pivots in action."<sup>3</sup> And they are ends only when fashioned in terms of the means to their achievement.

To have purpose—anticipation or expectation—fashioned in *terms* of the means to its achievement is to have symbols. The process or activity of ordering means to ends is symbolic—a case where a future, a non-present, is represented in the present. "A being which can use given and finished facts as signs of things to come; which can take given things as evidences of absent things, can, in that degree, forecast the future; it can form reasonable expectations. It is capable of achieving ideas: it is possessed of intelligence."<sup>4</sup>

These notions can be illustrated as follows:

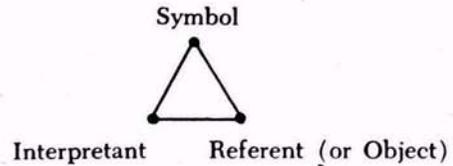


In developing his conception of symbols and their interrelations Dewey notes quite often his indebtedness to

<sup>3</sup> John Dewey. *Human Nature and Conduct*. New York: Henry Holt and Company, 1922. p. 225-34.

<sup>4</sup> John Dewey. "The Need for a Recovery of Philosophy." *Creative Intelligence*. New York: Henry Holt and Company, 1917. p. 21.

Peirce. According to this view there are three requirements to be met in order that a symbol be present. First, there must be something which represents; second, there must be something which is represented; and third, there must be something which makes the connection between the two. In the words of Peirce, "A *Sign* or Representamen, is a First which stands in such genuine triadic relation to a Second, called its *Object*, as to be capable of determining a Third, called its *Interpretant* . . ."<sup>5</sup>



The names constituting a teacher's *class list* might be taken as "Signs," the students in the classroom may be taken as the "Referents" for the "Signs," and a *seating chart* (or a show of hands at an initial roster call) may be taken as that which links up the two—the "Interpretant." Anything, of course, may be defined, interpreted, to stand for anything else. It is important to note, however, that a symbol is not to be construed as *identical* with its object. But it is more important to note, after Peirce and Dewey, that all three points of our triad must be available in experience; they must be common, sharable or experiencable. Only then can anticipation or expectation be formulated in terms of means and take on the character of being predictions.

For Dewey symbols may represent "anything under the sun." But he differ-

<sup>5</sup> C. Hartshorne and P. Weiss, eds. *The Collected Papers of Charles Sanders Peirce*. Cambridge, Mass.: The Belknap Press of Harvard University Press, Vol. II (copyright 1931, 1932, 1939, 1960 by The President and Fellows of Harvard College). p. 274.

entiate between symbols or conceptions on the one hand and "existential matters" on the other. *Symbols may represent symbols or they may represent non-symbols.* The terms "laws of logic" represent "abstractions" or symbols in the form of rules while the term "apple" represents something other than, but in another situation capable of becoming, a symbol.

Operations, to anticipate, fall into two general types. There are operations that are performed upon and with existential material. . . . There are operations performed with and upon symbols. But even in the latter case, "operation" is to be taken in as literal a sense as possible.<sup>6</sup>

Here Dewey is rejecting two historical traditions: First, there is that tradition which exhausts intelligence in knowledge and deductions therefrom; and, second, there is that tradition which depreciates ideas or theory save where those ideas or that theory lead directly to "practice," which, in its turn, is conceived as something other than practice with and upon ideas. The former arbitrarily limits intelligence to knowledge while the latter dangerously approaches "anti-intellectualism." What Dewey is holding is that there are means, ends and methods which *are* symbolic, ideational or theoretical; but also there are means and ends which *are not* symbolic, ideational or theoretical, but which are serviced by method which *is* symbolic, ideational or theoretical.

Intelligence, then, is not the exclusive property of those who work focally with "signs and number." The full act of intelligence also may include things, materials and tools. It is evidenced not only as the mathematician or philosopher

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manipulates theory to gain theory, but also as the carpenter, fisherman, housewife or automobile mechanic goes about ordering means to ends characteristic of his or her respective experiences. At the point of method, however, symbols are generic to all instances.

According to this Deweyan account of intelligence, a creative education would be organized around problem situations. Without an end-in-view there would be no problem. Without a problem there would be no learning. *Method* would receive primary emphasis with full recognition of the fact that it always entails ends and means and cannot operate in a vacuum. And since the conception of symbol, located at the heart of method, has been fashioned in light of "that experimental method by which" all the successful sciences . . . have reached the degree of certainty that are severally proper to them today,"<sup>7</sup> the method of intelligence is one with the method of empirical inquiry. Critical and creative thinking is one with the procedures of scientific thinking. Thus the "growth for the sake of further growth" criterion comes to include the method of science—or the method of critical thinking—as one, if not the, major principle of selection.

### III

Dewey made much of the point that a symbol in isolation has no meaning, that reasoning as a process of "develop-

*(Continued on page 38)*

<sup>6</sup> John Dewey. *Logic: The Theory of Inquiry.* New York: Henry Holt and Company, 1939. p. 15.

<sup>7</sup> C. Hartshorne and P. Weiss, eds. *The Collected Papers of Charles Sanders Peirce, op. cit.,* Vol. V, 1934, 1935, p. 465.

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ing the meaning-content" of ideas "necessitates the noting of relations of symbols to one another the formulated relation constituting a proposition." To accept a proposition is to commit oneself to "such and such other relations of meanings because of their membership in the same system."<sup>8</sup> Such a system he would label a "universe of discourse." And although Dewey left it to others to spell this out we may note with him that the terms *physiology*, *biology*, *psychology*, *chemistry* and *sociology* may be taken to represent distinguishably different "universes of discourse" and have become categories by means of which we structure curriculums.

But the point to be made for educational theory is that these terms are differentiations of theoretical or symbolic means, ends and methods. That is to say, there are ends, means and methods which are theoretical or conceptual and which may be labelled *psychological* or *biological*. A psychological end, or *problem* is a theoretical end or problem generally and an end or problem made up of *psychological* theory particularly. The means or "needs" of psychology are symbols or propositions; and the method of psychology is broadly that of the method of science. To say that someone has psychological or, for that matter, biological problems, needs or "wants" is to say either that someone is a psychologist or biologist or requires knowledge provided by these disciplines. To say that the infant is born with biological needs is to say that the infant is born a biologist or requires for some other purpose knowledge provided by the science of biology.

The above is not intended to be whimsical. It should be taken as technical and

important for a Deweyan based theory of learning and problem solving. First, the rather popular practice of assuming that the individual, child or adult, is partitioned in the same manner in which we can catalogue the various sciences cannot be supported either by a single science or by a collection of several sciences. The same holds true with respect to the three Rs. Only books, libraries, curriculums and conceptualizing can be so partitioned. Second, to use the term *psychological*, *biological* or *physiological* to qualify something other than knowledge, knowledge gaining, or objects *located* and *described* by terminology distinguishing these universes of discourse is to beg an important question: "Within *what science* or *universe of discourse* is *this* claim substantiated?"

Plainly no hard and fast lines can be drawn between universes of discourse. Many established generic meanings—"overlappings"—are to be found. But failure to recognize at least the distinction permits one to "jump theoretical fences" or to "hop, skip and jump" around the various sciences to come up, possibly, with an assertion like this: "Learning is an affair in which the emotional strain between the orbit of Mars and the gold-holdings of France during any given fiscal year manifests itself in the mutation of genes of the Socialist State." Indeed, this is a rather extreme version of the very theoretic incomprehensibility of which some educational theory is accused. The problem is really one of locating and building a universe of discourse, a conceptual framework, or a commonly understood "system of meanings," *distinguishable* as *educational theory*.

Throughout his writings Dewey attempts to avoid—and he tells us as he does this—a misuse of symbols. His was

<sup>8</sup> John Dewey. *Logic: The Theory of Inquiry*, op. cit., p. 111.

a *methodological* "system of meanings" as if to suggest that the quest for an educational discipline was one with the refinement and extension of methodological discourse. Sourced in Aristotle this discipline directs itself to those activities which exhibit and yield to, or are formed by, controlling agencies of a self-imposed sort.

Methodological discourse is distinguished by such concepts as *means, ends, methods, order, control, symbol* and *mediation*, as against, for example, biological discourse which is distinguished by such concepts as *organism, environment, reproductive organs, and mutation*. And since methodology aims at providing knowledge explicitly about activities and the manner in which they may be ordered or methodized, then it does hold promise of releasing the teacher in his professional capacity. Whatever the case, the "growth for the sake of further growth" criterion is helped only at the point of differentiations of method-of-science problems. No new principle can, thus far, be added to that of the method of science or critical thinking within the conceptual framework.

#### IV

In discussing *another kind* of intelligence and learning with methodological language, Dewey provides the means for the reconstruction and extension of his own theory and for the inclusion of another "growth" principle. He rejects as inappropriate such terms as *feelings, habits, emotions* and *attitudes* when describing what there is that is *more* than symbols, thus far conceived, yet *also* of thought and intelligence. He claims that we *think* qualitatively as well as "in terms verbal and mathematical."

A case in point, he tells us, is the thinking that goes on in artistic endeavors. "The doing and making is artistic when the perceived result is of such nature that *its qualities as perceived* have controlled the question of production."<sup>9</sup> An end may be a quality and, "as perceived," it enters to "control" activity. That is, quality operates as an *end* and it operates as *method*. Further, "Thought that is artistic is as much a case of genuine thought as that expressed in scientific and philosophical matters."<sup>10</sup>

Now traditionally the term *quality* has been taken to signify a property, attribute or component of an object or event, e.g., "This apple has a red quality." Or it has been taken to signify a standard of excellence—a value criterion, e.g., "We mustn't sacrifice quality for quantity." But while honoring these meanings, Dewey is using the term within the context of methodology and thus attributing to it another meaning. However, it remained for some students<sup>11</sup> of Dewey to

<sup>9</sup> John Dewey. *Art as Experience*. New York: Minton, Balch & Co., 1934. p. 48. Elsewhere in his writings Dewey does equate the method of intelligence with the method of science and leaves the problem of accounting for the *more than this* that is yet human to psychology, sociology and biology. But the problem here is not to make Dewey consistent, nor to speculate what he "really" meant. Rather it is to develop a major theme in his writings which has been largely neglected.

<sup>10</sup> John Dewey. *Philosophy and Civilization*. New York: Minton, Balch & Co., 1931. p. 116.

<sup>11</sup> See particularly Francis T. Villemain, *The Qualitative Character of Intelligence*, Ed. D. Report (New York, Library, Teachers College, Columbia University, 1952); Villemain-Champlin, "Frontiers for an Experimentalist Philosophy of Education," in *The Antioch Review* (Yellow Springs, Antioch Press, Fall 1959); Joe Burnett, *et al.*, "Dewey and Creative Education," in *Saturday Review* (New York, November 21, 1959); and David Ecker, "Toward a Philosophy of Art Education," in *Research in Art Education* (Washington, N.A.E.A., 9th Yearbook of the National Art Education Association, 1959).

give the term further methodological precision, to link it up with Dewey's general theory of intelligence and learning and with the growth criterion.

According to this methodological extension of Dewey's thought, qualities, too, are symbols. In order to gain or have, for example, the quality we designate with the term "white," we must institute a relationship of contrast between that quality and some other quality. A relationship of contrast must be instituted in order that the "it" we label "white" be *present*. In common sense language we might say that if all were white there would be no white. Thus, qualities are symbols by virtue of constructed contrasts. A qualitative symbol is to be distinguished from a theoretical symbol by the fact that a quality *presents* itself by representing the relationship out of which it emerges or by *means* of which it gains distinctiveness. A theoretical symbol, on the other hand, can be had *without* its referent also being present. Such qualities as those designated by the terms "anger," "joviality," "indignation," "formality," "permissiveness," "Gothic," "Cubism," and "circus" are symbols. They require for their occurrence the construction of a relationship of contrast.

Quality operates as an *end*. An architect may seek to achieve a structure capable of being labelled "Classical." A dramatist may seek to gain the structure (himself) capable of being labelled "indignation." And a painter may seek a canvas capable of being labelled "Cubism." Quality as end may be termed "Total Quality."

Quality operates as *method*. In order to gain the quality we call "Classical," the architect is guided by a quality common to many structures yet distinguishably different from, say, the quality we

term "Gothic" in its turn common to other structures. The drama student confronts the quality we label "indignation" as he confronts its occurrence in the cinema, on the stage, in the mirror or in the presentations of others and, *accordingly*, he institutes the relationships. So, too, with a painter who seeks the quality of "Cubism." This commonality or "pervasiveness" is regulative. It is method. It functions to guide selection and, hence, rejection of qualities and it functions to guide the relating in view of the end or total quality. Quality as method may be termed "Pervasive Quality."

Quality operates as *means*. In order to gain the quality we call "Classical," the architect selects as means such other qualities as horizontality, angularity, fluted column, and porch. The drama student presses into service a qualitative *kind* of voice, stance, gesture and term as means to gaining indignation. The painter utilizes a qualitative kind of line, plane, texture, color and proportion as means to the end called "Cubism." Conceived as means such qualities may be termed "Component Qualities."

Another principle of selection—qualitative method—may now join with the method of science under the "growth for the sake of further growth" criterion.

We may now locate descriptions of relationships between theory and quality—between theoretical intelligence and qualitative intelligence—for purposes of applying the growth criterion to curriculum construction. Four relationships may be noted:<sup>12</sup>

*Theoretical Predominance* is a case where theory is ordered to gain theory. (A child asks a question or seeks to answer a question; a philosopher gives a

<sup>12</sup> After Villemain.

lecture or writes an article; and a group undertakes a discussion.) In this case quality is an inescapable "background." That is, theorizing cannot go on save in a qualitative setting and along with such qualities as permissiveness, concentration or hesitation. In such cases qualities are to be evaluated in the extent to which they help forward the theorizing.

*Qualitative Predominance* is a case where quality is ordered to gain a quality but where there is theory functioning in an instrumental role. Theoretical symbols are to be found as children count and chant while skipping rope or bouncing rubber balls, as a "caller" functions at a barn dance or as one extends sympathy to another person. Theoretical symbols of one sort rather than another are pressed into service to help gain the quality of cynicism, depression, levity, frolic, friendliness, sorrow or a poetic form. In such cases theoretical symbols are to be evaluated in the extent to which they help forward the qualitative means-ends abroad in the situation.

*Reciprocity* is a case where both theory and quality function as means, ends and method. A bulletin board is a qualitative total, yet contains also theorizing in the form of information, descriptions or "copy." A dinner situation may involve those orderings of qualities we call manners and informality, yet be constitutive also of theorizing moving to conclusions about the present political state of affairs. "Group Process" in education is another illustration. In such cases both theoretical and qualitative methods constitute the controls, the means and ends.

*Qualitative Independence* is to be found in those means, ends and methods which entail no theorizing. A painting, sculpture, temper tantrum, a moment of

affection, a whirling-dancing presence or a ripple of laughter in the classroom are cases in point. (Indeed, a person doesn't lose control when he becomes angry or "mad." He gains—employs—anger as a control.) In such cases only pervasive quality operates as the method.

Dewey's point to the effect that no experience can proceed without qualities is here joined with the contention that some experiences can proceed without theory. All teachers, then, are potentially art teachers. They become art teachers when they single out, point out to others, provide for or institute qualitative relations. Further, qualities must be *presented* in order to function as method—in order to be learned—in the classroom situation. Thus, in replacing the emotional theory, the theory of qualitative intelligence at once makes more exacting demands upon and more adequately releases the work of the professional teacher. The notion of "inner forces" inhibited, repressed or undeveloped, but nevertheless inside somewhere, is hereby replaced by the theory of qualitative method. Qualities are public and sharable. They are to be confronted, evaluated and re-composed, whether in the form of indignation, home life, "classroom atmospheres," or our cities.

## V

The reconstructed theory of intelligence proposed above claims to join the problem set forth in the introduction. The amalgam of means-ends abroad in the human situation to be evaluated by the growth criterion may now be differentiated into: (a) theory to gain theory with quality in service; (b) non-theory or quality to gain quality with theory in service; (c) theory and quality to gain

theory and quality; and (d) quality to gain quality. This covers the full sweep of matters to be addressed by the growth criterion. Educators are brought that much closer to choosing and orchestrating the plethora of means-ends—learnings—in such a way that growth in one direction is seen in its relation to “continuing growth in new directions.”

A creative curriculum would rest upon an esthetic foundation. For in the long haul Dewey would “award the palm,” not to science, but to art experience. “Art—the mode of activity that is charged with meanings capable of immediately enjoyed possession—is the complete culmination of nature, and . . . ‘science’ is properly a handmaiden that conducts natural events to this happy issue.”<sup>13</sup> And, “Esthetic experience is a manifestation, a record and celebration of the life of a civilization, a means of promoting its development, and is also the ultimate

<sup>13</sup> John Dewey. *Experience and Nature*. Chicago: The Open Court Publishing Company, 1929. p. 358.

judgment upon the quality of a civilization.”<sup>14</sup>

But a creative education in theory and quality carries with it the courage and responsibility to relinquish, if necessary, some of our current and, in some cases, closely guarded conceptions.

For, if the hypothesis herein advanced is tested and found to hold, then we must be willing to give up the emotional theory, the notion that art experience is restricted either to the “fine arts” or to departments of art education, the view that theory is of value only when it leads *immediately* to non-theory (practice) and the conception that removes from the domain of public education those qualitative moments of sympathy, sorrow, “celebration of ideals realized” so precious to shared living and so important to sustaining us during turning points in our personal lives. It remains to be seen whether or not we will pay the price.

<sup>14</sup> John Dewey. *Art as Experience*, *op. cit.*, p. 326.

## Science and Mathematics

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McCloy<sup>12</sup> stated the point well in his admonition to scientists and those who survive in a world of science:

You have to do more than sign an intermittent manifesto from the isolation of your laboratory demanding of the government some immediate course of action. It requires added knowledge, added reading, added thinking and added experience, all inspired by the scientific spirit. It requires dealing,

<sup>12</sup> John J. McCloy. “Obligations of a Scientist.” An Address at the 92nd Commencement Exercises of the Massachusetts Institute of Technology, Cambridge, Massachusetts, June 13, 1958.

incidentally, with subjects wherein the variables are apt to be far more numerous and baffling than in any scientific problem you have thus far encountered.

The implication is clear. Science does not end with logical analysis of the holes in knowledge, with the logical search for logical materials to be logically ordered. It involves a broader dimension of analysis, synthesis and recombination, all of which constitute creativity. Without such creativity, the atmosphere of science can at best be sterile and humid.

As stated by Charles Kettering, “Logic enables you to go wrong systematically.” Creativity is the key to the escape from our older misconceptions.

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