Presented to faculty of Missouri Western State College, St. Joseph MO, 16 November 2001

Dewey's Theory of Inquiry and Experiential Learning

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I have been asked to talk about Dewey's philosophy of education and its possible application to higher education. What I would like to do first is to give a brief account of Dewey's theory of inquiry, since it was this theory, that Dewey gradually developed over a number of decades, that provides the theoretical basis of his ideas in education. Then we can look at some basic Deweyan positions in educational theory as outgrowths of his understanding of inquiry, and finally consider possible applications to higher educational practice.

Dewey's theory of inquiry rejected earlier empiricist and rationalist models in favor of understanding the achievement of knowledge from a naturalistic and developmental perspective. For Dewey, inquiry must be understood genetically, as a developing activity, the features of which play certain functional roles in this developmental process. Thus facts, perceptions, ideas, concepts are not independent preexisting entities that are artificially combined in inquiry, but are distinguished in the roles they play as instrumentalities or "tools" in the accomplishment of completed inquiry. Thus Dewey himself called his theory "instrumentalism."

Dewey distinguished several phases in this genetic development. First, like any human activity, inquiry is preceded by an antecedent situation which at once stimulates activity, and sets the general parameters to which subsequent activity must conform. He called such a situation "indeterminate," since it is one that checks ongoing, fluid action based on preestablished habits. The indeterminateness at this stage, then, is wholly practical--we don't know what to do to fulfill human needs and interests. This situation becomes, in his terms, "problematic" once the general nature of the problem is identified. The problematic situation stimulates the next stage, where there is a division between, on the one hand, the "facts"--known conditions and circumstances with which any resolution must conform--and "ideas"--hypotheses concerning the as yet unknown conditions of the original checking of activity. Once a likely hypothesis is settled upon, the final stage is testing the hypothesis as a guideline for renewed activity. The hypothesis is confirmed if effective activity is restored. To take a very simple example, if I am digging in my garden and hit an unknown obstruction under the soil, I am in an indeterminate situation--my activity of digging is checked. This becomes problematic once I identify the problem--"There is an obstruction." This then leads to the functional distinction between facts and ideas. At the base level my description of relevant facts might be in the guise of sensory statements: "This feels like an oblong, roughly textured object." Entertained hypotheses will take logically a conditional form, where the consequent is a mode of action confirming the antecedent: "If this is

a root, I should be able to cut it with a hatchet." The last stage is the use of the hypothesis as a guide for action--I strike the obstruction with the hatchet, the root breaks, and I continue digging. The process of inquiry, then, is inherently experimental, and its aim is practical or pragmatic--the reestablishment of fluid and effective human activity. It is important to notice here how for Dewey learning is a product of a person's interaction with their environment. Earlier theories of knowledge concentrated on mental activity as the basis for knowledge. For Dewey, understanding arises as much from what we do with our bodies as what we do with our minds.

The outcome of this process is what Dewey called "funded experience." Our experience is funded with new significance by foregoing inquiries, significance that broadens and deepens the world that is experienced. The important point here is that we don't simply achieve a new idea or thought that is superadded to our experience--the significance is something that is directly integrated in the experience. Using our previous example, once I discover that it is a root underneath the soil, I don't simply think this obstruction to be a root, but I experience it as root, and this establishes certain further connections and further possibilities in experience. Its that tree at the side of my garden that is intruding; the root might be cut, but what will this do to my tree?

Funded experience, then, is something that grows in layers, if you will, around the central kernal of our own immediate circumstances, growing outward spatially and temporally. As one learns history, one experiences oneself as a product of a certain cultural development, of a certain political and economic system, etc. As one learns evolutionary theory, one comes to experience oneself as an integrated part of a natural environment, and as a product of an evolutionary past. The continuity of this growth, for Dewey, was of central significance. Each new funding of our experience sets the conditions for more sophisticated inquiries, and additional stages of growth.

One additional point is needed to round out this picture of Dewey's theory of inquiry, and that is for Dewey this process is thoroughly socialized in a number of ways. First, other people comprise a significant part of the environment with which we interact. Thus, a significant portion of the funded experience that arises from our inquiries is the manner in which we experience ourselves within our social world. Second, inquiry for the most part is integrated within various broad social arrangements that constitute vital condtions for its development. My child's inquiries are integrated within the various mutual arrangements that determine the direction and character of family life. In addition, one of the most significant outcomes of inquiry is that it establishes the pragmatic basis for new and more efficient forms of social cooperation. Social and scientific understanding allows for the identification of common purposes, and the communal means for their fulfillment. It is not surprising, then, that Dewey

stressed the importance of education as a basis for establishing the habits and attitudes necessary for a flourishing democracy.

All forms of knowing, for Dewey, are based in this genetic model, from common sense to sophisticated science. Science differs, of course, from my problem with the root in my garden, but the difference is one of relative sophistication. In science, the third stage of the process, the distinction of facts and ideas, has been formalized into the distinction between theory and data. Also the process in science is socialized into integrated, specialized investigations. The basic structure of the process, however, remains the same.

We can get at the heart of Dewey's educational theory by asking what makes this process of inquiry a meaningful human activity. Here I use the word "meaningful" in both its senses: (1) in the sense that we understand the meanings inherent in the ideas or hypotheses entertained in the process, and (2) in the sense that we appreciate the importance, the significance, of the process itself. The answer is twofold for Dewey. First, the process of inquiry is meaningful because it is couched within the context of habits, patterns of thought, dispositions, etc., that are the product of earlier experimentation and that has defined our pragmatic orientation to our environment. One might say here that the unknown receives its significance, its meaning, from the known, where knowledge constitutes fundamentally our active adaptation to our world. My appreciation of the meaning of that unknown obstruction in my garden is defined in the context of the knowns of the garden (a place to grow plants), the importance of loose and aerated soil, the eating of fresh vegetables. The second thing that gives inquiry meaning is forward-looking: the practical aims, interests, ends that we are pursuing by inquiry and problem-solving. Loosening the garden soil, planting the vegetables, growing healthy plants, having that victorious first fresh salad of the summer, play an additional vital role in infusing my inquiry of the obstruction with meaning. These two aspects of inquiry, the established practical orientation of the past and the outcomes and aims of the future, is summed up in one of Dewey's most recognizable and characteristic phrases: "conditions and consequences." The significance of any cognitive problem must be assessed in terms of the conditions of the problem and the consequences of its resolution.

What does this have to do with education? In summary form we might say simply that successful educational practice must place the child within the context of meaningful inquiry which connects with and is continuous with the preestablished aptitudes, understandings, practical dispositions, etc., of the child, and which works towards goals and aims that the child can appreciate and internalize as his or her own. Education, rather than being a disruption of the child's maturing understandings and established interests, should be continuous with those

understandings and interests. In short, educational experience should be integrated with the child's broader life experience.

The variety of the positions that Dewey argued for in his educational writings can be understood as implications of this basic view. For example, Dewey often reiterated the point that the educational experience should not be viewed as a preparation for life, but as a part of the child's life experience. The teacher cannot engage a child's mind while taking the stance that the raison d'etre of instruction is many years down the road. Educational activity should rather be understood as on a par with meaningful adult activity: pursuing evolving present interests in the context of standing beliefs and practices.

Another Deweyan theme: instructional subject-matter should not be organized in the manner that is logical to an adult, but a manner that responds to the activities and interests of the child. We might take, for example, the whole language technique of teaching writing as Dewayan in this sense. A grammarian might think it logical to first teach the words, then the punctuation, then build towards sentences, paragraphs, etc. The more effective approach, from a Deweyan standpoint, is to engage the student from the start in meaningful written expression, and teach the elements, spelling, punctuation, etc., within the context of that meaningful activity.

One last Deweyan postion: the school should not be understood as an isolated domain within society, but as an integral part of greater society. As we noted before, inquiry is a process that is thoroughly socialized, since it is by virtue of social arrangements that inquiry flouishes. The school, for Dewey, should reflect these social arrangements for a couple of reasons. First, cooperative relationships that involve mutual help and aid are vital to the learning process. The more traditional method that put stress simply on the teacher's relation to individual students Dewey regarded as artificial and harmful to the richness of the educational experience. Second, a very important component of the educational experience is the child's deepening appreciation of him or herself as a social being, part of complex social relations with others. Traditional education, with its simplified and sterile social format, for Dewey, could not engender the sort of richly textured social understanding that was necessary.

I would like here also to suggest a few things that Dewey did not stand for, since often a variety of trends in modern education are unwarrentedly read back into Dewey's writings. First of all, Dewey did not advocate a teaching method that would set students loose to learn by their own devices. In Experience and Education Dewey expressly warned against such an overreaction to traditional methods. Educational method should engage the child's own aptitudes and interests, yes, but it cannot regard those aptitudes and interests as being of themselves sufficient for learning. Nor was Dewey against the teaching of subject matter in favor of the development of higher-order thinking skills. Rather, as previously noted, Dewey endorsed an

arrangement of subject matter that is natural to the child. If the child is personally engaged in the process of learning content, higher-order thought will develop as a consequence. A final point--Dewey was not an uncritical enthusiast of so-called scientifically directed instruction. In a 1922 New Republic article, "Education as Engineering," Dewey specifically warns against the use of scientific results as the paramount guide to educational method, and his language here could hardly be much stronger. He calls the efforts of this kind of his own day "pathetic." His point in that article alludes back to his earlier discussion of the aims of education in Democracy of Education. Aims or goals that are imposed from the outside upon educators, and do not arise out of the very complex set of circumstances that obtain in the classroom, are bound to do more harm than good. Dewey's prescription is simply this: hire the brightest and most knowledgeable teachers you can, and then let them loose in the classroom to experiment with different methods and report results. The one and only requirement that should be imposed from the start is absolute honesty: if something doesn't work well, educators need to be truthful about it.

When considering the possible application of Dewey's educational theory in higher education, I think we need to be quite cautious for a number of reasons. One is that Dewey's educational writings were always focused on the methods of primary education. His laboratory school at the University of Chicago was on the primary level, and it was out of this experience and his epistemological interests that his educational theory evolved. In addition, the methods of instruction that Dewey himself applied in college teaching were rather traditional. For the most part he lectured to his classes, and according to reports from his students his lectures were quite dense and difficult to understand. Dewey's own teaching methods, then, suggest his trust in an intellectual maturity of students on the college level that allowed for more traditional techniques. Another reason I think we should take care here is that many of the things that Dewey's educational theory might suggest for college instruction are things that for the most part we already do. If you're teaching science, give students labs so that they might have "hands on" experience of scientific technique. If you're teaching literature, engage students in discussion of the themes of the readings that allow them to explore those themes from their own standpoint. We should remember that Dewey was reacting against teaching methods--learning by rote memorization, seeing the student as utterly passive in the classroom--that would be considered odious to most educators today. Not taking stock of the many good things we do in the classroom can lead to the dangerous view that change in teaching methods is a good thing in its own right, while ignoring a point that Dewey always insisted on, that any meaningful progress must be in response to some well-defined problem.

So let me here take a problems-based approach, and raise a few worries about higher educational practice from a Deweyan perspective. First, I do have a concern about developments

that would place external demands or aims on the teacher in the classroom which are wrongheaded precisely because they do not stem directly from first-hand classroom experience. What worries me here in particular is the assessment movement in higher education. Any competent teacher of any subject matter will be concerned with inculcating a vast variety of understandings, skills, and cognitive sophistications in the student, and will choose assessment instruments that are appropriate to the full richness of those aims. When, however, we remove assessment from the classroom, and design an instrument to assess the intellectual product of many courses at once, we perforce are removed from the rich context of the classroom, and are likely to be led to more coarse, and shallower assessment instruments. Assessment instruments of this sort are not in themselves inimical to good education. Properly used they can offer some diagnostic check on the quality of education. My concern, however, is that if undue stress is placed on the idea that what must come out of instruction is what the assessment instruments test, then this may very well do harm to the richness and depth of course material.

Along the same lines of freeing the teacher from irrelevant constraints, I would have to say my most serious concerns have to do with the common practice today of using student evaluations to assess what is rather vaguely called "teacher effectiveness." My concern is well represented by a painfully honest article that appeared in Time magazine last January, written by an instructor of creative writing at Columbia University, Ben Marcus. In the article, Marcus reported his impression that basically he was seeing two kinds of students: some students come to his classes with an honest intent to work on improving their writing skills, while another group come to his classes already with the impression that they are very accomplished writers, and simply wish the instructor to confirm this impression. What Marcus has found is that if he systematically disappoints this second group of students, he pays for this in lower evaluations. Given his understandable interest in achieving promotion, the instructor decided to give these students what they want: generous and empty praise for their writing. When I read this article, a quotation came to mind from, besides Dewey, one of our great American philosophers and educators, Morris Cohen. When asked on the occasion of the celebration of his 30th year of teaching what in his view was the secret to his success as a teacher, Cohen replied "I have always told the students what they needed to hear, not what they wanted to hear." I am afraid that the undue stress that many colleges and universities have placed on student evaluations has led some faculty for quite understandable reasons to do precisely what Cohen did not do--tell students what they want to hear. To my mind there is no better single thing that we could do in higher education to improve the circumstances of instruction than simply to discontinue the use of raw student evaluation figures in teacher assessment.

One last worry I have, again from a Deweyan perspective, is that I don't think we as educators do enough to place our students in what Dewey calls the problematic situation, a situation where confusion is the rule, where investigation is open-ended, and where the path out of confusion is not at all well-marked. I read a story a couple of years ago about a professor of physics at a northeastern university who became convinced that his physics majors were not getting enough exposure to the cutting edge issues of his science. Accordingly he offered a seminar to these students dealing specifically with such questions. The sad outcome, he reported, was that every one of these students dropped physics as a major. I've found in my own experience that such reactions are not at all atypical. I am not in a position to say that I understand fully why students react in this way, but I am concerned that one reason is that we, as educators, are somewhat too concerned about not confusing our students. Of course there is the bad sort of confusion, the sort that will simply stop a student in his or her tracks, with no direction at all. But I think we should note that there is also good confusion, the sort that can impel a student towards deeper and more sophisticated ways of thinking. For Dewey, it was vitally important to allow students to deal with genuine problems, not ones that admit to a solution by the mechanical application of rules and procedures, but ones that require the creation of the rules, that require cutting the path through the underbrush, so to speak. I wonder if the aforementioned physics students were exposed to such problems from the earliest age whether they would have been more tolerant of the confusion, and more willing and able to take on the challenge that it poses. I would say indeed let's confuse our students, and perhaps in this way we can better promote what Dewey called "creative intelligence."