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EXPERIENTIAL LEARNING

Experience as The Source of Learning and Development

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The Process of Experiential Learning

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

T.S. Eliot, Four Quartets

Experiential learning theory offers a fundamentally different view of the learnin process from that of the behavioral theories of learning based on an empirica epistemology or the more implicit theories of learning that underlie traditiona educational methods, methods that for the most part are based on a rationa idealist epistemology. From this different perspective emerge some ver different prescriptions for the conduct of education, the proper relationship among learning, work, and other life activities, and the creation of knowledg itself.

This perspective on learning is called "experiential" for two reasons. Th first is to tie it clearly to its intellectual origins in the work of Dewey, Lewin, an Piaget. The second reason is to emphasize the central role that experienc plays in the learning process. This differentiates experiential learning theor from rationalist and other cognitive theories of learning that tend to give primar emphasis to acquisition, manipulation, and recall of abstract symbols, and fron behavioral learning theories that deny any role for consciousness and subjectiv experience in the learning process. It should be emphasized, however, that th aim of this work is not to pose experiential learning theory as a third alternativ to behavioral and cognitive learning theories, but rather to suggest throug

experiential learning theory a holistic integrative perspective on learning that combines experience, perception, cognition, and behavior. This chapter will describe the learning models of Lewin, Dewey, and Piaget and identify the common characteristics they share—characteristics that serve to define the nature of experiential learning.

THREE MODELS OF THE EXPERIENTIAL LEARNING PROCESS

The Lewinian Model of Action Research and Laboratory Training

In the techniques of action research and the laboratory method, learning, change, and growth are seen to be facilitated best by an integrated process that begins with here-and-now experience followed by collection of data and observations about that experience. The data are then analyzed and the conclusions of this analysis are fed back to the actors in the experience for their use in the modification of their behavior and choice of new experiences. Learning is thus conceived as a four-stage cycle, as shown in Figure 2.1. Immediate concrete experience is the basis for observation and reflection. These observations are assimilated into a "theory" from which new implications for action can be deduced. These implications or hypotheses then serve as guides in acting to create new experiences.

Two aspects of this learning model are particularly noteworthy. First is its emphasis on *here-and-now concrete experience* to validate and test abstract concepts. Immediate personal experience is the focal point for learning, giving life, texture, and subjective personal meaning to abstract concepts and at the same time providing a concrete, publicly shared reference point for testing the implications and validity of ideas created during the learning process. When human beings share an experience, they can share it fully, concretely, *and* abstractly.

Second, action research and laboratory training are based on *feedback processes*. Lewin borrowed the concept of feedback from electrical engineering to describe a social learning and problem-solving process that generates valid

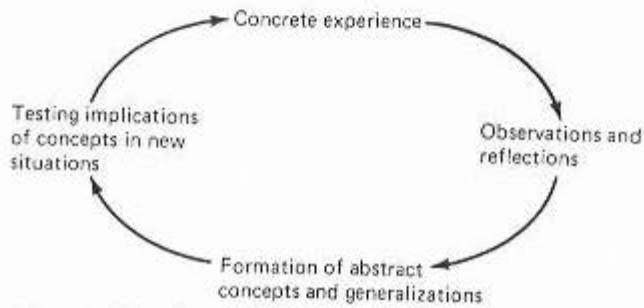

Figure 2.1 The Lewinian Experiential Learning Model

information to assess deviations from desired goals. This information feedback provides the basis for a continuous process of goal-directed action and evaluation of the consequences of that action. Lewin and his followers believed that much individual and organizational ineffectiveness could be traced ultimately to a lack of adequate feedback processes. This ineffectiveness results from an imbalance between observation and action—either from a tendency for individuals and organizations to emphasize decision and action at the expense of information gathering, or from a tendency to become bogged down by data collection and analysis. The aim of the laboratory method and action research is to integrate these two perspectives into an effective, goal-directed learning process.

Dewey's Model of Learning

John Dewey's model of the learning process is remarkably similar to the Lewinian model, although he makes more explicit the developmental nature of learning implied in Lewin's conception of it as a feedback process by describing how learning transforms the impulses, feelings, and desires of concrete experience into higher-order purposeful action.

> *The formation of purposes is, then, a rather complex intellectual operation. It involves: (1) observation of surrounding conditions; (2) knowledge of what has happened in similar situations in the past, a knowledge obtained partly by recollection and partly from the information, advice, and warning of those who have had a wider experience; and (3) judgment, which puts together what is observed and what is recalled to see what they signify. A purpose differs from an original impulse and desire through its translation into a plan and method of action based upon foresight of the consequences of action under given observed conditions in a certain way. . . . The crucial educational problem is that of procuring the postponement of immediate action upon desire until observation and judgment have intervened. . . . Mere foresight, even if it takes the form of accurate prediction, is not, of course, enough. The intellectual anticipation, the idea of consequences, must blend with desire and impulse to acquire moving force. It then gives direction to what otherwise is blind, while desire gives ideas impetus and momentum. [Dewey, 1938, p. 69]*

Dewey's model of experiential learning is graphically portrayed in Figure 2.2. We note in his description of learning a similarity with Lewin, in the emphasis on learning as a dialectic process integrating experience and concepts, observations, and action. The impulse of experience gives ideas their moving force, and ideas give direction to impulse. Postponement of immediate action is essential for observation and judgment to intervene, and action is essential for achievement of purpose. It is through the integration of these opposing but symbiotically related processes that sophisticated, mature purpose develops from blind impulse.

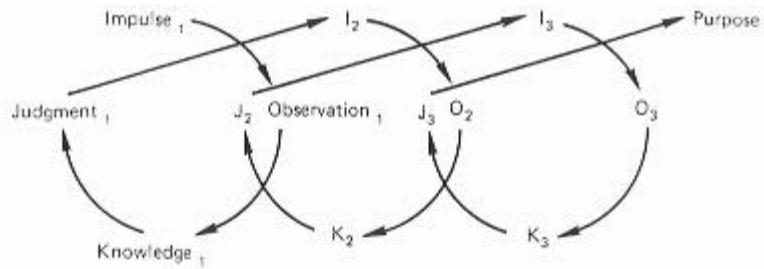

Figure 2.2 Dewey's Model of Experiential Learning

Piaget's Model of Learning and Cognitive Development

For Piaget, the dimensions of experience and concept, reflection, and action form the basic continua for the development of adult thought. Development from infancy to adulthood moves from a concrete phenomenal view of the world to an abstract constructionist view, from an active egocentric view to a reflective internalized mode of knowing. Piaget also maintained that these have been the major directions of development in scientific knowledge (Piaget, 1970). The learning process whereby this development takes place is a cycle of interaction between the individual and the environment that is similar to the learning models of Dewey and Lewin. In Piaget's terms, the key to learning lies in the mutual interaction of the process of *accommodation* of concepts or schemas to experience in the world and the process of *assimilation* of events and experiences from the world into existing concepts and schemas. Learning or, in Piaget's term, intelligent adaptation results from a balanced tension between these two processes. When accommodation processes dominate assimilation, we have imitation—the molding of oneself to environmental contours or constraints. When assimilation predominates over accommodation, we have play—the imposition of one's concept and images without regard to environmental realities. The process of cognitive growth from concrete to abstract and from active to reflective is based on this continual transaction between assimilation and accommodation, occurring in successive stages, each of which incorporates what has gone before into a new, higher level of cognitive functioning.

Piaget's work has identified four major stages of cognitive growth that emerge from birth to about the age of 14-16. In the first stage (0-2 years), the child is predominantly concrete and active in his learning style. This stage is called the sensory-motor stage. Learning is predominantly enactive through feeling, touching, and handling. Representation is based on action—for example, "a hole is to dig." Perhaps the greatest accomplishment of this period is the development of goal-oriented behavior: "The sensory-motor period shows a remarkable evolution from non-intentional habits to experimental and exploratory activity which is obviously intentional or goal oriented" (Flavell, 1963, p. 107). Yet the child has few schemes or theories into which he can assimilate events, and as a result, his primary stance toward the world is

accommodative. Environment plays a major role in shaping his ideas and intentions. Learning occurs primarily through the association between stimulus and response.

In the second stage (2-6 years), the child retains his concrete orientation but begins to develop a reflective orientation as he begins to internalize actions, converting them to images. This is called the representational stage. Learning is now predominantly ikonic in nature, through the manipulation of observations and images. The child is now freed somewhat from his immersion in immediate experience and, as a result, is free to play with and manipulate his images of the world. At this stage, the child's primary stance toward the world is divergent. He is captivated with his ability to collect images and to view the world from different perspectives. Consider Bruner's description of the child at this stage:

> *What appears next in development is a great achievement. Images develop an autonomous status, they become great summarizers of action. By age three the child has become a paragon of sensory distractibility. He is victim of the laws of vividness, and his action pattern is a series of encounters with this bright thing which is then replaced by that chromatically splendid one, which in turn gives way to the next noisy one. And so it goes. Visual memory at this stage seems to be highly concrete and specific. What is intriguing about this period is that the child is a creature of the moment; the image of the moment is sufficient and it is controlled by a single feature of the situation. [Bruner, 1966b, p. 13]*

In the third stage (7-11 years), the intensive development of abstract symbolic powers begins. The first symbolic developmental stage Piaget calls the stage of concrete operations. Learning in this stage is governed by the logic of classes and relations. The child in this stage further increases his independence from his immediate experiential world through the development of inductive powers:

> *The structures of concrete operations are, to use a homely analogy, rather like parking lots whose individual parking spaces are now occupied and now empty; the spaces themselves endure, however, and leave their owner to look beyond the cars actually present toward potential, future occupants of the vacant and to-be-vacant spaces. [Flavell, 1963, p. 203]*

Thus, in contrast to the child in the sensory-motor stage whose learning style was dominated by accommodative processes, the child at the stage of concrete operations is more assimilative in his learning style. He relies on concepts and theories to select and give shape to his experiences.

Piaget's final stage of cognitive development comes with the onset of adolescence (12-15 years). In this stage, the adolescent moves from symbolic processes based on concrete operations to the symbolic processes of representational logic, the stage of formal operations. He now returns to a more active orientation, but it is an active orientation that is now modified by the development of the reflective and abstract power that preceded it. The

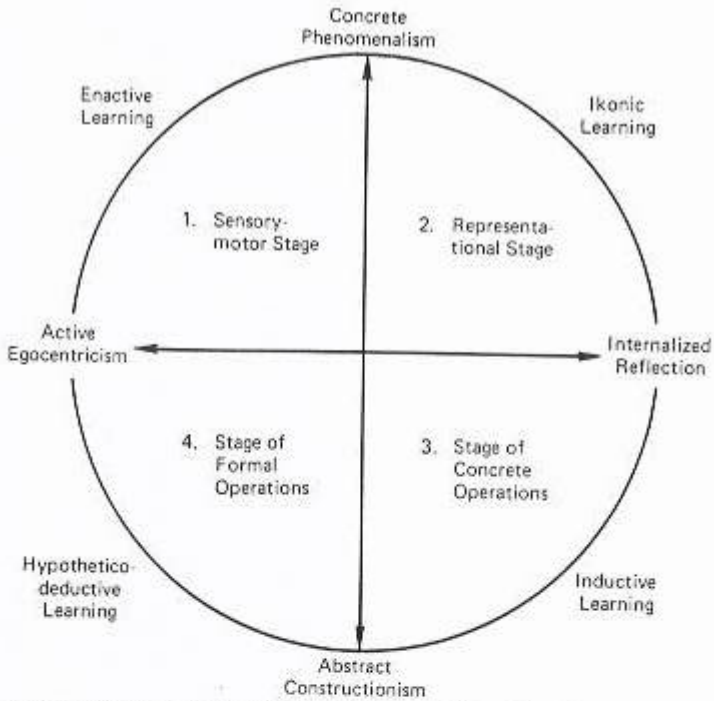

Figure 2.3 Piaget's Model of Learning and Cognitive Development

symbolic powers he now possesses enable him to engage in hypothetico-deductive reasoning. He develops the possible implications of his theories and proceeds to experimentally test which of these are true. Thus his basic learning style is convergent, in contrast to the divergent orientation of the child in the representational stage:

> *We see, then, that formal thought is for Piaget not so much this or that specific behavior as it is a generalized orientation, sometimes explicit and sometimes implicit, towards problem solving; an orientation towards organizing data (combinatorial analysis), towards isolation and control of variables, towards the hypothetical, and towards logical justification and proof. [Flavell, 1963, p. 211]*

This brief outline of Piaget's cognitive development theory identifies those basic developmental processes that shape the basic learning process of adults (see Figure 2.3).

CHARACTERISTICS OF EXPERIENTIAL LEARNING

There is a great deal of similarity among the models of the learning process discussed above.[1] Taken together, they form a unique perspective on learning

[1]There are also points of disagreement, which will be explored more fully in the next chapter.

and development, a perspective that can be characterized by the following propositions, which are shared by the three major traditions of experiential learning.

Learning Is Best Conceived as a Process, Not in Terms of Outcomes

The emphasis on the process of learning as opposed to the behavioral outcomes distinguishes experiential learning from the idealist approaches of traditional education and from the behavioral theories of learning created by Watson, Hull, Skinner, and others. The theory of experiential learning rests on a different philosophical and epistemological base from behaviorist theories of learning and idealist educational approaches. Modern versions of these latter approaches are based on the empiricist philosophies of Locke and others. This epistemology is based on the idea that there are elements of consciousness—mental atoms, or, in Locke's term "simple ideas"—that always remain the same. The various combinations and associations of these consistent elements form our varying patterns of thought. It is the notion of constant, fixed elements of thought that has had such a profound effect on prevailing approaches to learning and education, resulting in a tendency to define learning in terms of its outcomes, whether these be knowledge in an accumulated storehouse of facts or habits representing behavioral responses to specific stimulus conditions. If ideas are seen to be fixed and immutable, then it seems possible to measure how much someone has learned by the amount of these fixed ideas the person has accumulated.

Experiential learning theory, however, proceeds from a different set of assumptions. Ideas are not fixed and immutable elements of thought but are formed and re-formed through experience. In all three of the learning models just reviewed, learning is described as a process whereby concepts are derived from and continuously modified by experience. No two thoughts are ever the same, since experience always intervenes. Piaget (1970), for example, considers the creation of new knowledge to be the central problem of genetic epistemology, since each act of understanding is the result of a process of continuous construction and invention through the interaction processes of assimilation and accommodation (compare Chapter 5, p. 99). Learning is an emergent process whose outcomes represent only historical record, not knowledge of the future.

When viewed from the perspective of experiential learning, the tendency to define learning in terms of outcomes can become a definition of nonlearning, in the process sense that the failure to modify ideas and habits as a result of experience is maladaptive. The clearest example of this irony lies in the behaviorist axiom that the strength of a habit can be measured by its resistance to extinction. That is, the more I have "learned" a given habit, the longer I will persist in behaving that way when it is no longer rewarded. Similarly, there are those who feel that the orientations that conceive of learning in terms of

outcomes as opposed to a process of adaptation have had a negative effect on the educational system. Jerome Bruner, in his influential book, *Toward a Theory of Instruction*, makes the point that the purpose of education is to stimulate inquiry and skill in the process of knowledge getting, not to memorize a body of knowledge: "Knowing is a process, not a product" (1966, p. 72). Paulo Freire calls the orientation that conceives of education as the transmission of fixed content the "banking" concept of education:

> *Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiques and makes deposits which the students patiently receive, memorize, and repeat. This is the "banking" concept of education, in which the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits. They do, it is true, have the opportunity to become collectors or cataloguers of the things they store. But in the last analysis, it is men themselves who are filed away through the lack of creativity, transformation, and knowledge in this (at best) misguided system. For apart from inquiry, apart from the praxis, men cannot be truly human. Knowledge emerges only through invention and reinvention, through the restless, impatient, continuing, hopeful inquiry men pursue in the world, with the world, and with each other. [Friere, 1974, p. 58]*

Learning Is a Continuous Process Grounded in Experience

Knowledge is continuously derived from and tested out in the experiences of the learner. William James (1890), in his studies on the nature of human consciousness, marveled at the fact that consciousness is continuous. How is it, he asked, that I awake in the morning with the same consciousness, the same thoughts, feelings, memories, and sense of who I am that I went to sleep with the night before? Similarly for Dewey, continuity of experience was a powerful truth of human existence, central to the theory of learning:

> *. . . the principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after. . . . As an individual passes from one situation to another, his world, his environment, expands or contracts. He does not find himself living in another world but in a different part or aspect of one and the same world. What he 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. [Dewey, 1938, pp. 35, 44]*

Although we are all aware of the sense of continuity in consciousness and experience to which James and Dewey refer, and take comfort from the predictability and security it provides, there is on occasion in the penumbra of that awareness an element of doubt and uncertainty. How do I reconcile my own sense of continuity and predictability with what at times appears to be a

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chaotic and unpredictable world around me? I move through my daily round of tasks and meetings with a fair sense of what the issues are, of what others are saying and thinking, and with ideas about what actions to take. Yet I am occasionally upended by unforeseen circumstances, miscommunications, and dreadful miscalculations. It is in this interplay between expectation and experience that learning occurs. In Hegel's phrase, "Any experience that does not violate expectation is not worthy of the name experience." And yet somehow, the rents that these violations cause in the fabric of my experience are magically repaired, and I face the next day a bit changed but still the same person.

That this is a *learning* process is perhaps better illustrated by the nonlearning postures that can result from the interplay between expectation and experience. To focus so sharply on continuity and certainty that one is blinded to the shadowy penumbra of doubt and uncertainty is to risk dogmatism and rigidity, the inability to learn from new experiences. Or conversely, to have continuity continuously shaken by the vicissitudes of new experience is to be left paralyzed by insecurity, incapable of effective action. From the perspective of epistemological philosophy, Pepper (1942) shows that both these postures—dogmatism and absolute skepticism—are inadequate foundations for the creation of valid knowledge systems. He proposes instead that an attitude of provisionalism, or what he calls partial skepticism, be the guide for inquiry and learning (compare Chapter 5, p. 107).

The fact that learning is a continuous process grounded in experience has important educational implications. Put simply, it implies that all learning is relearning. How easy and tempting it is in designing a course to think of the learner's mind as being as blank as the paper on which we scratch our outline. Yet this is not the case. Everyone enters every learning situation with more or less articulate ideas about the topic at hand. We are all psychologists, historians, and atomic physicists. It is just that some of our theories are more crude and incorrect than others. But to focus solely on the refinement and validity of these theories misses the point. The important point is that the people we teach have held these beliefs whatever their quality and that until now they have used them whenever the situation called for them to be atomic physicists, historians, or whatever.

Thus, one's job as an educator is not only to implant new ideas but also to dispose of or modify old ones. In many cases, resistance to new ideas stems from their conflict with old beliefs that are inconsistent with them. If the education process begins by bringing out the learner's beliefs and theories, examining and testing them, and then integrating the new, more refined ideas into the person's belief systems, the learning process will be facilitated. Piaget (see Elkind, 1970, Chapter 3) has identified two mechanisms by which new ideas are adopted by an individual—integration and substitution. Ideas that evolve through integration tend to become highly stable parts of the person's conception of the world. On the other hand, when the content of a concept changes by means of substitution, there is always the possibility of a reversion to

the earlier level of conceptualization and understanding, or to a dual theory of the world where espoused theories learned through substitution are incongruent with theories-in-use that are more integrated with the person's total conceptual and attitudinal view of the world. It is this latter outcome that stimulated Argyris and Schon's inquiry into the effectiveness of professional education:

> *We thought the trouble people have in learning new theories may stem not so much from the inherent difficulty of the new theories as from the existing theories people have that already determine practices. We call their operational theories of action* theories-in-use *to distinguish them from the* espoused theories *that are used to describe and justify behavior. We wondered whether the difficulty in learning new theories of action is related to a disposition to protect the old theory-in-use. [Argyris and Schon, 1974, p. viii]*

The Process of Learning Requires the Resolution of Conflicts Between Dialectically Opposed Modes of Adaptation to the World

Each of the three models of experiential learning describes conflicts between opposing ways of dealing with the world, suggesting that learning results from resolution of these conflicts. The Lewinian model emphasizes two such dialectics—the conflict between concrete experience and abstract concepts and the conflict between observation and action.[2] For Dewey, the major dialectic is between the impulse that gives ideas their "moving force" and reason that gives desire its direction. In Piaget's framework, the twin processes of accommodation of ideas to the external world and assimilation of experience into existing conceptual structures are the moving forces of cognitive development. In Paulo Freire's work, the dialectic nature of learning and adaptation is encompassed in his concept of *praxis*, which he defines as "reflection and action upon the world in order to transform it" (1974, p. 36). Central to the concept of praxis is the process of "naming the world," which is both active—in the sense that naming something transforms it—and reflective—in that our choice of words gives meaning to the world around us. This process of naming the world is accomplished through dialogue among equals, a joint process of inquiry and learning that Freire sets against the banking concept of education described earlier:

[2]The concept of dialectic relationship is used advisedly in this work. The long history and changing usages of this term, and particularly the emotional and idealogical connotations attending its usage in some contexts, may cause some confusion for the reader. However, no other term expresses as well the relationship between learning orientations described here—that of mutually opposed and conflicting processes the results of each of which cannot be explained by the other, but whose merger through confrontation of the conflict between them results in a higher order process that transcends and encompasses them both. This definition comes closest to Hegel's use of the term but does not imply total acceptance of the Hegelian epistemology (compare Chapter 5, p. 117).

As we attempt to analyze dialogue as a human phenomenon, we discover something which is the essence of dialogue itself: the word. *But the word is more than just an instrument which makes dialogue possible; accordingly, we must seek its constitutive elements. Within the word we find two dimensions, reflection and action, in such radical interaction that if one is sacrificed—even in part—the other immediately suffers. There is no true word that is not at the same time a praxis. Thus, to speak a true word is to transform the world.*

An unauthentic word, one which is unable to transform reality, results when dichotomy is imposed upon its constitutive elements. When a word is deprived of its dimension of action, reflection automatically suffers as well; and the word is changed into idle chatter, into verbalism, *into an alienated and alienating "blah." It becomes an empty word, one which cannot denounce the world, for denunciation is impossible without a commitment to transform, and there is no transformation without action.*

On the other hand, if action is emphasized exclusively, to the detriment of reflection, the word is converted into activism. *The latter—action for action's sake—negates the true praxis and makes dialogue impossible. Either dichotomy, by creating unauthentic forms of existence, creates also unauthentic forms of thought, which reinforce the original dichotomy.*

Human existence cannot be silent, nor can it be nourished by false words, but only by true words, with which men transform the world. To exist, humanly, is to name *the world, to change it. Once named, the world in its turn reappears to the namers as a problem and requires of them a new* naming. *Men are not built in silence, but in word, in work, in action-reflection.*

But while to say the true word—which is work, which is praxis—is to transform the world, saying that word is not the privilege of some few men, but the right of every man. Consequently, no one can say a true word alone—nor can he say it for another, in a prescriptive act which robs others of their words. [Freire, 1974, pp. 75, 76]

All the models above suggest the idea that learning is by its very nature a tension- and conflict-filled process. New knowledge, skills, or attitudes are achieved through confrontation among four modes of experiential learning. Learners, if they are to be effective, need four different kinds of abilities—*concrete experience* abilities (CE), *reflective observation* abilities (RO), *abstract conceptualization* abilities (AC), and *active experimentation* (AE) abilities. That is, they must be able to involve themselves fully, openly, and without bias in new experiences (CE). They must be able to reflect on and observe their experiences from many perspectives (RO). They must be able to create concepts that integrate their observations into logically sound theories (AC), and they must be able to use these theories to make decisions and solve problems (AE). Yet this ideal is difficult to achieve. How can one act and reflect at the same time? How can one be concrete and immediate and still be theoretical? Learning requires abilities that are polar opposites, and the learner, as a result, must continually choose which set of learning abilities he or she will bring to bear in any specific learning situation. More specifically, there are two primary dimensions to the learning process. The first dimension represents the

concrete experiencing of events at one end and abstract conceptualization at the other. The other dimension has active experimentation at one extreme and reflective observation at the other. Thus, in the process of learning, one moves in varying degrees from actor to observer, and from specific involvement to general analytic detachment.

In addition, the *way* in which the conflicts among the dialectically opposed modes of adaptation get resolved determines the level of learning that results. If conflicts are resolved by suppression of one mode and/or dominance by another, learning tends to be specialized around the dominant mode and limited in areas controlled by the dominated mode. For example, in Piaget's model, imitation is the result when accommodation processes dominate, and play results when assimilation dominates. Or for Freire, dominance of the active mode results in "activism," and dominance of the reflective mode results in "verbalism."

However, when we consider the higher forms of adaptation—the process of creativity and personal development—conflict among adaptive modes needs to be confronted and integrated into a creative synthesis. Nearly every account of the creative process, from Wallas's (1926) four-stage model of incorporation, incubation, insight, and verification, has recognized the dialectic conflicts involved in creativity. Bruner (1966a), in his essay on the conditions of creativity, emphasizes the dialectic tension between abstract detachment and concrete involvement. For him, the creative act is a product of detachment and commitment, of passion and decorum, and of a freedom to be dominated by the object of one's inquiry. At the highest stages of development. the adaptive commitment to learning and creativity produces a strong need for integration of the four adaptive modes. Development in one mode precipitates development in the others. Increases in symbolic complexity, for example, refine and sharpen both perceptual and behavioral possibilities. Thus, complexity and the integration of dialectic conflicts among the adaptive modes are the hallmarks of true creativity and growth.

Learning Is an Holistic Process of Adaptation to the World

Experiential learning is not a molecular educational concept but rather is a molar concept describing the central process of human adaptation to the social and physical environment. It is a holistic concept much akin to the Jungian theory of psychological types (Jung, 1923), in that it seeks to describe the emergence of basic life orientations as a function of dialectic tensions between basic modes of relating to the world. To learn is not the special province of a single specialized realm of human functioning such as cognition or perception. It involves the integrated functioning of the total organism—thinking, feeling, perceiving, and behaving.

This concept of holistic adaptation is somewhat out of step with current research trends in the behavioral sciences. Since the early years of this century and the decline of what Gordon Allport called the "simple and sovereign"

theories of human behavior, the trend in the behavioral sciences has been away from theories such as those of Freud and his followers that proposed to explain the totality of human functioning by focusing on the interrelatedness among human processes such as thought, emotion, perception, and so on. Research has instead tended to specialize in more detailed exploration and description of particular processes and subprocesses of human adaptation—perception, person perception, attribution, achievement motivation, cognition, memory—the list could go on and on. The fruit of this labor has been bountiful. Because of this intensive specialized research, we now know a vast amount about human behavior, so much that any attempt to integrate and do justice to all this diverse knowledge seems impossible. Any holistic theory proposed today could not be simple and would certainly not be sovereign. Yet if we are to understand human behavior, particularly in any practical way, we must in some way put together all the pieces that have been so carefully analyzed. In addition to knowing how we think and how we feel, we must also know when behavior is governed by thought and when by feeling. In addition to addressing the nature of specialized human functions, experiential learning theory is also concerned with how these functions are integrated by the person into a holistic adaptive posture toward the world.

Learning is *the* major process of human adaptation. This concept of learning is considerably broader than that commonly associated with the school classroom. It occurs in all human settings, from schools to the workplace, from the research laboratory to the management board room, in personal relationships and the aisles of the local grocery. It encompasses all life stages, from childhood to adolescence, to middle and old age. Therefore it encompasses other, more limited adaptive concepts such as creativity, problem solving, decision making, and attitude change that focus heavily on one or another of the basic aspects of adaptation. Thus, creativity research has tended to focus on the divergent (concrete and reflective) factors in adaptation such as tolerance for ambiguity, metaphorical thinking, and flexibility, whereas research on decision making has emphasized more convergent (abstract and active) adaptive factors such as the rational evaluation of solution alternatives.

The cyclic description of the experiential learning process is mirrored in many of the specialized models of the adaptive process. The common theme in all these models is that all forms of human adaptation approximate scientific inquiry, a point of view articulated most thoroughly by the late George Kelly (1955). Dewey, Lewin, and Piaget in one way or another seem to take the scientific method as their model for the learning process; or to put it another way, they see in the scientific method the highest philosophical and technological refinement of the basic processes of human adaptation. The scientific method, thus, provides a means for describing the holistic integration of all human functions.

Figure 2.4 shows the experiential learning cycle in the center circle and a model of the scientific inquiry process in the outer circle (Kolb, 1978), with models of the problem-solving process (Pounds, 1965), the decision-making

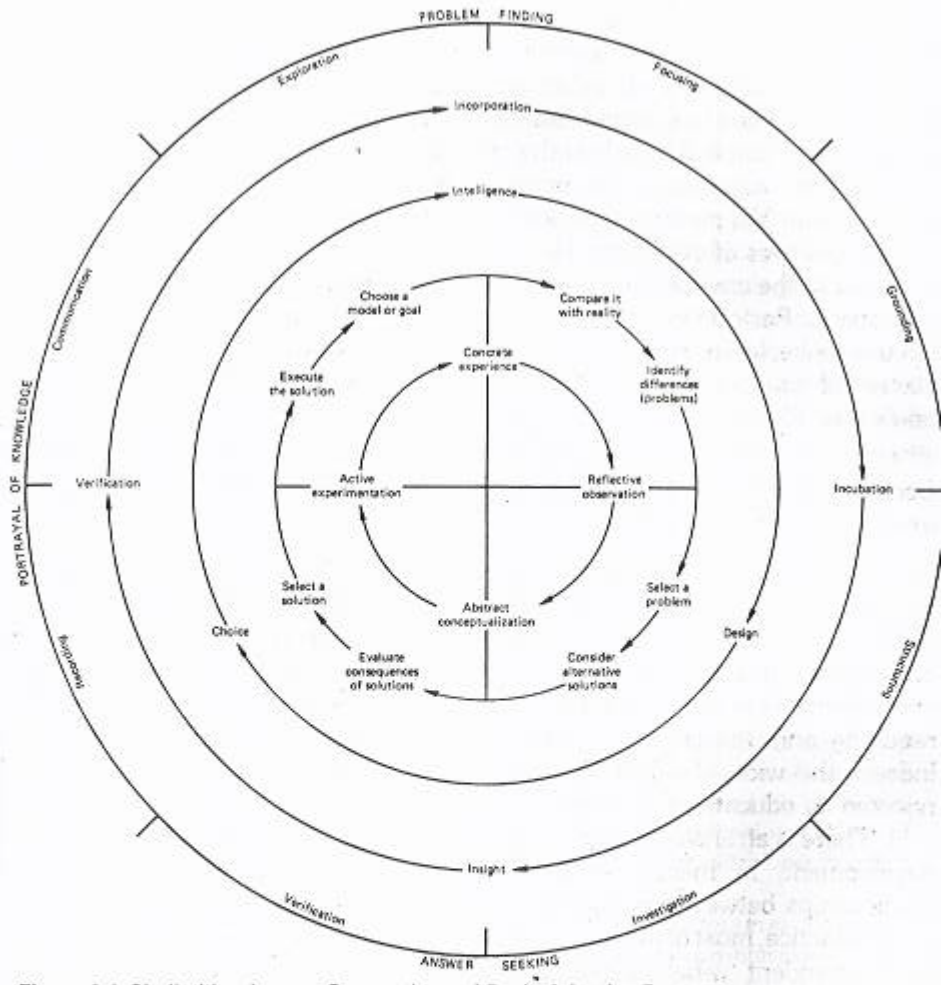

Figure 2.4 Similarities Among Conceptions of Basic Adaptive Processes: Inquiry/Research, Creativity, Decision Making, Problem Solving, Learning

process (Simon, 1947), and the creative process (Wallas, 1926) in between. Although the models all use different terms, there is a remarkable similarity in concept among them. This similarity suggests that there may be great payoff in the integration of findings from these specialized areas into a single general adaptive model such as that proposed by experiential learning theory. Bruner's work on a theory of instruction (1966b) shows one example of this potential payoff. His integration of research on cognitive processes, problem solving, and learning theory provided a rich new perspective for the conduct of education.

When learning is conceived as a holistic adaptive process, it provides conceptual bridges across life situations such as school and work, portraying learning as a continuous, lifelong process. Similarly, this perspective highlights the similarities among adaptive/learning activities that are commonly called by

specialized names—learning, creativity, problem solving, decision making, and scientific research. Finally, learning conceived holistically includes adaptive activities that vary in their extension through time and space. Typically, an immediate reaction to a limited situation or problem is not thought of as learning but as *performance*. Similarly at the other extreme, we do not commonly think of long-term adaptations to one's total life situation as learning but as *development*. Yet performance, learning, and development, when viewed from the perspectives of experiential learning theory, form a continuum of adaptive postures to the environment, varying only in their degree of extension in time and space. Performance is limited to short-term adaptations to immediate circumstance, learning encompasses somewhat longer-term mastery of generic classes of situations, and development encompasses lifelong adaptations to one's total life situation (compare Chapter 6).

Learning Involves Transactions Between the Person and the Environment

So stated, this proposition must seem obvious. Yet strangely enough, its implications seem to have been widely ignored in research on learning and practice in education, replaced instead by a person-centered psychological view of learning. The casual observer of the traditional educational process would undoubtedly conclude that learning was primarily a personal, internal process requiring only the limited environment of books, teacher, and classroom. Indeed, the wider "real-world" environment at times seems to be actively rejected by educational systems at all levels.

There is an analogous situation in psychological research on learning and development. In theory, stimulus-response theories of learning describe relationships between environmental stimuli and responses of the organism. But in practice, most of this research involves treating the environmental stimuli as independent variables manipulated artificially by the experimenter to determine their effect on dependent response characteristics. This approach has had two outcomes. The first is a tendency to perceive the person-environment relationship as one-way, placing great emphasis on how environment shapes behavior with little regard for how behavior shapes the environment. Second, the models of learning are essentially decontextualized and lacking in what Egon Brunswick (1943) called ecological validity. In the emphasis on scientific control of environmental conditions, laboratory situations were created that bore little resemblance to the environment of real life, resulting in empirically validated models of learning that accurately described behavior in these artificial settings but could not easily be generalized to subjects in their natural environment. It is to me not surprising that the foremost proponent of this theory of learning would be fascinated by the creation of Utopian societies such as Walden II (Skinner, 1948); for the only way to apply the results of these studies is to make the world a laboratory, subject to "experimenter" control (compare Elms, 1981).

Similar criticisms have been made of developmental psychology. Piaget's work, for example, has been criticized for its failure to take account of environmental and cultural circumstances (Cole, 1971). Speaking of developmental psychology in general, Bronfenbrenner states, "Much of developmental psychology as it now exists is *the science of the strange behavior of children in strange situations with strange adults for the briefest possible periods of time*" (1977, p. 19).

In experiential learning theory, the transactional relationship between the person and the environment is symbolized in the dual meanings of the term *experience*—one subjective and personal, referring to the person's internal state, as in "the experience of joy and happiness," and the other objective and environmental, as in, "He has 20 years of experience on this job." These two forms of experience interpenetrate and interrelate in very complex ways, as, for example, in the old saw, "He doesn't have 20 years of experience, but one year repeated 20 times." Dewey describes the matter this way:

> *Experience does not go on simply inside a person. It does go on there, for it influences the formation of attitudes of desire and purpose. But this is not the whole of the story. Every genuine experience has an active side which changes in some degree the objective conditions under which experiences are had. The difference between civilization and savagery, to take an example on a large scale, is found in the degree in which previous experiences have changed the objective conditions under which subsequent experiences take place. The existence of roads, of means of rapid movement and transportation, tools, implements, furniture, electric light and power, are illustrations. Destroy the external conditions of present civilized experience, and for a time our experience would relapse into that of barbaric peoples. . . .*
>
> *The word "interaction" assigns equal rights to both factors in experience—objective and internal conditions. Any normal experience is an interplay of these two sets of conditions. Taken together . . . they form what we call a* situation.
>
> *The statement that individuals live in a world means, in the concrete, that they live in a series of situations. And when it is said that they live* in *these situations, the meaning of the word "in" is different from its meaning when it is said that pennies are "in" a pocket or paint is "in" a can. It means, once more, that interaction is going on between an individual and objects and other persons. The conceptions of* situation *and of* interaction *are inseparable from each other. An experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment, whether the latter consists of persons with whom he is talking about some topic or event, the subject talked about being also a part of the situation; the book he is reading (in which his environing conditions at the time may be England or ancient Greece or an imaginary region); or the materials of an experiment he is performing. The environment, in other words, is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had. Even when a person builds a castle in the air he is interacting with the objects which he constructs in fancy. [Dewey, 1938, p. 39, 42-43]*

Although Dewey refers to the relationship between the objective and subjective conditions of experience as an "interaction," he is struggling in the last portion of the quote above to convey the special, complex nature of the relationship. The word *transaction* is more appropriate than *interaction* to describe the relationship between the person and the environment in experiential learning theory, because the connotation of interaction is somehow too mechanical, involving unchanging separate entities that become intertwined but retain their separate identities. This is why Dewey attempts to give special meaning to the word *in*. The concept of transaction implies a more fluid, interpenetrating relationship between objective conditions and subjective experience, such that once they become related, both are essentially changed.

Lewin recognized this complexity, even though he chose to sidestep it in his famous theoretical formulation, $B = f(P,E)$, indicating that behavior is a function of the person and the environment without any specification as to the specific mathematical nature of that function. The position taken in this work is similar to that of Bandura (1978)—namely, that personal characteristics, environmental influences, and behavior all operate in reciprocal determination, each factor influencing the others in an interlocking fashion. The concept of reciprocally determined transactions between person and learning environment is central to the laboratory-training method of experiential learning. Learning in T-groups is seen to result not simply from responding to a fixed environment but from the active creation by the learners of situations that meet their learning objectives:

> *The essence of this learning experience is a transactional process in which the members negotiate as each attempts to influence or control the stream of events and to satisfy his personal needs. Individuals learn to the extent that they expose their needs, values, and behavior patterns so that perceptions and reactions can be exchanged. Behavior thus becomes the currency for transaction. The amount each invests helps to determine the return. [Bradford, 1964, p. 192]*

Learning in this sense is an active, self-directed process that can be applied not only in the group setting but in everyday life.

Learning Is the Process of Creating Knowledge

To understand learning, we must understand the nature and forms of human knowledge and the processes whereby this knowledge is created. It has already been emphasized that this process of creation occurs at all levels of sophistication, from the most advanced forms of scientific research to the child's discovery that a rubber ball bounces. Knowledge is the result of the transaction between social knowledge and personal knowledge. The former, as Dewey noted, is the civilized objective accumulation of previous human cultural experience, whereas the latter is the accumulation of the individual person's

subjective life experiences. Knowledge results from the transaction between these objective and subjective experiences in a process called learning. Hence, to understand knowledge, we must understand the psychology of the learning process, and to understand learning, we must understand epistemology—the origins, nature, methods, and limits of knowledge. Piaget makes the following comments on these last points:

> *Psychology thus occupies a key position, and its implications become increasingly clear. The very simple reason for this is that if the sciences of nature explain the human species, humans in turn explain the sciences of nature, and it is up to psychology to show us how. Psychology, in fact, represents the junction of two opposite directions of scientific thought that are dialectically complementary. It follows that the system of sciences cannot be arranged in a linear order, as many people beginning with Auguste Comte have attempted to arrange them. The form that characterizes the system of sciences is that of a circle, or more precisely that of a spiral as it becomes ever larger. In fact, objects are known only through the subject, while the subject can know himself or herself only by acting on objects materially and mentally. Indeed, if objects are innumerable and science indefinitely diverse, all knowledge of the subject brings us back to psychology, the science of the subject and the subject's actions.*
>
> *. . . it is impossible to dissociate psychology from epistemology . . . how is knowledge acquired, how does it increase, and how does it become organized or reorganized? . . . The answers we find, and from which we can only choose by more or less refining them, are necessarily of the following three types: Either knowledge comes exclusively from the object, or it is constructed by the subject alone, or it results from multiple interactions between the subject and the object—but what interactions and in what form? Indeed, we see at once that these are epistemological solutions stemming from empiricism, apriorism, or diverse interactionism. . . . [Piaget, 1978, p. 651]*

It is surprising that few learning and cognitive researchers other than Piaget have recognized the intimate relationship between learning and knowledge and hence recognized the need for epistemological as well as psychological inquiry into these related processes. In my own research and practice with experiential learning, I have been impressed with the very practical ramifications of the epistemological perspective. In teaching, for example, I have found it essential to take into account the nature of the subject matter in deciding how to help students learn the material at hand. Trying to develop skills in empathic listening is a different educational task, requiring a different teaching approach from that of teaching fundamentals of statistics. Similarly, in consulting work with organizations, I have often seen barriers to communication and problem solving that at root are epistemologically based—that is, based on conflicting assumptions about the nature of knowledge and truth.

The theory of experiential learning provides a perspective from which to approach these practical problems, suggesting a typology of different knowledge systems that results from the way the dialectic conflicts between adaptive modes of concrete experience and abstract conceptualization and the

modes of active experimentation and reflective observation are characteristically resolved in different fields of inquiry (compare Chapter 5). This approach draws on the work of Stephen Pepper (1942, 1966), who proposes a system for describing the different viable forms of social knowledge. This system is based on what Pepper calls world hypotheses. World hypotheses correspond to metaphysical systems that define assumptions and rules for the development of refined knowledge from common sense. Pepper maintains that all knowledge systems are refinements of common sense based on different assumptions about the nature of knowledge and truth. In this process of refinement he sees a basic dilemma. Although common sense is always applicable as a means of explaining an experience, it tends to be imprecise. Refined knowledge, on the other hand, is precise but limited in its application or generalizability because it is based on assumptions or world hypotheses. Thus, common sense requires the criticism of refined knowledge, and refined knowledge requires the security of common sense, suggesting that all social knowledge requires an attitude of partial skepticism in its interpretation.

SUMMARY: A DEFINITION OF LEARNING

Even though definitions have a way of making things seem more certain than they are, it may be useful to summarize this chapter on the characteristics of the experiential learning process by offering a working definition of learning.[3] *Learning is the process whereby knowledge is created through the transformation of experience.* This definition emphasizes several critical aspects of the learning process as viewed from the experiential perspective. First is the emphasis on the process of adaptation and learning as opposed to content or outcomes. Second is that knowledge is a transformation process, being continuously created and recreated, not an independent entity to be acquired or transmitted. Third, learning transforms experience in both its objective and subjective forms. Finally, to understand learning, we must understand the nature of knowledge, and vice versa.

[3]From this point on, I will drop the modifier "experiential" in referring to the learning process described in this chapter. When other theories of learning are discussed, they will be identified as