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# Exploring the World of Learning Theory

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## Why Explore Learning Theory?

A good question. Perhaps you shouldn't. If you have no questions about the quality of Human Resources Development* in your organization, if you are sure it's the best it can be, I'd suggest you cancel your reservation and get a refund.

But if you are a policy-level executive, you may have such questions as these: Are our HRD activities based on assumptions about human nature and organizational life that are congruent with the assumptions on which our management policies are based? Is our HRD program contributing to long-run gains in our human capital, or only short-run cost reduction? Why are our HRD personnel making the decisions they are concerning priorities, activities, methods and techniques, materials, and the use of outside resources (consultants, package pro-

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*Human Resources Development (HRD) is used in this book with the broadest possible meaning and includes adult and continuing education in educational institutions, business and industry, government agencies, health agencies, voluntary organizations, religious institutions, labor unions, mass media, and by commercial providers.

grams, hardware, software, and university courses)? Are these the best decisions? How can I assess whether or not or to what degree the HRD program is producing the results I want?

If you are an HRD administrator, to use the breakdown of the roles of the human resource developer presented by Nadler in the foundational book in this series [Nadler, 1970, p. 151], you may have all of the above questions plus such others as: Which learning theory is most appropriate for which kind of learning, or should our entire HRD program be faithful to a single learning theory? How do I find out what learning theories are being followed by the various consultants, package programs, and other outside resources available to us? What difference might their theoretical orientation make in our HRD program? What are the implications of the various learning theories for our program development, selection and training of instructional personnel, administrative policies and practices, facilities, and program evaluation?

If you are a learning specialist (instructor, curriculum builder, methods and materials developer), you may have some of the above questions plus such others as: How can I increase my effectiveness as a learning specialist? Which techniques will be most effective for particular situations? Which learning theories are most congruent with my own view of human nature and the purpose of education? What are the implications of the various learning theories for my own role and performance?

If you are a consultant (advocate, expert, stimulator, change agent), you may have some of the above questions plus such others as: Which learning theory should I advocate under what circumstances? How shall I explain the nature and consequences of the various learning theories to my clients? What are the implications of the various learning theories for total organizational development? Which learning theory is most congruent with my conception of the role of consultant?

A good theory should provide both explanations of phenomena and guidelines for action. But theories about human behavior also carry with them assumptions about human nature, the purpose of education, and desirable values. The better you understand the various theories, therefore, the better decisions you will be able to make regarding learning experiences that will achieve the ends you wish to achieve.

## What Is a Theory?

*Webster's Seventh New Intercollegiate Dictionary* gives five definitions: (1) the analysis of a set of facts in their relation to one another; (2) the general or abstract principles of a body of fact, a science, or an art; (3) a plausible or scientifically acceptable general principle or body of principles offered to explain phenomena; (4) a hypothesis assumed for the sake of argument or investigation; (5) abstract thought. Learning theorists use all five of these definitions in one way or another, but let me give you a taste of the wide variations in their usages:

First, here are some definitions-by-usage-in-context. It is my observation that most writers in this field don't expressly define the term, but expect their readers to get its meaning from the way it is used.

> The research worker needs a set of assumptions as a starting point to guide what he does, to be tested by experiment or to serve as a check on observations and insights. Without any theory his activities may be as aimless, as wasteful as the early wanderings' of the explorers in North America. . . .Some knowledge of theory always aids practice. [Kidd, 1959, pp. 134-135]

> A scientist, along with the desire to satisfy his curiosity about the facts of nature, has a predilection for ordering his facts into systems of laws and theories. He is interested not only in verified facts and relationships, but in neat and parsimonious ways of summarizing these facts. [Hilgard and Bower, 1966, pp. 1-2]

> Every managerial act rests on assumptions, generalizations, and hypotheses—that is to say, on theory. [McGregor, 1960, p. 6]

> The word "theory" conveys a sense of intangibility which is forbidding to some students. To others, theory is associated with a sense of impracticality and unrealism which prompts negative initial reaction. Yet nearly everyone, whether teacher, parent, employer, or college student, has and believes his own theory of learning, even though he may not have stated it in so many words. [Kingsley and Garry, 1957, p. 82]

It is easy enough to use one's chosen theory for explaining modifications in behavior as an instrument for describing growth; there are so many aspects of growth that any theory can find something that it can explain well. [Bruner, 1966, pp. 4-5]

We can now understand why the term "model" is sometimes used as a synonym for "theory," especially one which is couched in the postulational style. . . .In my opinion, this sort of usage of the term "model" is of dubious worth, methodologically speaking. If "model" is co-extensive with "theory," why not just say "theory," or if need be, "theory in postulational form"? In a strict sense, not all theories are in fact models: in general, we learn something about the subject-matter *from* the theory, but not by investigating properties *of* the theory . . . Consider, for instance, the difference between the theory of evolution and a model which a geneticist might construct to study mathematically the rate of diffusion in a hypothetical population of a characteristic with specified survival value. [Kaplan, 1964, pp. 264-265]

There are some psychologists who don't believe in theories at all. Gagne, for example, writes, "I do not think learning is a phenomenon which can be explained by simple theories, despite the admitted intellectual appeal that such theories have." [Gagne, 1965, p. v] He goes on to explain, however, that a number of useful generalizations can be made about eight distinguishable classes of performance change which he describes as conditions of learning.

Skinner objects to theories on the score that the hypothesis-formulation-and-testing procedures they generate are wasteful and misleading. "They usually send the investigator down the wrong paths, and even if the scientific logic makes them self-correcting, the paths back are strewn with discarded theories." [Hilgard, 1966, p. 143] Skinner believes that the end result of scientific investigation is a "described functional relationship demonstrated in the data." After reviewing the classical theories he comes to the conclusion that "such theories are now of historical interest only, and unfortunately much of the work which was done to support them is also of little current value. We may turn instead to a more adequate analysis of the changes which take place as a student learns." [Skinner, 1968, p. 8]

Where does all this leave us in answering the question, What is a theory? Perhaps the only realistic answer is that a theory is what a given author says it is: if you want to understand his thinking you have to go along with his definitions. So here is mine: *A theory is a comprehensive, coherent, and internally consistent system of ideas about a set of phenomena.*

## What Is Learning?

One of our most distinguished contemporary interpreters of learning theory, Ernest Hilgard, maintains that there is no basic disagreement about the definition of learning between the theories.

While it is extremely difficult to formulate a satisfactory definition of learning so as to include all the activities and processes which we wish to include and eliminate all those which we wish to exclude the difficulty does not prove to be embarrassing because it is not a source of controversy as between theories. The controversy is over fact and interpretation, not over definition. [Hilgard and Bower, 1966, p. 6]

This generalization appears to hold with regard to those learning theorists who dominated the field until recently, although there are striking variations in the degree of precision among them. Let's start with three definitions by different authors in the same book. [Crow and Crow, 1963]

Learning involves change. It is concerned with the acquisition of habits, knowledge, and attitudes. It enables the individual to make both personal and social adjustments. Since the concept of change is inherent in the concept of learning, any change in behavior implies that learning is taking place or has taken place. Learning that occurs during the process of change can be referred to as the *learning process*. [Crow and Crow, 1963, p. 1]

Learning is a change in the individual, due to the interaction of that individual, and his environment, which fills a need and makes him more capable of dealing adequately with his environment. [Burton, 1963, p. 7]

There is a remarkable agreement upon the definition of learning as being reflected in a change in behavior as the result of experience. [Haggard, 1963, p. 20]

This last notion that we don't know what learning is directly, but can only infer it is supported by Cronbach's statement, "Learning is shown by a change in behavior as a result of experience." [Cronbach, 1963, p. 71] Harris and Schwahn go back to, "Learning is essentially change due to experience," but then go on to distinguish among *learning as product* (which emphasizes the end result or outcome of the learning experience), *learning as process* (which emphasizes what happens during the course of a learning experience in attaining a given learning product or outcome), and *learning as function* (which emphasizes certain critical aspects of learning, such as motivation, retention, and transfer, which presumably make behavioral changes in human learning possible). [Harris and Schwahn, 1961, pp. 1-2]

Other definers take care to distinguish between planned learning and natural growth.

Learning is a change in human disposition or capability, which can be retained, and which is not simply ascribable to the process of growth. [Gagne, 1965, p. 5]

Learning is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g., fatigue, drugs, etc.). [Hilgard and Bower, 1966, p. 2]

Two concepts lie at the heart of Skinner's treatment of learning: (1) *control* ("Recent improvements in the conditions which control behavior in the field of learning are of two principal sorts. The Law of Effect has been taken seriously; we have made sure that effects *do* occur under conditions which are optimal for producing changes called learning") and (2) *shaping* ("Once we have arranged the particular type of consequence called a reinforcement, our techniques

permit us to shape the behavior of an organism almost at will"). [Skinner, 1968, p. 10]

It is clear that these learning theorists (and most of their precursors and many of their contemporaries) see learning as a process by which behavior is changed, shaped, or controlled. Other theorists prefer to define learning in terms of growth, development of competencies, and fulfillment of potential. Jerome Bruner, for example, observes, "It is easy enough to use one's chosen theory for explaining modifications in behavior as an instrument for describing growth; there are so many aspects of growth that any theory can find something that it can explain well." He then lists these "benchmarks about the nature of intellectual growth against which to measure one's efforts at explanation":

1. Growth is characterized by increasing independence of response from the immediate nature of the stimulus.
2. Growth depends upon internalizing events into a "storage system" that corresponds to the environment.
3. Intellectual growth involves an increasing capacity to say to oneself and others, by means of words or symbols, what one has done or what one will do.
4. Intellectual development depends upon a systematic and contingent interaction between a tutor and a learner.
5. Teaching is vastly facilitated by the medium of language, which ends by being not only the medium for exchange but the instrument that the learner can then use himself in bringing order into the environment.
6. Intellectual development is marked by increasing capacity to deal with several alternatives simultaneously, to tend to several sequences during the same period of time, and to allocate time and attention in a manner appropriate to these multiple demands. [Bruner, 1966, pp. 4-6]

Other theorists feel that even this emphasis on growth, with its focus on cognitive development, is too narrow to explain what learning is really about. Jones objects to Bruner's underemphasis on emotional skills; his exclusive attention to extra-psychic stimuli; the equating of symbolism with verbalism; and his preoccupation with the processes of concept attainment to the seeming exclusion of the

processes of concept formation or invention. [Jones, 1968, pp. 97-104]

Nevertheless, Bruner is moving away from the perception of learning as a process of controlling, changing, or shaping behavior and putting it more in the context of competency-development. One of the most dynamic and prolific developments in the field of psychology, *humanistic psychology*, has recently exploded on the scene (the Association of Humanistic Psychology was founded in 1963) and has carried this trend of thought much farther. One of its exponents is Carl Rogers.

> Let me define a bit more precisely the elements which are involved in such significant or experiential learning. *It has a quality of personal involvement*—the whole person in both his feeling and cognitive aspects being *in* the learning event. *It is self-initiated.* Even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within. *It is pervasive.* It makes a difference in the behavior, attitudes, perhaps even the personality of the learner. *It is evaluated by the learner.* He knows whether it is meeting his need, whether it leads toward what he *wants* to know, whether it illuminates the dark area of ignorance he is experiencing. The locus of evaluation, we might say, resides definitely in the learner. *Its essence is meaning.* When such learning takes place, the element of meaning to the learner is built into the whole experience. [Rogers, 1969, p. 5]

Maslow sees the goal of learning to be self-actualization, ". . . the full use of talents, capacities, potentialities, etc." [Maslow, 1970, p. 150] He conceives of growth toward this goal as being determined by the relationship of two sets of forces operating within each individual.

> One set clings to safety and defensiveness out of fear, tending to regress backward, hanging on to the past. . . . The other set of forces impels him forward toward wholeness to Self and uniqueness of Self, toward full functioning of all his capacities . . . . We grow forward when the delights of growth and anxieties of safety are greater than the anxieties of growth and the delights of safety. [Maslow, 1972, pp. 44-45]

Building on the notion that "recent insights from the behavioral sciences have expanded the perception of human potential, through a re-casting of the image of man from a passive, reactive recipient, to an active, seeking, autonomous, and reflective being," Sidney Jourard develops the concept of *independent learning.*

> . . . That independent learning is problematic is most peculiar, because man always and only learns by himself. . . .Learning is not a task or problem; it is a way to be in the world. Man learns as he pursues goals and projects that have meaning for him. He is always learning something. Perhaps the key to the problem of independent learning lies in the phrase "the learner has the need and the capacity to assume responsibility for his own continuing learning." [Jourard, 1972, p. 66]

Other educational psychologists question the proposition that learning can be defined as a single process. For example, Gagne identifies five *domains of the learning process*, each with its own praxis.

(1) *Motor skills*, which are developed through practice.
(2) *Verbal information*, the major requirement for learning being its presentation within an organized, meaningful context.
(3) *Intellectual skills*, the learning of which appears to require prior learning of prerequisite skills.
(4) *Cognitive strategies*, the learning of which requires repeated occasions in which challenges to thinking are presented.
(5) *Attitudes*, which are learned most effectively through the use of human models and "vicarious reinforcement." [Gagne, 1972, pp. 3-4]

Tolman distinguished six "types of connections or relations" to be learned: (1) cathexes, (2) equivalence beliefs, (3) field expectancies, (4) field-cognition modes, (5) drive discriminations, and (6) motor patterns. [Hilgard and Bower, 1966, pp. 211- 213] Bloom and his associates identified three domains of educational objectives: (1) cognitive, "which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills;"

(2) affective, "which describe changes in interest, attitudes, and values, and the development of appreciations and adequate adjustment;" and (3) psychomotor. [Bloom, 1956, p. 7]

A distinction is frequently made between *education* and *learning.* For example, Wright says

> Education is an activity undertaken or initiated by one or more agents that is designed to effect changes in the knowledge, skill, and attitudes of individuals, groups, or communities. The term *education* emphasizes the educator, the agent of change who presents stimuli and reinforcement for learning and designs activities to induce change.
> The term *learning,* in contrast, emphasizes the person in whom the change occurs or is expected to occur. Learning is the act or process by which behavioral change, knowledge, skills, and attitudes are acquired. [Boyd, Apps, et al, 1980, pp. 100-101]

The difficulty of defining learning is summarized by Smith in these words:

> It has been suggested that the term *learning* defies precise definition because it is put to multiple uses. Learning is used to refer to (1) the acquisition and mastery of what is already known about something, (2) the extension and clarification of meaning of one's experience, or (3) an organized, intentional process of testing ideas relevant to problems. In other words, it is used to describe a product, a process, or a function. [Smith, 1982, p. 34]

It is certainly clear by now that learning is an elusive phenomenon. And, as we shall see next, the way people define it greatly influences how they theorize and go about causing it to occur. Until recently, educators of adults have been wallowing around in this same morass, and after wallowing around in it a bit more ourselves, we'll see how adult-educators are beginning to extricate themselves.