

TRADITIONAL LEARNING THEORIES

From "Learning in Adulthood: A Comprehensive Guide"

Learning, so central to human behavior yet so elusive to understanding, has fascinated thinkers as far back as Plato and Aristotle. Indeed, the views of these two philosophers underpin much modern research on learning conducted by psychologists and educators. The fact that so many people have thought about, investigated, and written about the process of learning over the years suggests the complexity of the topic. Learning defies easy definition and simple theorizing. This chapter reviews some of the main ways in which learning has been studied and delineates the contributions these orientations have made to our understanding of learning in adulthood.

Originally, learning was within the purview of philosophical investigations into the nature of knowledge, the human mind, and what it means to know. Plato believed that the physical objects in our everyday world have corresponding abstract forms that we can come to know through "introspection or self-analysis.... Only by turning away from the physical impure world to the world of ideas, pondered by the mind's eye, can we hope to gain true knowledge" (Hergenhahn & Olson, 2005, p. 31). Aristotle, in contrast, believed that all knowledge comes through the senses; these sense impressions can be pondered "to discover the lawfulness that runs through them" (p. 32). Plato's "rationalism" can be seen in Gestalt and cognitive psychology; Aristotle's "empiricism" is particularly evident in early behavioral psychology. Later philosophers presented variations on these two basic positions, ranging from Descartes' separation of mind and body to Kant's notion of innate mental faculties.

It was not until the nineteenth century that the study of the mind, of how people know, and by extension, of behavior became "scientifically" investigated. Hergenhahn and Olson (2005, p. 42) write that Hermann Ebbinghaus "emancipated psychology from philosophy by demonstrating that the 'higher mental processes' of learning and memory could be studied experimentally" and that many of his findings on learning and memory published in 1885 are still valid. Another pioneer, Wilhelm Wundt, set up the first psychological laboratory in Leipzig in 1879 and investigated how experience is assimilated into one's previous knowledge structures. Interestingly, Wundt felt that laboratory research was limited in its usefulness for studying "products of the mind" such as "religion, morals, myths, art, social customs, language, and law" and he spent years studying these products "through naturalistic observation" (Hergenhahn & Olson, 2005, p. 43). Thus, by the turn of the century, systematic investigations into human learning were well under way in Europe and North America.

In this chapter we first present a brief discussion of learning and learning theories in general, and then we focus on five different learning theories: behaviorist, humanist, cognitivist, social cognitive, and constructivist. These theories deal with learning in general; attempts to build theories of *adult* learning in particular were examined in the chapters in Part Two.

LEARNING AND LEARNING THEORIES

A common definition of learning, emanating from psychologists who investigated the phenomenon until the 1950s, is that learning is a change in behavior. This definition, however, fails to capture some of the complexities involved—such as whether one needs to perform in order for learning to occur or whether all human behavior is learned. As Hill (2002, p. 10) points out, "What is learned need not be 'correct' or adaptive (we learn bad habits as well as good), need not be conscious or deliberate (one of the advantages of coaching in a skill is that it makes us aware of mistakes we have unconsciously learned to make), and need not involve any overt act (attitudes and emotions can be learned as well as knowledge and skills)." The notion of change, however, still underlies most definitions of learning, although it has been modified to include the potential for change. And the idea that having an experience of some sort, rather than learning as a function of maturation, is important. Thus a reasonable definition of learning would be as follows: Learning is a process that brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and worldviews (Illeris, 2000; Ormrod, 1995).

Learning as a process (rather than an end product) focuses on what happens when the learning takes place. Explanations of what happens are called *learning theories*, and it is these theories that are the subject of this chapter. There are, however, many explanations of learning, some more comprehensive than others, that are called theories. How the knowledge base in this area is divided and labeled depends on the writer. Hilgard and Bower (1966), for example, review eleven learning theories and then note that they fall into two main families: stimulus-response theories and cognitive theories. Knowles (1984) uses Reese and Overton's (1970) organization, in which learning theories are grouped according to two different worldviews: mechanistic and organismic.

Gredler (1997) exemplifies the difficulties in deciding which "contemporary perspectives" are actual learning theories. She discusses seven "perspectives": Skinner's operant conditioning, Gagne's conditions of learning, cognitive learning principles, Piaget's cognitive-development theory, Vygotsky's sociohistorical theory, Bandura's social-cognitive theory, and Weiner's theory of motivation. However, three of these (Piaget, Vygotsky, and Weiner) "technically are not categorized as learning theories" but "have important implications for classroom practice" (p. 12).

Since there is little consensus on how many learning theories there are or how they should be grouped for discussion, we have

organized this chapter according to orientations that present very different assumptions about learning and offer helpful insights into adult learning. With these criteria in mind, five basic orientations have been selected for discussion: behaviorist, humanist, cognitivist, social cognitive, and constructivist. As Hill (2002, p. 190) has observed, "For most of us, the various learning theories have two chief values. One is in providing us with a vocabulary and a conceptual framework for interpreting the examples of learning that we observe. These are valuable for anyone who is alert to the world. The other, closely related, is in suggesting where to look for solutions to practical problems. The theories do not give us solutions, but they do direct our attention to those variables that are crucial in finding solutions."

In each of the five orientations examined in this chapter, the following topics are covered: the major proponents, the view of the learning process itself, the locus of learning, the purpose of education, the role of the teacher, and the ways in which these theories are manifested in the practice of adult education. A summary of this information can be found in Table 11.1 at the end of the chapter.

BEHAVIORIST ORIENTATION

Behaviorism is a well-known orientation to learning that encompasses a number of individual theories. Developed by John B. Watson in the early decades of the twentieth century, behaviorism loosely includes the work of such people as Thorndike, Tolman, Guthrie, Hull, and Skinner (Ormrod, 1995). What characterizes these investigators is their underlying assumptions about the process of learning. In essence, three basic assumptions are held to be true. First, observable behavior rather than internal thought processes is the focus of study; in particular, learning is manifested by a change in behavior. Second, the environment shapes behavior; what one learns is determined by the elements in the environment, not by the individual learner. And third, the principles of contiguity (how close in time two events must be for a bond to be formed) and reinforcement (any means of increasing the likelihood that an event will be repeated) are central to explaining the learning process (Grippin & Peters, 1984).

Edward L. Thorndike, a contemporary of Watson, is "perhaps the greatest learning theorist of all time" (Hergenhahn & Olson, 2005, p. 54). A prolific researcher and writer, "he did pioneer work not only in learning theory but also in the areas of educational practices, verbal behavior, comparative psychology, intelligence testing, the nature-nurture problem, transfer of training, and the application of quantitative measures to sociopsychological problems (e.g., he developed scales with which to compare the quality of life in different cities)." In fact, the book *Adult Learning* published by Thorndike and his colleagues in 1928 (Thorndike, Bregman, Tilton, & Woodyard, 1928) was the first major report of research on learning with adults.

Thorndike's most significant contribution to understanding learning has come to be called *connectionism*, or the S-R theory of learning. Using animals in controlled experiments, Thorndike noted that through repeated trial-and-error learning, certain connections between sensory impressions, or stimuli (S), and subsequent behavior, or responses (R), are strengthened or weakened by the consequences of behavior. Thorndike formulated three laws of learning to explain his findings: the Law of Effect, which states that learners will acquire and remember responses that lead to satisfying aftereffects; the Law of Exercise, which asserts that the repetition of a meaningful connection results in substantial learning; and the Law of Readiness, which notes that if the organism is ready for the connection, learning is enhanced, and if it is not, learning is inhibited (Ormrod, 1995). Although Thorndike himself and later researchers modified these laws, they are nevertheless still applied widely in educational settings.

Thorndike's connectionism became refined and expanded on by his contemporaries and by those who followed (for a detailed discussion, see Hergenhahn & Olson, 2005; Ormrod, 1995). Working in Russia, Pavlov, for example, added concepts of reinforcement, conditioned stimulus, and extinction to the basic notion of the stimulus-response connection. Guthrie stated that one law of learning based on contiguity is all that is needed to make learning comprehensible: "Whatever you do in the presence of a stimulus, you do again when that stimulus is represented" (Grippin & Peters, 1984, p. 61). Important as the work of these and other researchers was, behaviorism was most developed as a theory of learning by B. F. Skinner.

Skinner's major contribution to understanding learning is known as *operant conditioning*. Simply stated, operant conditioning means "reinforce what you want the individual to do again; ignore what you want the individual to stop doing" (Grippin & Peters, 1984, p. 65). Reinforcement is essential to understanding operant conditioning. If behavior is reinforced or rewarded, the response is more likely to occur again under similar conditions. Behavior that is not reinforced is likely to become less frequent and may even disappear. Within this framework, even something as complex as personality can be explained by operant conditioning. Personality, according to Skinner (1974, p. 149), is a "repertoire of behavior imported by an organized set of contingencies"—in effect, a personal history of reinforcements. Skinner's research concentrated on positive and negative reinforcement schedules, the timing of reinforcements, and avoidance behavior. In essence, his work indicates that since all behavior is learned, it can be determined by arranging the contingencies of reinforcement in the learner's immediate environment. Behaviorists since Skinner have taken into account certain aspects of the human organism but still emphasize that it is environment that controls behavior, "not some mechanism within the individual" (Grippin & Peters, 1984, p. 71).

The behaviorist orientation has been foundational to much educational practice, including adult learning. Skinner in particular has addressed the application of his theory to educational issues. As he sees it, the ultimate goal of education is to bring about behavior that will ensure survival of the human species, societies, and individuals (Skinner, 1971). The teacher's role is to design an environment that elicits desired behavior toward meeting these goals and to extinguish undesirable behavior.

Several practices in education and adult education can be traced to behaviorism. Since behaviorism focuses on the measurable, overt activity of the learner, behavioral objectives that specify the behavior to be exhibited by learners after some intervention direct much instructional planning even today. Behavioral objectives specify the conditions (or stimuli), the behavior to be performed, and the criteria by which the behavior will be judged.

Closely linked to a behaviorist perspective is the demand at all levels of education for accountability. The current No Child Left Behind (NCLB) legislation is an example of efforts to make education accountable. Enacted in 2001, NCLB mandated that students, schools, districts, and states must be evaluated each year; those schools that fail to meet certain standards will be penalized. Another example of the accountability thrust in education is the current federal push for “scientifically based” or “evidence-based” practices; that is, funding sources want reliable evidence that an educational program or practice works. For example, the U.S. Department of Education's Institute of Education Sciences has called for “the integration of professional wisdom with the best empirical evidence in making decisions about how to deliver instruction” (Comings, 2003, p. 2). For many policymakers, “the best empirical evidence” consists of measurable, quantifiable changes in behavior that can be tied to the educational intervention. Evidence-based practice has found its way into adult basic education (ABE), adult English for speakers of other languages (ESOL), and adult secondary education (ASE). Literacy educators are being urged to use quantitative research methodologies such as experimental and quasi-experimental designs to assess the efficacy of their methods and practices.

In adult education in particular, behaviorism is the philosophy that most underlies adult career and technical education and human resource development. The emphasis in vocational education is on identifying the skills needed to perform in an occupation, teaching those skills, and requiring a certain standard of performance of those skills. The National Skills Standards Board (NSSB) determines the standards for skills needed in the work-place (see <http://www.nssb.org/>). Vocational educational programs teach to those standards and students are evaluated by those standards.

Human resource development (HRD) is most associated with training to enhance on-the-job performance in the workplace. Performance improvement, competency-based instruction, and accountability are all part of this behavioral orientation to HRD. Jacobs (1987), in particular, conceptualizes HRD as performance improvement: “Human performance technology is about engineering ... technologies ... based on what is known about the principles to change the outcomes of behavior” (p. 19). As Sleezer, Conti, and Nolan (2003) point out, “HRD professionals who rely on behaviorism and cognitivism emphasize rewards, the stimuli that learners receive from the environment, the systematic observation of behavior, and relating new information to previous learning” (p. 26). It should be noted that there are numerous educators and HRD and technical education professionals who do not ascribe to such a behaviorist orientation. Nevertheless, the behavioral orientation to learning has had a profound effect on our educational system. It has also been challenged by theorists from two radically different perspectives: humanism and cognitivism.

HUMANIST ORIENTATION

Humanist theories consider learning from the perspective of the human potential for growth. This shift to the study of the affective as well as cognitive dimensions of learning was informed in part by Freud's psychoanalytic approach to human behavior. Although most would not label Freud a learning theorist, aspects of his psychology, such as the influence of the subconscious mind on behavior, as well as the concepts of anxiety, repression, defense mechanism, drives, and transference, have found their way into some learning theories. Sahakian (1984) even makes the case for psychoanalytic therapy as a type of learning theory.

Despite Freud's focus on personality, humanists reject the view of human nature implied by both behaviorists and Freudian psychologists. Identifying their orientation as a “third force,” humanists refuse to accept the notion that behavior is predetermined by either the environment or one's subconscious. Rather, human beings can control their own destiny; people are inherently good and will strive for a better world; people are free to act, and behavior is the consequence of human choice; people possess unlimited potential for growth and development (Rogers, 1983; Maslow, 1970). From a learning theory perspective, humanism emphasizes that perceptions are centered in experience, and it also emphasizes the freedom and responsibility to become what one is capable of becoming. These tenets underlie much of adult learning theory that stresses the self-directedness of adults and the value of experience in the learning process. Two psychologists who have contributed the most to our understanding of learning from this perspective are Abraham Maslow and Carl Rogers.

Maslow (1970), considered the founder of humanistic psychology, proposed a theory of human motivation based on a hierarchy of needs. At the lowest level of his famous triangle hierarchy are physiological needs such as hunger and thirst, which must be attended to before one can deal with safety needs—those dealing with security and protection. The remaining levels are belonging and love, self-esteem, and finally, the need for self-actualization. This final need can be seen in a person's desire to become all that he or she is capable of becoming. The motivation to learn is intrinsic; it emanates from the learner. For Maslow self-actualization is the goal of learning, and educators should strive to bring this about. As Sahakian (1984) notes, learning from Maslow's point of view is itself “a form of self-actualization. Among the growth motivations was found the need for cognition, the desire to know and to understand. Learning is not only a form of psychotherapy ... but learning contributes to psychological health” (p. 438). Although self-actualization is the primary goal of learning, Maslow posits other goals (Sahakian, 1984, p. 439):

1. The discovery of a vocation or destiny

2. The knowledge or acquisition of a set of values
3. The realization of life as precious
4. The acquisition of peak experiences
5. A sense of accomplishment
6. The satisfaction of psychological needs
7. The refreshing of consciousness to an awareness of the beauty and wonder of life
8. The control of impulses
9. The grappling with the critical existential problems of life
10. Learning to choose discriminatively

Another major figure writing from a humanist orientation is Carl Rogers. His book *Freedom to Learn for the 80s* (1983) lays out his theory of learning, which he sees as a similar process in both therapy and education. In fact, his “client-centered therapy” is often equated with student-centered learning. In both education and therapy, Rogers is concerned with significant learning that leads to personal growth and development. Such learning, according to Rogers, has the following characteristics (p. 20):

1. Personal involvement: The affective and cognitive aspects of a person should be involved in the learning event.
2. Self-initiated: A sense of discovery must come from within.
3. Pervasive: The learning “makes a difference in the behavior, the attitudes, perhaps even the personality of the learner.”
4. Evaluated by the learner: The learner can best determine whether the experience is meeting a need.
5. Essence is meaning: When experiential learning takes place, its meaning to the learner becomes incorporated into the total experience.

Quite clearly, Rogers's principles of significant learning and Maslow's views have been integrated into much of adult learning. Knowles's theory of andragogy, with its assumptions about the adult learner (see Chapter Four), and much of the research and writing on self-directed learning (see Chapter Five) are grounded in humanistic learning theories. As Caffarella (1993, p. 26) observes about self-directed learning, “The focus of learning is on the individual and self-development, with learners expected to assume primary responsibility for their own learning. The process of learning, which is centered on learner need, is seen as more important than the content; therefore, when educators are involved in the learning process, their most important role is to act as facilitators, or guides.”

In addition to andragogy and self-directed learning, Mezirow's notion of perspective transformation (see Chapter Six) also has humanistic roots. In transformational learning theory the notion of individual development is both inherent in and an outcome of the process: “Meaning perspectives that permit us to deal with a broader range of experience, to be more discriminating, to be more open to other perspectives, and to better integrate our experiences are superior perspectives” (Mezirow, 1990b, p. 14).

In summary, adult education that is lodged in humanistic psychology is quite prevalent in the United States. Elias and Merriam (2005) attribute its popularity to its compatibility with a democratic political system and to adult education's voluntary nature: “Educational activities must meet the needs of adult learners in order to survive. Practical considerations thus necessitate an emphasis upon individual needs and interests” (p. 144).

COGNITIVE ORIENTATION

The earliest challenge to the behaviorists came in a publication in 1929 by Bode, a Gestalt psychologist. He criticized behaviorists for being too particularistic, too concerned with single events and actions, and too dependent on overt behavior to explain learning. *Gestalt* (a German word meaning *pattern* or *shape*) psychologists proposed looking at the whole rather than its parts, at patterns rather than isolated events. Through the research of Gestaltists Wertheimer, Kohler, Koffka, and later Lewin (Hergenhahn & Olson, 2005; Ormrod, 1995), Gestalt views of learning rivaled behaviorism by the mid-twentieth century. These views have been incorporated into what have come to be labeled *cognitive* or *information-processing* learning theories. Two key assumptions underlie this cognitive or information-processing approach: “(1) that the memory system is an active organized processor of information, and (2) that prior knowledge plays an important role in learning” (Gredler, 1997, p. 144).

Perception, insight, and meaning are key concepts in cognitivism for Gestalt learning theorists. According to cognitivists, “The human mind is not simply a passive exchange-terminal system where the stimuli arrive and the appropriate response leaves. Rather, the thinking person interprets sensations and gives meaning to the events that impinge upon his consciousness” (Grippin & Peters, 1984, p. 76). Learning involves the reorganization of experiences in order to make sense of stimuli from the environment. Sometimes this sense comes through flashes of insight. Hergenhahn and Olson (2005, p. 273) summarize the learning process according to Gestalt psychology: “Learning, to the Gestaltist, is a cognitive phenomenon. The organism ‘comes to see’ the solution after pondering a problem. The learner thinks about all the ingredients necessary to solve a problem and puts them together (cognitively) first one way and then another until the problem is solved. When the solution comes, it comes suddenly, that is, the organism gains an *insight* into the solution of a problem. The problem can exist in only two states: (1) unsolved and (2) solved; there is no state of partial solution in between.” A major difference between Gestaltists and behaviorists, therefore, is the locus of control over the learning activity. For Gestaltists it lies with the individual learner; for behaviorists it lies with the environment. This shift to the individual—and in particular to the learner’s mental processes—is characteristic of cognitivist-oriented learning theories.

A cognitive psychologist who clarified the focus on internal cognitive processes was Jean Piaget (1966). Influenced by both the behaviorist and Gestalt schools of thought, Piaget proposed that one’s internal cognitive structure changes partly as a result of maturational changes in the nervous system and partly as a result of the organism’s interacting with the environment and being exposed to an increasing number of experiences. His four-stage theory of cognitive development and its implications for adult learning are discussed more fully in Chapter Thirteen.

Currently, cognitive learning theory encompasses a number of perspectives, all of which take as their starting point the mental processes involved in learning (Wilson & Keil, 1999). Examples of specific areas of study include information-processing theories, memory and metacognition, theories of transfer, mathematical learning theory models, the study of expertise, computer simulations, cognition and culture, and artificial intelligence (see Chapter Fifteen). Converging with cognitive learning theory are theories of instruction that attempt to unite what is known about learning with the best way to facilitate its occurrence. Ausubel, Bruner, and Gagne provide good examples of how the understanding of mental processes can be linked to instruction.

Ausubel (1967) distinguishes between meaningful learning and rote learning. He suggests that learning is meaningful only when it can be related to concepts that already exist in a person’s cognitive structure. Rote learning, in contrast, does not become linked to a person’s cognitive structure and hence is easily forgotten. Ausubel’s views have also been labeled *assimilation theory* since “most learning, especially in adulthood but in childhood as well, consists of assimilating new experience into one’s existing cognitive structure” (Hill, 2002, p. 138). He suggests the use of “advance organizers” to prepare a person for new learning. Ausubel’s work can be seen as an antecedent to current research on schema theory whereby schemata—structures that organize the learner’s worldview—determine how people process new experiences (Anderson, 1996; Di Vesta, 1987; Ormrod, 1995).

Ausubel emphasizes the importance of the learner’s cognitive structure in new learning. Bruner, whose views are often contrasted with Ausubel’s, emphasizes learning through discovery. Discovery is “in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence” and as a result, reconstruct additional new insights (Bruner, 1965, pp. 607-608). According to Knowles (1984), Bruner’s instructional theory is based on a theory about the act of learning that involves “three almost simultaneous processes: (1) acquisition of new information ... ; (2) transformation, or the process of manipulating knowledge to make it fit new tasks; and (3) evaluation, or checking whether the way we have manipulated information is adequate to the task” (p. 25).

Linking instruction to the acquisition and processing of knowledge has probably been most thoroughly developed by Gagne, Briggs, and Wager (1992). They contend that there are eight different types of knowledge—signal learning, stimulus-response, motor training, verbal association, discrimination learning, concept learning, rule learning, and problem solving—each with appropriate instructional procedures. Kidd (1973, p. 182) points out that the work of Gagne and others has been an important influence on the “learning how to learn” concept, which has been explored in some depth by Smith, who has been particularly interested in applying it to adult learning (Smith, 1982, 1987; Smith & Associates, 1990). According to Smith (1982, p. 19), “Learning how to learn involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters.” Three subconcepts are involved: the learner’s needs; a person’s learning style; and training, which is an organized activity, or instruction to increase competence in learning.

In addition to Smith’s work on learning how to learn, the cognitive orientation can be seen in two other areas that have particular relevance for adult learning. First, interest in cognitive development in adulthood has been the subject of recent research (see Chapter Thirteen); second, the study of learning processes as a function of age (see Chapter Fifteen) draws from the cognitive focus on learning. (See also Tennant & Pogson, 1995.)

In summary, cognitively oriented explanations of learning encompass a wide range of topics with a common focus on internal mental processes that are under the learner’s control. “Essential components of learning are the organization of the information to be learned, the learner’s prior knowledge, and the processes involved in perceiving, comprehending, and storing information” (Gredler, 1997, p. 143). As Di Vesta (1987, p. 229) observes, “Rather than seeking the general all-encompassing laws for controlling and predicting behavior, as did the earlier grand theories of learning,” cognitive learning theory “is directed toward

miniature models of specific facets of cognition, such as models of discourse analysis, models of comprehension, ways of aiding understanding and meaningful learning, the nature of the schemata, the memory system, the development of cognitive skills, and the like.”

SOCIAL COGNITIVE ORIENTATION

This learning theory, which combines elements from both behaviorist and cognitivist orientations, posits that people learn from observing others. By definition, such observations take place in a social setting—hence the label *observational* or *social* learning (Lefrancois, 1999). Specifically, “social cognitive learning theory highlights the idea that much human learning occurs in a social environment. By observing others, people acquire knowledge, rules, skills, strategies, beliefs, and attitudes. Individuals also learn about the usefulness and appropriateness of behaviors by observing models and the consequences of modeled behaviors, and they act in accordance with their beliefs concerning the expected outcomes of actions” (Schunk, 1996, p. 102). Just how the learning occurs has been the subject of several investigations.

Miller and Dollard in the 1940s were the first to explore how people learn through observation. Drawing from stimulus-response and reinforcement theory, they argued that people do not learn from observation alone; rather, they must imitate and reinforce what they have observed. “If imitative responses were not made and reinforced, no learning would take place. For them, imitative learning was the result of observation, overt responding, and reinforcement” (Hergenhahn & Olson, 2005, p. 339). These ideas are totally congruent with the behaviorist orientation to learning. Not until the 1960s, however, with the work of Bandura, did social learning theory break from a purely behaviorist orientation.

Bandura focused more on the cognitive processes involved in the observation than on the subsequent behavior. Central to his theory is the separation of observation from the act of imitation. One can learn from observation, he maintains, without having to imitate what was observed (Lefrancois, 1999). In fact, the learning can be vicarious: “Virtually all learning phenomena resulting from direct experiences can occur on a vicarious basis through observation of other people's behavior and its consequences for the observer” (Bandura, 1976, p. 392). In addition to being cognitive and vicarious, Bandura's observational learning is characterized by the concept of self-regulation. He contends that “persons can regulate their own behavior to some extent by visualizing self-generated consequences” (p. 392).

Observational learning is influenced by the four processes of attention, retention or memory, behavioral rehearsal, and motivation (Hergenhahn & Olson, 2005). Before something can be learned, the model must be attended to; some models are more likely than others to be attended to, such as those thought to be competent, powerful, attractive, and so on. Information from an observation then needs to be retained or stored for future use. Retention can be through symbols or words: “Imaginally stored symbols are pictures or mental images of past experiences, whereas verbal symbols capture the complexities of behavior in words. Bandura notes that conceptual representations often comprise both images and verbal symbols” (Gibson, 2004, p. 197). Finally, the modeled behavior is stored until a person is motivated to act on it.

More recently, Bandura has focused on self-efficacy, that is, our own estimate of how competent we feel we are likely to be in a particular environment. This self-assessment influences how effective we are in interactions with others and with our environment (Lefrancois, 1999). Bandura's approach first became known as social learning theory, but as his research and writing began to emphasize cognitive components, it is now known as social *cognitive* theory (Hergenhahn & Olson, 2005; Hill, 2002). As Bandura himself explained in the preface to his book, *Social Foundations of Thought and Action: A Social Cognitive Theory* (1986, p. xii), “The theoretical approach of this book is designated as *social cognitive theory*. The social portion of the terminology acknowledges the social origins of much human thought and action; the cognitive portion recognizes the influential causal contribution of thought processes to human motivation, affect, and action.”

Bandura's theory has particular relevance to adult learning in that it accounts for both the learner and the environment in which he or she operates. Behavior is a function of the interaction of the person with the environment. This is a reciprocal concept in that people influence their environment, which in turn influences the way they behave. This three-way interactive model of the learning, the individual, and the environment is pictured by Bandura (1986) as a triangle in which learning is set solidly in a social context.

The social situation is also central to Rotter's (1954) theory, which includes strands from behaviorism, cognitivism, and personality theory. Rotter's theory is framed by seven propositions and attendant corollaries that delineate relationships among the concepts of behavior, personality, experience, and environment. Rotter's theory assumes that “much of human behavior takes place in a meaningful environment and is acquired through social interactions with other people” (Phares, 1980, p. 406). Key to understanding “which behavior (once acquired) in the individual's repertoire will occur in a given situation” (p. 407) are the concepts of expectancy and reinforcement. Expectancy is the likelihood that a particular reinforcement will occur as the result of specific behavior: “The way in which the person construes or psychologically defines the situation will affect the values of both reinforcement and expectancy, thereby influencing the potential for any given behavior to occur” (p. 408). “Rotter's theory says that when subjective beliefs contradict prior experiences ... people are more likely to act on the basis of belief than experience” (Schunk, 1996, p. 107).

Several useful concepts emerge from social cognitive learning theory. For example, the motivation to engage in adult learning activities might be partly explained by Rotter's (1954) notion of locus of control. Some people attribute their successes and failures to factors over which they feel they have no control—they exhibit an external locus of control—whereas others attribute

successes and failures to personal, internal factors. An example of how this might relate to motivation and participation in adult education would be the case of someone who is out of work. This person's unemployment might be blamed on factors over which he feels he has no control such as "the economy," outsourcing of jobs to cheaper labor markets, lack of public transportation, or age, gender, or skin color. Another person, whose locus of control is more internal, might decide that her being unemployed is more likely due to her inability to get along with coworkers, her lack of computer skills, and so forth. This person is much more likely to engage in learning activities to make herself more employable.

Another connection to adult learning is the importance of context and the learner's interaction with the environment to explain behavior. That is, explanations of learning may need to focus on more than overt behavior, mental processes, or personality. Bandura, in fact, has advanced a model of *triadic reciprocity* "in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (1986, p. 18). Studying the interaction of all these factors may result in a more comprehensive explanation of how adults learn. Moreover, Bandura's work on observational learning and modeling provides insights into social role acquisition and the nature of mentoring, a topic explored in depth by several adult educators (see Cohen, 1995; Daloz, 1999; Galbraith & Cohen, 1995; Mullen, 2005). Finally, Gibson (2004) makes a strong case for the influence of social cognitive theory in HRD theory building, research, and practice. In the area of practice, for example, she points out the prevalence of behavior-modeling techniques in both formal classroom situations and informal workplace interactions. Self-efficacy and its relationship to training and development of employees and employee socialization and on-the-job training are other areas of practice where social cognitive learning theory is evident.

CONSTRUCTIVIST ORIENTATION

Like some of the other theories already reviewed, constructivism encompasses a number of related perspectives. Basically, a constructivist stance maintains that learning is a process of constructing meaning; it is how people make sense of their experience. Beyond that basic assumption, constructivists differ as to the nature of reality, the role of experience, what knowledge is of interest, and whether the process of meaning-making is primarily individual or social (Steffe & Gale, 1995).

In an essay underscoring the variety of perspectives that are labeled constructivist, Phillips (1995) identifies six major strands: von Glaserfeld's work in math and science education, Kant's notions of knowledge and experience, feminist theorists' views on knowledge construction, Kuhn's work on scientific paradigms and revolutions, Piaget's theory of cognitive development, and Dewey's assumptions about knowledge and experience. Where these strands seem to converge is in the debate over the individual versus the social.

Driver and her colleagues (Driver, Asoko, Leach, Mortimer, & Scott, 1994) frame the issue as one of personal versus social constructivism. Drawing heavily on Piaget, they state that learning as an individual or personal activity involves a "progressive adaptation of [an] individual's cognitive schemes to the physical environment" (p. 6). Meaning is made by the individual and is dependent on the individual's previous and current knowledge structure. Learning is thus an internal cognitive activity. Teaching from the personal constructivism perspective involves providing "experiences that induce cognitive conflict and hence encourage learners to develop new knowledge schemes that are better adapted to experience. Practical activities supported by group discussions form the core of such pedagogical practices" (Driver et al., 1994, p. 6).

The social constructivist view, in contrast, posits that knowledge is "constructed when individuals engage socially in talk and activity about shared problems or tasks. Making meaning is thus a dialogic process involving persons-in-conversation, and learning is seen as the process by which individuals are introduced to a culture by more skilled members" (Driver et al., 1994, p. 7). This approach involves learning the culturally shared ways of understanding and talking about the world and reality. Vygotsky (1978) is credited with developing the foundation of this view because he proposed that learning is socially mediated through a culture's symbols and language, which are constructed in interaction with others in the culture. Vygotsky's work is also considered foundational to what's known as *activity theory* (AT). Activity theory "conceptualises learning as involving a subject (the learner), and object (the task or activity) and mediating artifacts (for example, a computer, laws)" (Issroff & Scanlon, 2002, p. 77). Activity theory, or what is better known as situated cognition in the United States (Wilson, 2005), combines the individual and the social (including culture and history) in understanding an activity such as learning.

Phillips (1995) posits that the various forms of constructivism can be graphed on a number of continua or axes and in so doing some would be close together on one dimension and far apart on another. For example, the personal, more psychological, orientation of, say, Piaget would contrast with the social perspective of feminist epistemologists. Other constructivists would be more in the middle of this continuum in that they "believe that their theories throw light on both the question of how individuals build up bodies of knowledge and how human communities have constructed the public bodies of knowledge known as the various disciplines" (p. 7). Cobb (1994, p. 13), for example, suggests viewing mathematical learning as "both a process of active individual construction and a process of enculturation into the mathematical practices of wider society." However, regardless of one's position on the continuum, there are important pedagogical implications to be derived, "each of which has a degree of credibility that is independent of the fate of the respective epistemologies" (p. 10). All forms of constructivism understand learning to be an active rather than passive endeavor. Consequently, learning occurs through dialogue, collaborative learning, and cooperative learning. "One learns through engaging, incorporating, and critically exploring the views of others, and new possibilities of interpretations are opened through the interaction" (Gergen, 1995, p. 34). This view, of course, is quite congruent with what we know about adult learning.

Writing from a predominantly social constructivist perspective, Candy (1991, p. 275) discusses how this view translates to adult education: “Becoming knowledgeable involves acquiring the symbolic meaning structures appropriate to one's society, and, since knowledge is socially constructed, individual members of society may be able to add to or change the general pool of knowledge. Teaching and learning, *especially for adults*, is a process of negotiation, involving the construction and exchange of personally relevant and viable meanings” (italics in original).

Much of our adult learning theory is constructivist in nature. For example, “the constructivist view of learning is particularly compatible with the notion of self-direction, since it emphasizes the combined characteristics of active inquiry, independence, and individuality in a learning task” (Candy, 1991, p. 278). Transformational learning theory (see Chapter Six), especially as presented by Mezirow, focuses on both the individual and social construction of meaning. Perspective transformation is a highly cognitive process in which one's meaning schemes and meaning perspectives undergo radical change (Mezirow & Associates, 2000). This change is mediated through personal reflection and dialogue with others. The central role of experience in adult learning is another point of connection. Andragogy and other models of adult learning see life experience as both a resource and a stimulus for learning; constructivism too begins with the learner's interaction with experience.

Finally, much of what the field of adult learning draws from situated cognition is constructivist in nature (see Chapter Seven). Concepts such as cognitive apprenticeship, situated learning, reflective practice, and communities of practice are found in both adult learning and constructivist literature. Two adult education practice arenas in particular where constructivist and situated cognition concepts are having an impact are in continuing professional education (Ferry & Ross-Gordon, 1998) and human resource development (Stamps, 1997). As Wegner (cited by Stamps, 1997, pp. 38-39) explains, “What is shared by a community of practice—what makes it a community—is its practice. The concept of practice connotes doing, but not just doing in and of itself. It is doing in a historical and social context that gives structure and meaning to what we do.... Learning is the engine of practice, and practice is the history of that learning. Indeed, practice is ultimately produced by its members through the negotiation of meaning.”

SUMMARY

Learning, a process central to human behavior, has been of interest to philosophers, psychologists, educators, and politicians for centuries. Since the late nineteenth century, the systematic investigation of this phenomenon has resulted in many explanations of how people learn. This chapter has reviewed some of these theories. Because there are dozens of learning theories and volumes written describing them, we have explored different orientations to learning, any of which might include numerous learning theories. The behaviorist, humanist, cognitivist, social cognitive, and constructivist orientations were chosen for their diversity and for their insights into learning in adulthood. Table 11.1 summarizes these five orientations. Since each is based on different assumptions about the nature of learning, the strategies one might use to enhance learning will depend on one's orientation. Instructors and program developers can use this review of major learning theories to identify their own theory of learning and discover the strategies for facilitating learning that are most congruent with their theory.

In brief, behaviorists define learning as a change in behavior. The focus of their research is overt behavior, which is a measurable response to stimuli in the environment. The role of the teacher is to arrange the contingencies of reinforcement in the learning environment so that the desired behavior will occur. Findings from behavioral learning theories can be seen in training and vocational adult education.

In contrast to behaviorism is the humanistic orientation to learning. Here the emphasis is on human nature, human potential, human emotions, and affect. Theorists in this tradition believe that learning involves more than cognitive processes and overt behavior. It is a function of motivation and involves choice and responsibility. Much of adult learning theory, especially the concepts of andragogy and many of the models of self-directed learning, are grounded in humanistic assumptions.

TABLE 11.1. FIVE ORIENTATIONS TO LEARNING.

Aspect	Behaviorist	Humanist	Cognitivist	Social Cognitive
Learning theorists	Guthrie, Hull, Pavlov, Skinner, Thorndike, Tolman, Watson	Maslow, Rogers	Ausubel, Bruner, Gagne, Koffka, Kohler, Lewin, Piaget	Bandura, Rotter
View of the learning process	Change in behavior	A personal act to fulfill development	Information processing (including insight, memory, perception, metacognition)	Interaction with and observation of other: a social context

Locus of learning	Stimuli in external environment	Affective and developmental needs	Internal cognitive structure	Interaction of person behavior, environment
Purpose of learning	To produce behavioral change in desired direction	To become self-actualized, mature, autonomous	To develop capacity and skills to learn better	To learn new roles and behaviors
Instructor's role	Arrange environment to elicit desired response	Facilitate development of whole person	Structure content of learning activity	Model and guide new roles and behaviors
Manifestation in adult learning	<ul style="list-style-type: none"> • Behavioral objectives • Accountability • Performance improvement • Skill development • HRD and training 	<ul style="list-style-type: none"> • Andragogy • Self-directed learning • Cognitive development • Transformational learning 	<ul style="list-style-type: none"> • Learning how • Social role acquisition • Intelligence, learning, and memory as related to age 	<ul style="list-style-type: none"> • Socialization • Self-directed learning • Locus of control • Mentoring

Also in contrast to behaviorists, researchers working from a cognitivist perspective focus not on external behavior but on internal mental processes. Cognitivists are interested in how the mind makes sense out of stimuli in the environment—how information is processed, stored, and retrieved. This orientation is especially evident in the study of adult learning from a developmental perspective. The major concerns are how aging affects an adult's ability to process and retrieve information and how it affects an adult's internal mental structures.

The fourth orientation discussed here is social cognitive learning. This perspective differs from the other three in its focus on the social setting in which learning occurs. From this perspective, learning occurs through the observation of people in one's immediate environment. Furthermore, learning is a function of the interaction of the person, the environment, and the behavior. Variations in behavior under the same circumstances can be explained by idiosyncratic personality traits and their unique interaction with environmental stimuli. Social learning theories contribute to adult learning by highlighting the importance of social context and explicating the processes of modeling and mentoring.

Finally, constructivism, representing an array of perspectives, posits that learners construct their own knowledge from their experiences. The cognitive process of meaning-making is emphasized as both an individual mental activity and a socially interactive interchange. Aspects of constructivism can be found in self-directed learning, transformational learning, experiential learning, situated cognition, and reflective practice.



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