

# CHAPTER 3

# Applying Learning Theories to Healthcare Practice

Margaret M. Braungart | Richard G. Braungart | Pamela R. Gramet

## Chapter Highlights

- Psychological Learning Theories
  - *Behaviorist Learning Theory*
  - *Cognitive Learning Theory*
  - *Social Learning Theory*
  - *Psychodynamic Learning Theory*
  - *Humanistic Learning Theory*
- Applying Learning Theories to Health Care
- Motor Learning
  - *Stages of Motor Learning*
  - *Motor Learning Variables*
- Common Principles of Learning
  - *How Does Learning Occur?*
  - *Which Kinds of Experiences Facilitate or Hinder the Learning Process?*
  - *What Helps Ensure That Learning Becomes Relatively Permanent?*

## Objectives

*After completing this chapter, the reader will be able to*

1. Analyze the major differences in how teaching and learning are approached in the five learning theories.
2. Describe the role of the teacher according to each theory.
3. Discuss at least three ways to motivate learners based on the learning theories.
4. Outline how to teach patients new information using different learning theories.
5. Explain specific teaching strategies to use for each stage of Fitts and Posner's three stages of motor learning.
6. Give examples of how different types of practice and feedback variables in motor learning can be applied to patient teaching.

## Key Terms

behaviorist learning  
cognitive development  
cognitive learning  
defense mechanisms  
feedback  
gestalt perspective  
hierarchy of needs  
humanistic learning  
information processing  
learning  
learning theory  
mental practice  
motor learning  
motor performance  
operant conditioning  
practice  
psychodynamic learning  
respondent conditioning  
role modeling  
social cognition  
social learning  
spontaneous recovery  
stages of motor learning  
systematic desensitization  
vicarious reinforcement

**Learning** is defined in this chapter as a relatively permanent change in thinking, emotional functioning, skill, and/or behavior as a result of experience. It is the process by which individuals gain new knowledge or skills and change their thoughts, feelings, attitudes, and actions. Although people in every culture have beliefs about how teaching and learning should occur, there are several major theories of learning that have been tested with research. Each theory describes or explains how learning occurs and has its own vocabulary, perspectives on learning, and generalizations about teaching and learning. The major learning theories are widely applicable and form the foundation for the field of education, health education, psychological and psychiatric counseling, workplace organization and human resources management, and marketing and advertising.

Learning allows individuals to adapt to demands and changing circumstances and is crucial in health care—whether for patients and families struggling with ways to improve their health and adjust to their medical conditions, for students gaining the information and skills necessary to become a nurse, or for staff nurses developing more effective approaches to educating and treating patients. Despite the significance of learning to each individual’s development, functioning, health, and well-being, debate continues about how learning occurs, which kinds of experiences assist or slow the learning process, and what ensures that learning becomes relatively permanent.

A **learning theory** is a logical framework describing, explaining, or predicting how people learn. Whether used singly or in combination, learning theories have much to offer the practice of health care. Increasingly, health professionals—including nurses—must demonstrate that they regularly use sound methods and a clear rationale in their education efforts, patient and client interactions, staff management and training, and continuing education and health promotion programs (Ferguson & Day, 2005).

Given the current structure of health care in the United States, nurses, in particular, are often responsible for designing and implementing plans and procedures for improving health education and encouraging wellness. Beyond one’s profession, however, knowledge of the learning process relates to nearly every aspect of daily life. Nurses can apply learning theories at the individual, group, and community levels to understand and teach new material and tasks, solve problems, change unhealthy habits, build constructive relationships, manage emotions, and develop effective behavior.

This chapter reviews the psychological and motor learning theories that are useful to health education and clinical practice. Behaviorist, cognitive, and social learning theories are most often applied to patient education as an aspect of professional nursing practice. This chapter also treats psychodynamic and humanistic perspectives as learning theories because they encourage a patient-centered approach to care and add much to our understanding of human motivation and emotions in the learning process. Emotions and feelings, it is argued, are critical to understanding learning (Goleman, 1995), especially in a healthcare setting (Halpern, 2001). Why? Emotional reactions are often learned as a result of experience, they play a significant role in the learning process, and they are a vital consideration when dealing with health, disease, prevention, wellness, medical treatment, recovery, healing, and relapse prevention. In addition, motor learning is included as a theory because it offers a framework for nurses teaching motor skills to patients.

The goals of this chapter are to provide a framework for understanding subsequent chapters in this text and to offer a toolbox of approaches that nurses can use to enhance learning and change in patients, oneself, and others. After completing the chapter, readers should be able to describe the basic principles of learning, discuss various ways in which teaching and learning can be approached, and develop alternative strategies to change attitudes, behaviors, and skills of learners in different settings.

## Psychological Learning Theories

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This section summarizes some of the basic principles of the behaviorist, cognitive, social learning, psychodynamic, and humanistic learning theories. While reviewing each theory, readers are asked to consider the following questions:

1. What is the basic focus of each theory in explaining how learning and motivation occur?
2. What motivates individuals to learn?
3. What is the role of the nurse as teacher in the learning process?

### Behaviorist Learning Theory

According to the **behaviorist learning** theory, learning is the result of connections made between the stimulus conditions in the environment (S) and the individual's responses (R) that follow—sometimes termed the S–R model of learning. Whether dealing with animals or people, the learning process is relatively simple. Generally ignoring what goes on inside the individual, behaviorists closely observe a person's responses to the environment and then manipulate stimuli in the environment to bring about the intended learning and behavioral change. Currently in educational and clinical psychology, behaviorist theories are more likely to be used in combination with other learning theories, especially cognitive theory (Bush, 2006; Dai & Sternberg, 2004). Behaviorist theory continues to be considered useful in nursing practice for the delivery of health care.

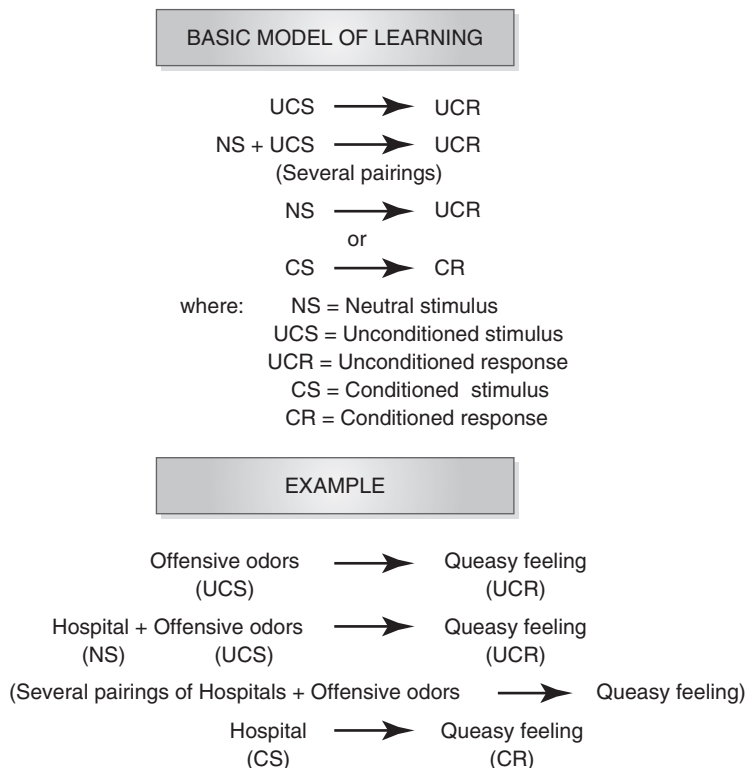
To encourage people to learn new information or to change their attitudes and responses, behaviorists recommend altering conditions in the environment and reinforcing positive behaviors after they occur. Motivation is explained as the desire to reduce some drive (drive reduction), such as the desire for food, security, recognition, or money. This is why individuals who are satisfied or who have what they want may have little motivation to learn new behaviors or change old behaviors. Getting behavior to transfer from the initial learning situation to other settings is largely a matter of practice (strengthening habits). Transfer of learning occurs when there is a similarity in the stimuli and responses in the initial learning situation to future situations where behavior is expected to occur. Essentially there are two ways to change behavior and encourage learning using the behaviorist principles of respondent conditioning and operant conditioning.

First identified and demonstrated by Russian physiologist, Ivan Pavlov, **respondent conditioning** (also termed *classical* or *Pavlovian conditioning*) emphasizes the importance of stimulus conditions in the environment and the associations formed in the learning

process (Ormrod, 2016). Although it may seem complicated at first, the explanation for learning or conditioning is really quite simple. A neutral stimulus (NS)—a stimulus that has no particular value or meaning to the learner—is paired with a naturally occurring unconditioned or unlearned stimulus (UCS) and unconditioned response (UCR) (Figure 3–1). After a few such pairings, the neutral stimulus alone (i.e., without the unconditioned stimulus) elicits the same response. Often without thought or awareness, learning occurs when the newly conditioned stimulus (CS) becomes associated with the conditioned response (CR).

Consider an example from health care. Someone without much experience with hospitals (NS) may visit a relative who is ill. While in the relative's room, the visitor may smell offensive odors (UCS) and feel queasy and light-headed (UCR). After this initial visit and later repeated visits, hospitals (now the CS) may become associated with feeling anxious and nauseated (CR), especially if the visitor smells odors similar to those encountered during the first experience (see Figure 3–1).

Respondent conditioning highlights the importance of what is going on in the environment in health care. Often without thinking or reflection, patients and visitors make associations as a result of their hospital experiences, providing the basis for long-lasting



**Figure 3–1 Respondent conditioning model of learning**

attitudes toward medicine, healthcare facilities, and health professionals. Principles of respondent conditioning may be used to get rid of or eliminate a previously learned response, which is especially useful in teaching people to reduce their anxiety or break bad habits. In this case, old responses or habits can be weakened if the presentation of the conditioned stimulus is not accompanied by the unconditioned stimulus over time. Thus, if the visitor who became dizzy after smelling offensive odors in one hospital goes to other hospitals to see relatives or friends without smelling offensive odors, then her discomfort and anxiety about hospitals may lessen after several such experiences and she has learned—or been conditioned to—a new response to hospitals (CR).

**Systematic desensitization** is a technique based on respondent conditioning that is used by psychologists to reduce fear and anxiety in their clients (Wolpe, 1982). The assumption is that fear of a particular stimulus or situation is learned; thus it can also be unlearned or extinguished. With this approach, fearful individuals are first taught relaxation techniques. While they are in a state of relaxation, the fear-producing stimulus is gradually introduced at a nonthreatening level so that anxiety and emotions are not aroused. After repeated pairings of the stimulus under relaxed, nonfrightening conditions, the individual learns that no harm will come to him from the once fear-inducing stimulus. Finally, the client is able to confront the stimulus without being anxious and afraid.

In healthcare research, respondent conditioning has been used to extinguish chemotherapy patients' anticipatory nausea and vomiting (Lotfi-Jam et al., 2008; Stockhurst, Steingrueber, Enck, & Klosterhalfen, 2006), while systematic desensitization has been used to treat drug addiction (Piane, 2000), phobias (McCullough & Andrews, 2001), dental anxiety (Armfield & Heaton, 2013; Heaton, Leroux, Ruff, & Coldwell, 2013), and body image disturbance in women with eating disorders (Bhatnagar, Wisniewski, Solomon, & Heinberg, 2013). Also, it has been used to teach children with attention-deficit/hyperactivity disorder (ADHD) or autism to swallow pills (Beck, Cataldo, Slifer, Pulbrook, & Guhman, 2005). Prescription drug advertisers regularly use conditioning principles to encourage consumers to associate a brand-name medication with happy and improved lifestyles; once conditioned, consumers will likely favor the advertised drug over competitors' medications and the much less expensive generic form. As another example, taking the time to help patients relax and reduce their stress when applying some medical intervention—even a painful procedure—lessens the likelihood that patients will build up negative and anxious associations about medicine and health care.

It is worth noting that although a response may appear to be extinguished, it may recover and reappear at any time (even years later), especially when stimulus conditions are similar to those in the initial learning experience. This is called **spontaneous recovery**, which helps us understand why it is so difficult to completely eliminate unhealthy habits and addictive behaviors such as smoking, alcoholism, and drug abuse.

Operant conditioning is another behaviorist approach to learning, which was developed primarily by B. F. Skinner (1974, 1989). **Operant conditioning** focuses on the behavior of the organism and the reinforcement that occurs after the response. A reinforcer is a stimulus or event applied after a response that strengthens the probability that the response will be performed again. Praise, hugs, money, and prizes are examples of

positive reinforcers. When specific responses are reinforced on the proper schedule, behaviors can be either increased or decreased.

The best way to increase the probability that a response will occur again is to apply positive reinforcement or rewards after the behavior occurs. As an illustration, although a patient moans and groans as she attempts to get up and walk for the first time after an operation, praise and encouragement (reward) for her efforts at walking (response) will improve the chances that she will continue struggling toward independence.

Decreasing a response, such as breaking a bad habit, is accomplished by using either nonreinforcement or punishment. Skinner (1974) maintained that the simplest way to get rid of a response is not to provide any kind of reinforcement for some unwanted action. For example, unpleasant jokes in the workplace may be handled by showing no reaction. After several such experiences, the joke teller, who more than likely wants attention, may stop his use of offensive humor. Keep in mind, too, that desirable behavior that is ignored may lessen as well if its reinforcement is withheld.

If nonreinforcement does not work, then punishment may be used as a way to decrease responses. For example, if the obnoxious joke teller does not respond to reinforcement, then someone might announce that the joke is offensive to the group, which might serve as punishment—unless, of course, the joke teller most wants attention, and to some people negative attention is preferable to no attention. However, there are risks to using punishment, especially because the learner may become so emotional (sad or angry) that he does not even remember why he is being punished. The purpose of punishment is not to do harm or to serve as a release for anger. The goal is to get someone's attention to decrease a specific behavior and to instill self-discipline. If punishment is used as a last resort, it should be immediate, reasonable, and focused clearly on the behavior, not the person.

For operant conditioning to be effective, it is necessary to assess which kinds of reinforcement are likely to increase or decrease behaviors for each individual. Not every client, for example, finds health practitioners' terms of endearment rewarding. Comments such as, "Very nice job, dear," may be offensive to some clients. A second issue involves the timing of reinforcement. The success of operant conditioning procedures partially depends on when the reinforcement is applied. According to this theory, in the early stages, learning needs to be reinforced every time it occurs. Once a response is well established, however, behavior needs to be reinforced only every so often, because the goal is for the learner to internalize the response and build good habits without being supervised.

Operant conditioning techniques provide relatively quick and effective ways to change behavior. Carefully planned programs using behavior modification procedures can readily be applied to health care. For example, computerized instruction and tutorials for patients and staff rely heavily on operant conditioning principles in structuring learning programs. Operant conditioning has even been used as a simple method of helping staff reduce noise levels in a resource-constrained neonatal intensive care unit (Ramesh et al., 2012). In the clinical setting, the families of patients with chronic back pain have been taught to minimize their attention to the patients whenever they complain and behave in dependent, helpless ways, but to pay a lot of attention when the patients attempt to function independently, express a positive attitude, and try to

live as normal a life as possible. Some patients respond so well to operant conditioning that they report experiencing less pain as they become more active and involved. For example, recent studies have shown that operant conditioning by a physiotherapist has proved to be more effective than a placebo as an intervention in reducing short-term pain in patients with subacute low back pain (Bunzli, Gillham, & Esterman, 2011) and as a promising strategy for the prevention of chronic low back pain (Brunner, De Herdt, Minguet, Baldew, & Probst, 2013).

The behaviorist theory is simple and easy to use. It does, however, require careful analysis of what is happening in the environment that affects people's behavior and what factors influence a person's responses. Nevertheless, some criticisms and cautions must be considered. For one thing, learners are assumed to be relatively passive and easily manipulated, which raises the ethical question: Who is to decide what the desirable behavior should be? Too often the desired response is conformity and cooperation to make someone's job easier or more profitable.

In addition, the theory's emphasis on rewards and incentives reinforces and promotes materialistic values and doing things only for some personal gain. Another concern is that research evidence supporting behaviorist theory is often based on animal studies, the results of which may not be applicable to human behavior. A final shortcoming of behaviorist techniques is that changed behavior in patients may weaken over time, especially once they are back in the environment that may have caused their problems in the first place. The basic principles of behaviorist learning are:

- Focus on the learner's drives, the external factors in the environment that influence a learner's associations, and on reinforcements that increase or decrease responses.
- The teacher's task is first to assess conditions in the environment that lead to specific responses, the learner's past habits and history of S-R connections, and what is reinforcing the learner. Then teachers must effectively manipulate conditions to build new associations, provide appropriate reinforcement, and allow for practice to strengthen connections between stimuli in the environment and a person's responses or behavior.

The next section moves from focusing on responses and behavior to considering the role of mental processes in learning.

## Cognitive Learning Theory

In contrast to behaviorist theory, **cognitive learning** theory focuses on what goes on inside the mind of the learner. Cognitive theory is assumed to be made up of a number of subtheories and is widely used in education and counseling. According to this perspective, for individuals to learn, they must change their perceptions and thoughts and form new understandings and insights. The individual largely directs the learning process by organizing information based on what is already known, and then reorganizing the information into a new understanding.

Unlike behaviorists, cognitive psychologists maintain that rewarding people for their behavior is not necessary for learning. More important are learners' goals and

expectations, which create tensions that motivate them to act. Teachers and those trying to influence the learning process must recognize that any learning situation is influenced by learners' past experiences, perceptions, and ways of incorporating and thinking about information in relation to their goals, expectations, and the social influences on the situation. To promote remembering, the learner must think about or act on the information. Similar patterns in the initial learning situation and subsequent situations aid memory and the ability to transfer learning from one situation to the next.

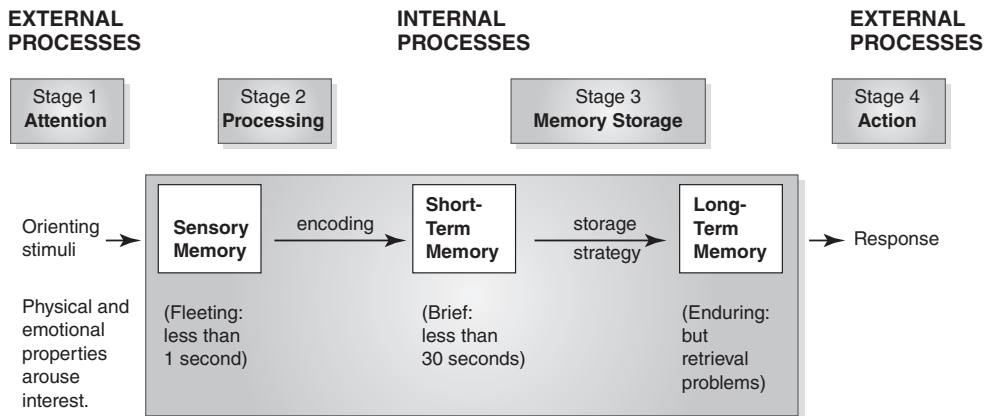
Cognitive learning theory includes several well-known perspectives, such as gestalt, information processing, cognitive development, and social cognition theory. More recently, attempts have been made to incorporate considerations related to emotions within cognitive theory. Each of these perspectives emphasizes a particular feature of cognition; collectively, when pieced together, they indicate much about what goes on inside the learner.

One of the oldest psychological theories is the **gestalt perspective**, which emphasizes the importance of perception in learning and laid the groundwork for the various other cognitive perspectives that followed (Kohler, 1947, 1969; Murray, 1995). Rather than focusing on individual stimuli, gestalt refers to the configuration or patterned organization of cognitive elements, reflecting the maxim that “the whole is greater than the sum of its parts.” A principal assumption is that each person perceives, interprets, and responds to any situation in his or her own way. While many gestalt principles worth knowing have been identified (Hilgard & Bower, 1966), the discussion here focuses on those that relate to health care.

A basic gestalt principle is that people strive toward simplicity, equilibrium, and regularity. For example, study the bewildered faces of some patients listening to a complex, detailed explanation about their disease; what they actually desire most is a simple, clear explanation that settles their uncertainty and relates directly to them and their familiar experiences. Another central gestalt principle is that perception is selective, which has several implications. First, because no one can attend to all possible surrounding stimuli at any given time, individuals pay attention to certain features of an experience while screening out or ignoring other features. Patients who are in severe pain or who are worried about their hospital bills, for example, may not attend to patient education information, no matter how well presented. Second, what individuals select to pay attention to and what they ignore are influenced by a host of factors such as past experiences, needs, motives and attitudes, and the particular structure of the information and the situation (Sherif & Sherif, 1969). Because individuals vary widely with regard to these and other characteristics, they will perceive, interpret, and respond to the same event in different ways, perhaps distorting information to fit their goals, expectations, and what they want to hear. This tendency helps explain why an approach that is effective with one client may not work with another client. People with chronic illnesses—even different people with the same illness—are not alike, and helping any patient with disease or disability includes recognizing each person's unique perceptions and subjective experiences (Imes, Clance, Gailis, & Atkeson, 2002).

**Information processing** is a second cognitive perspective that emphasizes thinking, reasoning, the way information is encountered and stored, and memory functioning





**Figure 3–2 Information-processing model of memory**

(Gagné, 1985; Sternberg & Sternberg, 2012). How information is incorporated and retrieved is useful for nurses to know, especially in relation to older people’s learning (Hooyma & Kiyak, 2011; Kessels, 2003). **Figure 3–2** illustrates an information-processing model of memory functioning.

The stages are:

- *Attention.* Certain information is focused on while other information in the environment is ignored. Attention is viewed as the key to learning. Thus, if a patient is not concentrating on what the nurse is saying, perhaps because the patient is weary or distracted, it would be wise to try the explanation at another time when the patient is more receptive and attentive.
- *Processing.* Information is processed using one or more of the senses. Here it becomes important to consider the client’s preferred mode of sensory processing (visual, hearing, or by using touch or motor skills). It is also important to determine whether there are any sensory deficits, such as hearing loss or poor eyesight.
- *Memory storage.* Information is transformed and incorporated (encoded) briefly into short-term memory, after which it suffers one of two fates: The information is disregarded and forgotten, or it is stored in long-term memory. Information is stored in long-term memory by using a strategy, such as forming a mental picture (visual imagery), associating the information with what is already known, repeating or rehearsing the information, or breaking the information into smaller units or chunks. Although long-term memories are enduring, a central problem is retrieving the stored information at a later time.
- *Action.* The action or response that the individual makes is based on how the information was processed and stored. Responses must be observed carefully in case corrections need to be made, although there is always a question as to whether any performance is a true indicator of someone’s learning and competence. People may not really know the answer but guess correctly, or they may know the answer but not perform correctly for some reason.

From this perspective, teaching involves assessing the ways a learner attends to, processes, and stores the information that is presented, as well as finding ways to encourage remembering and being able to recall the information. In general, cognitive psychologists note that memory is helped by organizing the information and making it meaningful.

**Cognitive development**, which is heavily influenced by gestalt psychology, is a third perspective on learning. It focuses on advancements and changes in perceiving, thinking, and reasoning as individuals grow and mature (Crandell, Crandell, & Vander Zanden, 2012; Santrock, 2013). This approach is especially useful to know when working with children and teenagers. How information and experiences are perceived and represented depends on an individual's stage of development and readiness to learn. A principal assumption is that learning is a sequential and active process that occurs as the child interacts with the environment and makes discoveries, which are interpreted in keeping with what she knows (schema) and is capable of understanding.

Jean Piaget is the best known of the cognitive developmental theorists. His observations of children's perceptions and thought processes at different ages have contributed much to our recognition of the special ways that young people reason, the changes in their abilities to reason, and the limitations in their ability to understand, communicate, and perform (Piaget & Inhelder, 1969). By watching, asking questions, and listening to children, Piaget identified and described four successive stages of cognitive development (sensorimotor, preoperational, concrete operations, and formal operations) that unfold sequentially over the course of infancy, early childhood, middle childhood, and adolescence. (See Chapter 5 for more on developmental stages.)

According to this theory, children take in information as they interact with people and the environment. They either make their experiences fit with what they already know (assimilation) or change their perceptions and interpretations in keeping with the new information (accommodation). Nurses and family members need to determine what children are perceiving and thinking in a given situation. As an illustration, young children usually do not comprehend fully that death is final. They respond to the death of a loved one in their own way, perhaps asking God to give back the dead person or believing that if they act like a good person, the deceased loved one will return to them (Gardner, 1978).

Advocates of the cognitive development perspective have some differences in their views that are worth considering by nurses. For example, while Piaget stresses the importance of perception in learning and views children as little scientists exploring, interacting, and discovering the world in a relative solitary manner, Russian psychologist Lev Vygotsky (1986) emphasizes the significance of language, social interaction, and adult guidance in the learning process. When teaching children, Vygotsky says the job of adults is to interpret, respond, and give meaning to children's actions. Rather than the discovery method favored by Piaget, Vygotsky encourages clear, well-designed instruction that is carefully structured to advance each person's thinking and learning.

In practice, some children may learn more effectively by discovering and putting pieces together on their own, whereas other children benefit from a more social and directive approach. It is the nurse's responsibility to identify the child's or teenager's

stage of thinking, to provide experiences at an appropriate level for the child to actively discover and participate in the learning process, and to determine whether a child learns best through language and social interaction or through perceiving and experimenting in his or her own way.

What do cognitive developmental theorists say about adult learning? First, some adults never reach the formal operations stage. These adults may learn better from simple, concrete approaches to health education. In addition, while some older adults may demonstrate an advanced level of reasoning gained from their wisdom and life experiences, others may reflect lower stages of thinking resulting from lack of education, disease, depression, stress, or the effects of medications (Hooyman & Kiyak, 2011). Research indicates that adults generally do better when offered opportunities for self-directed learning (emphasizing learner control, independence, and initiative), a clear rationale for learning, a problem-oriented rather than subject-oriented approach, and opportunities to use their experiences and skills to help others (Tennant, 2006). Also, teachers must keep in mind that anxiety, the demands of adult life, and childhood experiences may interfere with learning in adulthood.

The **social cognition** approach is a fourth perspective in cognitive psychology, which emphasizes the effects of social factors on perception, thought, and motivation. According to this view, the players in any healthcare setting would be expected to have differing perceptions, interpretations, and responses to a situation that are strongly colored by their social and cultural experiences. For example, patients with certain religious views or a particular type of parental upbringing may believe that their disease is a punishment for their sins, whereas other patients may blame their disease on the actions of others. From this perspective, patients' explanations for their diseases may or may not promote wellness and well-being. The route to changing health behaviors is to change distorted beliefs and explanations. With America's rapidly changing age and ethnic composition, the social cognition approach will become especially useful in the healthcare setting.

Cognitive theory has been criticized for neglecting emotions, and recent efforts have been made to incorporate considerations related to emotions within a cognitive framework (Eccles & Wigfield, 2002; Goleman, 1995; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Hoffman, 2000). When working with patients, family, and staff, nurses need to exhibit and encourage empathy and emotional intelligence, which refers to managing one's emotions, motivating oneself, reading the emotions of others, and working effectively in interpersonal relationships (Goleman, 1995). Emotional intelligence can play a moderating role in the experience of job stress for nurses (Gorgens-Ekermans & Brand, 2012; Karimi, Leggat, Donohue, Farrell, & Couper, 2014), and high emotional intelligence may increase well-being in female nursing and allied health students by reducing the experience of stress (Ruiz-Aranda, Extremera, & Pineda-Galan, 2014).

H. O'Sullivan and McKimm (2014) stress the importance of emotions in the everyday practice of medical care. Research indicates that the development of cognitive emotional perspectives in self and patients is associated with a greater likelihood of healthy behavior, psychological well-being, optimism, and meaningful social interactions (Brackett, Lopes, Ivcevic, Mayer, & Salovey, 2004). When applied to health care, cognitive learning

theory encourages an appreciation of the individuality and rich diversity in how people learn and process experiences. Cognitive theory has proved useful in formulating exercise programs for breast cancer patients (Rogers et al., 2004), understanding individual differences in bereavement (Stroebe, Folkman, Hansson, & Schut, 2006), and dealing with adolescent depression in girls (Papadakis, Prince, Jones, & Strauman, 2006). The challenge in teaching is to identify a learner's level of cognitive development, his or her goals and expectations, ways of perceiving and processing information, and the social influences that affect learning. Once identified, teachers can find novel ways to encourage new insights and to solve problems. To summarize, the basic principles of cognitive learning theory are:

- Focus on internal factors within learners, such as their developmental stage of reasoning; perceptions; thoughts; ways of processing and storing information in memory; and the influence of social factors on attitudes, thoughts, and actions. Realize that learning is motivated by the learner's goals and expectations, as well as by a feeling of imbalance, tension, and a desire to restore equilibrium.
- The role of the teacher is first to assess each learner's developmental stage, goals and expectations, preferred style of learning, and ways of processing, storing, and retrieving information. The next steps are to foster curiosity (imbalance); organize learning experiences and make them meaningful; encourage understanding, insight, problem solving, and creativity in learners; and keep learning simple and at an appropriate level.

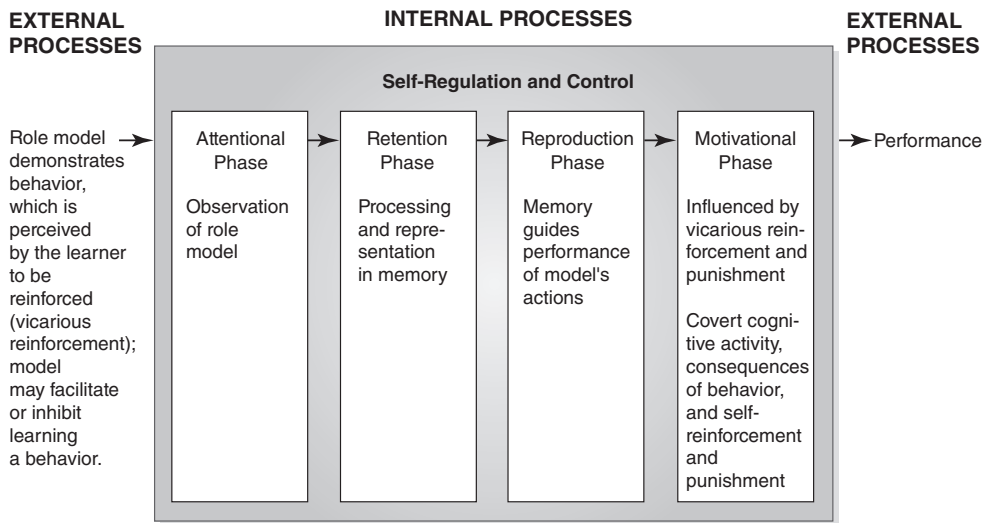
The next learning theory combines principles from both the behaviorist and cognitive theories.

### Social Learning Theory

Most learning theories assume the individual must have direct experiences in order to learn. According to the **social learning** theory, much of learning occurs by observation—watching other people and determining what happens to them. Learning is often a social process, and other individuals, especially significant others, provide compelling examples as role models for how to think, feel, and act.

Social learning theory is largely based on the work of Albert Bandura (1977, 2001), who mapped out a perspective on learning that includes consideration of the personal characteristics of the learner, behavior patterns, and the environment. In early discussions of this theory, Bandura emphasized behaviorist features and the imitation of role models; later, the focus shifted to cognitive considerations, and more recently, Bandura's attention has turned to the impact of social factors and the social context within which learning and behavior occur. **Figure 3–3** illustrates the dynamics of social learning based on Bandura's work.

**Role modeling** is a central concept of the social learning theory. As an example, a more experienced nurse who demonstrates desirable professional attitudes and behaviors sometimes serves as a mentor for a less experienced nurse, while medical students, interns, and residents are mentored by attending physicians. **Vicarious reinforcement** is another concept from social learning theory and involves viewing other people's



**Figure 3–3 Social learning theory**

emotions and determining whether role models are perceived as rewarded or punished for their behavior. Reward is not always necessary, however, and a learner may imitate the behavior of a role model even when no reward is available to either the role model or the learner. Nevertheless, in many cases, whether the model is viewed by the observer as rewarded or punished may have a direct influence on learning. This relationship may be one reason why it is difficult to attract health professionals to geriatric care. Although some highly impressive role models work in this field, geriatric health care is often accorded lower status with less pay in comparison to other specialty areas.

Although social learning theory is based partially on behaviorist principles, the self-regulation and control that the individual exerts in the learning process is critical and reflects cognitive principles. Bandura (1977) outlines a four-step, largely internal process that directs social learning. As seen in Figure 3–3, the first step in Bandura's model is the attentional phase, a necessary condition for any learning to occur. Research indicates that role models with high status and competence are more likely to be observed, although the learner's own characteristics (needs, self-esteem, competence) may be the more significant determiner of attention. Second is the retention phase, which involves the storage and retrieval of what was observed. Third is the reproduction phase, when the learner copies the observed behavior. Mental rehearsal, immediate enactment, and corrective feedback strengthen the reproduction of behavior. Fourth is the motivational phase, which indicates the learner's level of motivation to perform a certain type of behavior.

Reinforcement or punishment of a role model's behavior, the learning situation, and the appropriateness of subsequent situations where the behavior is to be displayed all combine to affect a learner's performance (Bandura, 1977; Gage & Berliner, 1998). This organized approach to learning, which is well suited to conducting patient education

and staff development training, requires paying attention to the social environment, the behavior to be performed, and the individual learner (Bahn, 2001).

More recently, Bandura (2001) shifted his focus to sociocultural influences, viewing the learner as the agent through which learning experiences are filtered. He stresses the importance of the individual's social environment and cultural orientation on the development of self-efficacy and self-regulation. This perspective applies particularly well to the acquisition of health behaviors. It partially explains why some people select positive role models and effectively regulate their attitudes, emotions, and actions, whereas other people choose negative role models and engage in unhealthy and destructive behaviors. One of Bandura's (2001) principal research findings is that self-efficacy contributes to productive human functioning. Nurses need to find ways to encourage patients' feelings of competency and to promote wellness rather than fostering dependency, helplessness, and feelings of low self-worth.

Social learning theory extends the learning process beyond the teacher–learner relationship to the larger social world. This theory helps explain the socialization process as well as the breakdown of behavior in society. Responsibility is placed on the teacher or leader to act as a positive role model and to choose socially healthy experiences for individuals to observe and repeat (requiring the careful evaluation of learning materials for stereotypes, mixed or hidden messages, and negative effects). Yet simple exposure to role models correctly performing a behavior that is rewarded (or performing some undesirable behavior that is punished) does not guarantee learning. Attention to the learner's self-system and the dynamics of self-regulation may help sort out the varying effects of the social learning experience.

In health care, nurses and other health professionals have applied social learning principles to working with teenage mothers (Stiles, 2005), developing a sexual counseling intervention for post-myocardial infarction patients (Steinke, Mosack, Hertzog, & Wright, 2012), facilitating simulation learning (Bethards, 2014; Burke & Mancuso, 2012), exploring the risk of obesity (Christakis & Fowler, 2007), and the dynamics of smoking cessation (Christakis & Fowler, 2008).

The basic principles of social learning theory are:

- Focus on role models, the reinforcement that a model has received, the social environment, and the self-regulating processes within the learner.
- The role of the teacher is to act as a stellar role model, to use effective role models in teaching that are rewarded for their behavior, to assess the internal regulation of the learner, and to provide feedback for the learner's performance.

The final two theories reviewed in this chapter focus on the importance of emotions and feelings in the learning process.

### Psychodynamic Learning Theory

Although not usually treated as a learning theory, some of the concepts from **psychodynamic learning** theory (based on the work of Sigmund Freud and his followers) have significant implications for learning and changing behavior (Hilgard & Bower, 1966; Slipp, 2000). Largely a theory of motivation, the emphasis in psychodynamic

theory is on emotions rather than on responses to the environment or on perceptions and thoughts. A central principle of this theory is the notion that behavior may be conscious or unconscious—in other words, people may or may not be aware of their motivations and why they feel, think, and act as they do.

According to the psychodynamic view of personality development, the most primitive source of motivation comes from the id, which involves our most basic instincts, impulses, and desires. The id includes two components: *eros* (the desire for pleasure and sex, sometimes called the “life force”) and *thanatos* (aggressive and destructive impulses, or “death wish”). Patients who survive or die despite all predictions to the contrary provide illustrations of such primitive motivations. The id, according to Freud, operates on the basis of the pleasure principle—to seek pleasure and avoid pain. For example, patient education provided by nurses who go through the motions of presenting content without much enthusiasm or emotion inspire few patients to listen to the information or follow the advice being given. This does not mean, however, that only pleasurable patient education encounters are acceptable (Hilgard & Bower, 1966).

The id, with its primitive drives, is held in check by the superego, which involves the societal values and standards children are taught. The superego forms the basis for a conscience. According to Freud, if a conscience is not formed by adolescence, it is unlikely to develop later in life. Because the id and superego are in such conflict, they need to be mediated by the ego, which operates on the basis of the reality principle. Thus, rather than insisting on immediate gratification, people learn to take the long road to pleasure and to weigh the choices in the conflict between the id and the superego (Hilgard & Bower, 1966).

Healthy ego (self) development is an important consideration in healthcare fields. For example, patients with ego strength can cope with painful medical treatments because they recognize the long-term value of enduring discomfort and pain to achieve a positive outcome. Patients with weak ego development, in contrast, may miss their appointments and treatments or engage in short-term pleasurable activities that work against their healing and recovery. Helping patients develop ego strength and adjust realistically to a changed body image or lifestyle brought about by disease and medical interventions is a significant aspect of the learning and healing process.

Nurses and other health professionals also require personal ego strength to cope with the numerous predicaments in the everyday practice of delivering care as they face conflicting values, ethical responsibilities, and medical demands. Professional burnout, for example, is rooted in an overly idealized concept of the healthcare role and unrealistic expectations for the self in performing the role. Malach-Pines (2000) notes that burnout may stem from nurses’ childhood experiences with lack of control.

A particularly useful psychodynamic concept for health professionals to know involves the use of ego **defense mechanisms**. When the ego is threatened, as can easily occur in a stressful healthcare setting, defense mechanisms may be employed to protect the self. The short-term use of defense mechanisms is a way of coming to grips with reality. The danger arises from the overuse of or long-term reliance on defense mechanisms, which allows individuals to avoid reality and may act as a barrier to learning and transfer.

**Table 3–1 Ego Defense Mechanisms: Ways of Protecting the Self From a Perceived Threat**

<i>Denial:</i> Ignoring or refusing to acknowledge the reality of a threat
<i>Rationalization:</i> Excusing or explaining away a threat
<i>Displacement:</i> Taking out hostility and aggression on other individuals rather than directing anger at the source of the threat
<i>Depression:</i> Keeping unacceptable thoughts, feelings, or actions from conscious awareness
<i>Regression:</i> Returning to an earlier (less mature, more primitive) stage of behavior as a way of coping with a threat
<i>Intellectualization:</i> Minimizing anxiety by responding to a threat in a detached, abstract manner without feeling or emotion
<i>Projection:</i> Seeing one's own unacceptable characteristics or desires in other people
<i>Reaction formation:</i> Expressing or behaving the opposite of what is really felt
<i>Sublimation:</i> Converting repressed feelings into socially acceptable action
<i>Compensation:</i> Making up for weaknesses by excelling in other areas

**Table 3–1** describes some of the more commonly used defense mechanisms. Because of the stresses involved in health care, knowledge of defense mechanisms is useful, whether for nursing students who are struggling with the challenges of nursing education; staff nurses who are dealing with the challenges of working in hospitals, community agencies, and long-term care facilities; or patients and their families who are learning to cope with illness.

As an example of defense mechanisms in health care, Kübler-Ross (1969) points out that many terminally ill patients' initial reaction to being told they have a serious threat to their health and well-being is to employ the defense mechanism of denial. Patients typically find it too overwhelming to process the information that they are likely to die. Although most patients gradually accept the reality of their illness, the dangers are that if they remain in a state of denial, they may not seek treatment and care, and if their illness is contagious, they may not protect others against infection.

In turn, a common defense mechanism employed by healthcare staff is to intellectualize the significance of disease and death rather than to deal with these issues realistically at an emotional level. This defense mechanism may contribute to the reported tendency of oncologists to often ignore, rather than address, the emotions that patients express during communication (Friedrichsen & Strang, 2003; Friedrichsen, Strang, & Carlsson, 2000; Pollak et al., 2007). One study found that oncologists, in responding to patients expressing fear, more often addressed the topic causing the fear rather than addressing the emotion itself (Kennifer et al., 2009). Telford, Kralik, and Koch (2006) report that nurses may strive to buttonhole terminally ill patients within a denial-acceptance framework too quickly and, as a result, may not listen to patients as they attempt to tell their stories and interpret their illness experiences. Protecting the self (ego) by dehumanizing patients and treating them as diseases and body parts rather than as whole individuals (with spiritual, emotional, and physical needs) is an occupational hazard for nurses and other health professionals.



Another central assumption of psychodynamic theory is that personality development occurs in stages, with much of adult behavior derived from earlier childhood experiences and conflicts. For example, people's behavior when they are sick may reflect their emotional feelings and conflicts from childhood. One of the most widely used models of personality development is Erikson's (1968) eight stages of life, a model organized around a psychosocial crisis to be resolved at each stage. For example, during infancy, the psychosocial crisis to be resolved is trust versus mistrust. The early childhood years involve issues of autonomy versus doubt, followed by initiative versus guilt. The school-aged child comes to terms with industry versus inferiority. Adolescence involves the crisis of intimacy versus isolation. Middle-aged adults focus on generativity versus stagnation. Older adults struggle with integrity versus despair. Erickson noted that the two most significant periods of personality growth occur during adolescence and older adulthood—an important observation for health professionals to consider when working with members of these two age groups. (See Chapter 5 for more on developmental stages.)

Treatment regimens, communication, and health education need to include considerations of the patient's stage of personality development. For example, in working with 4- and 5-year-old patients, where the crisis defined by Erikson is initiative versus guilt, nurses should encourage the children to offer their ideas and to make and do things themselves. Staff also must be careful not to make these children feel guilty for their illness or misfortune. As a second example, the adolescent's psychosocial developmental needs to have friends and to find an identity require special attention in health care. Adolescent patients may need help and support in adjusting to a changed body image and in addressing their fears of weakness, lack of activity, and social isolation. One danger is that young people may treat their illness or impairment as a significant dimension of their identity and self-concept.

The psychodynamic approach reminds nurses to pay attention to emotions, unconscious motivations, and the psychological growth and development of all those involved in health care and learning. The teacher's role is to listen and ask questions. Teachers need to recognize how conscious and unconscious motivations affect learning and to work with id-superego conflicts. The goal is to promote ego strength in learners. Forgetting information may be due to a desire not to remember it or as a result of emotional barriers to learning. Psychodynamic theory is well suited to understanding patient and family noncompliance (Menahern & Halasz, 2000), trauma and loss (Duberstein & Masling, 2000), palliative care and the deeply emotional issues of terminal illness (Chochinov & Breitbart, 2000), the anxieties of working with long-term psychiatric residents (Goodwin & Gore, 2000), and the stress of working with people who have learning disabilities and complex needs (Storey, Collis, & Clegg, 2011). It can even be useful in helping nursing students reflect on the emotional issues arising in their clinical placements (Allan, 2011) and in understanding why some nurse managers use bullying techniques and fail to formally report incidents of violence and aggression (Ferns, 2006).

One problem with the psychodynamic approach is that much of the analysis of learners is open to different interpretations. Health professionals' biases, emotional

conflicts, and motivations may distort their evaluation of other persons and situations. Psychodynamic theory also can be used inappropriately; it is not the job of nurses with little clinical psychology or psychiatric training to probe into the private lives and feelings of patients so as to uncover deep, unconscious conflicts. Another danger is that nurses and other health professionals may depend on the many psychodynamic principles as reasons to explain away, rather than deal with, people as individuals who need emotional care. When applied to learning, the basic principles of psychodynamic theory are:

- Focus on the learner's personality development, significant childhood experiences, conscious and unconscious motivations, id–ego–superego conflicts, and defensive behaviors.
- The teacher's role is to listen, ask probing questions about motivations and wishes, assess emotional barriers to learning, and make learning pleasurable while working to promote ego strength in learners.

### Humanistic Learning Theory

Underlying the **humanistic learning** theory is the assumption that each individual is unique and that all individuals have a desire to grow in a positive way. Unfortunately, say the humanists, positive psychological growth may be damaged by some of society's values and expectations (e.g., males are less emotional than females, some ethnic groups are inferior to others, making money is more important than caring for people) and by adults' mistreatment of their children and one another (e.g., inconsistent or harsh discipline, humiliation and belittling, abuse and neglect). Spontaneity, the importance of emotions and feelings, the right of individuals to make their own choices, and human creativity are the cornerstones of a humanistic approach to learning (Rogers, 1994; Snowman & McCown, 2015). Humanistic theory is especially compatible with nursing's focus on caring and patient centeredness—an orientation that is increasingly being challenged by the emphasis in medicine and health care on science, technology, cost efficiency, for-profit medicine, bureaucratic organization, and time pressures.

Like the psychodynamic theory, the humanistic theory is largely a motivational theory. From a humanistic perspective, the motivation to act stems largely from each person's needs, feelings about the self, and the desire to grow in positive ways. Remembering information and transferring learning to other situations are helped by encouraging curiosity and a positive self-concept, as well as having open situations where people respect individuality and freedom of choice. Under such conditions, flexibility in problem solving and creativity is enhanced.

One of the best known humanistic theorists is Abraham Maslow (1954, 1987), who identified a **hierarchy of needs** (Figure 3-4) to explain human motivation. At the bottom of Maslow's hierarchy are physiological needs (food, water, warmth, sleep); next come safety needs; then the need for belonging and love; followed by self-esteem. At the top of the hierarchy is the need for self-actualization (maximizing one's potential). Within this model, it is assumed that basic-level needs must be met before individuals can be concerned with learning and self-actualizing. Thus clients who are hungry, tired,



**Figure 3–4 Maslow's hierarchy of needs**

Modified from Maslow, A. (1987). *Motivation and personality* (3rd ed.). New York, NY: Harper & Row.

and in pain are motivated to get these biological needs met before they will be open to learning about their illness, rules for self-care, and health education. Although this model is intuitively appealing, research has not been able to support Maslow's hierarchy of needs with much consistency. For example, although some people's basic needs may not be met, they may nonetheless engage in creative activities, extend themselves to other people, and enjoy learning (Pfeffer, 1985).

Besides personal needs, humanists believe that self-concept and self-esteem are necessary considerations in any learning situation. The therapist Carl Rogers (1961, 1994) argues that what people want most is unconditional positive self-regard (the feeling of being loved without strings attached). Experiences that are threatening, coercive, and judgmental undermine the ability and enthusiasm of individuals to learn. Thus, it is essential that those in positions of authority convey a fundamental respect for the people with whom they work. If a nurse is prejudiced against patients with AIDS, for example, then little will be healing or therapeutic in that nurse's relationship with them until she is genuinely able to feel respect for each patient as an individual.

Rather than acting as an authority, say humanists, the role of any educator or leader is to serve as a facilitator (Rogers, 1994). Listening—rather than talking—is the skill needed. Because the uniqueness of the individual is fundamental to the humanistic perspective, much of the learning experience is based on a direct relationship between the teacher and the learner, with instruction being tailored to the needs, self-esteem, and positive growth of each learner. Learners are the ones who choose what is to be learned. Teachers serve as resource persons whose job is to encourage learners to make wise choices. Because the central focus is on learners' perceptions, desires, and decision making, the humanistic orientation is referred to as a learner-directed approach (Snowman & McCown, 2015). Mastering information and facts is not the central purpose of the humanistic model of learning. Encouraging curiosity, enthusiasm, initiative, and responsibility is much more important and enduring and should be the primary goal of any educational effort. As an illustration, rather than inserting health education videos into television sets for patients in hospitals to view or routinely distributing lots of pamphlets and pages of small-print instructions, for example, the humanistic perspective indicates efforts should be devoted to establishing rapport and becoming emotionally attuned to patients and their family members.

Humanistic psychology stresses that feelings and emotions are the keys to learning, communication, and understanding. Humanists worry that in today's stressful society, people can easily lose touch with their feelings, which sets the stage for emotional problems and difficulties in learning (Rogers, 1961). To humanists, "Tell me how you feel" is a much more important instruction than "Tell me what you think" because thoughts and "the shoulds" may be at odds with true feelings. Humanistic principles are the foundation of self-help groups, wellness programs, and palliative care. They are also well suited to working with children and young patients undergoing separation anxiety caused by illness, surgery, and recovery (Holyoake, 1998), and to working in the areas of mental health and palliative care (Barnard, Hollingum, & Hartfiel, 2006). As in psychodynamic theory, a principal emphasis is on the healing nature of the therapeutic relationship (Pearson, 2006) and the need for health professionals to learn and grow from their healthcare experiences (Block & Billings, 1998).

The humanistic theory has its weaknesses as well. Research has not been able to substantiate some of its strongest claims, and the theory has been criticized for promoting self-centered learners who cannot take criticism or compromise. The touchy-feely approach of humanism makes some learners and educators feel truly uncomfortable. Moreover, information, facts, memorization, drill, practice, and the tedious work sometimes required to master knowledge, which humanists minimize and sometimes scorn, have been found to contribute to significant learning, knowledge building, and skill development (Gage & Berliner, 1992). To summarize, humanistic theory suggests the following principles of learning:

- Focus on the learner's desire for positive growth, subjective feelings, needs, self-concept, choices in life, and interpersonal relationships.
- The teacher's role is to assess and encourage changes in the learner's needs, self-concept, and feelings by providing support, freedom to choose, and opportunities for spontaneity and creativity.

## Applying Learning Theories to Health Care

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A logical question is which of these five theories best describes or explains learning—which theory, in other words, would be the most helpful to nurses interested in increasing knowledge or changing the behavior of patients, staff, or themselves? The answer to this question is that each theory contributes to understanding certain aspects of the learning process. For example, behaviorist and social learning theories emphasize external factors in the environment that promote learning, whereas cognitive, psychodynamic, and humanistic theories as well as certain features of social learning theory focus on internal psychological factors in the learning process.

In practice, psychological learning theories can be used singly or in combination to help nurses and other health professionals teach patients or themselves to acquire new information and alter behavior. As an example, patients undergoing painful procedures are first taught relaxation exercises (behaviorist) and while experiencing pain or discomfort are encouraged to employ imagery, such as thinking about a favorite, beautiful place or imagining the healthy cells gobbling up the unhealthy cells (cognitive). Staff members are highly respectful, upbeat, and emotionally supportive of each patient (humanistic) and take the time and opportunity to listen to patients discuss their fears and concerns (psychodynamic). Waiting rooms and lounge areas for patients and their families are designed to be comfortable, friendly, and pleasant to facilitate conversation and interaction, while support groups may help patients and family members learn from one another about how to cope with illness or disability and how to regulate their emotions so that their health is not further compromised (social learning).

At the same time, research indicates that some psychological learning theories are better suited to certain kinds of individuals than to others. For example, patients who are not particularly verbal may learn more effectively from behaviorist techniques, whereas curious, highly active, and self-directed persons may do better with cognitive and humanistic approaches. Moreover, some individuals learn by responding and taking action (behaviorist), whereas the route to learning for others may be through perceptions and thoughts (cognitive) or through feelings and emotions (humanistic and psychodynamic). Most people appear to benefit from demonstration and example (social learning). Also, teachers must keep in mind that some learners require external reinforcement and incentives, whereas other learners do not seem to need—and may even resent—attempts to manipulate and reinforce them.

## Motor Learning

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Because the majority of nurses teach motor skills to patients and their families on a frequent basis, it is important for them to explore theories and applications of motor learning in addition to theories of psychological learning. Wulf, Shea, and Lewthwaite (2010), for example, stress the importance of and need for motor skill training in medical education, and Oermann (2011), encourages nurse educators to pay attention to the current evidence on motor learning to help improve their teaching of motor skills to nursing students. Theories and variables of motor learning are useful when teaching

skilled movement-related activities in a variety of settings. Patients learning to walk with crutches and family members learning to assist with ostomy care can all benefit from the application of motor learning principles. The objective of this section is to summarize selected aspects of this topic that are relevant to a wide variety of teaching and learning situations involving patients and their family members. Using theory and evidence to support and guide nurses as they teach skills can help make their instruction more effective and efficient.

**Motor learning** is defined as “a set of processes associated with practice or experience leading to relatively permanent changes in the capability for movement” (Schmidt & Lee, 2005, p. 302). It differs from **motor performance**, which involves attainment of a skill but not necessarily retention of that skill (Schmidt & Wrisberg, 2004). All too often, nurses tend (erroneously) to assume that performing a skill means learning a skill. For example, a nurse may demonstrate a skill to the patient, such as changing a sterile dressing, and then ask the patient to teach back the skill. If the patient is able to do so relatively accurately, it is assumed that the skill has been learned. Yet when the patient is asked to carry out the skill two days later during a home visit, the patient may not be able to perform it well. He may struggle with the order of the steps of changing the dressing, or forget how to keep the field sterile, or not be able to manipulate the bandages. As this example suggests, performance in the moment is not always an accurate reflection of learning because it can be influenced by a number of variables, and the observed ability to carry out the skill may be only temporary. Retention, which involves demonstrating a skill over time and after a period of no practice, indicates that true learning has occurred (S. B. O’Sullivan, 2007).

### Stages of Motor Learning

Similar to Cronbach’s concept of the learning curve, Fitts and Posner’s (1967) three-stage model of motor learning is a classic approach that provides a framework for nurses to use as they organize learning strategies for patients and family members. Within the **stages of motor learning** model, the three phases of skill learning are identified as follows:

1. The cognitive stage
2. The associative stage
3. The autonomous stage

Cronbach’s theory is discussed more fully in Chapter 10.

In the first (cognitive) stage, the learner works to develop an overall understanding of the skill, basically solving the problem of what is to be done. Learners must focus and pay attention in this stage. During this stage of learning, the use of specific teaching techniques and strategies is probably the most beneficial (Nicholson, 2002). Instructional strategies for nurses during this stage include the following:

- Emphasize the purpose of the skill in a context that is relevant to the learner
- Point out similarities to other learned motor skills
- Minimize distractions
- Use clear and brief instructions
- Demonstrate ideal performance of the skill

- Break down complex movements into parts, where appropriate
- Encourage the learner to state the instructions and watch the movement
- Provide some hands-on guidance but also allow for errors in performance (Kisner & Colby, 2007; S. B. O'Sullivan, 2007)

Initially, nurses can expect the performance of the skill to have many errors. Eventually, however, learners are able to carry out reasonable approximations of the skill (S. B. O'Sullivan, 2007). Rapid improvement but variable performance characterizes this stage.

The second (associative) stage of motor learning involves more reliable performance, slower gains, and fewer errors (Schmidt & Lee, 2005). The patient or student focuses on how to do the skill. The goal in this stage is to fine-tune the skill through continued practice. During this stage, better organization is seen, and the movement becomes coordinated and more accurate (S. B. O'Sullivan, 2007). Dependence on visual cues decreases, and feedback from the movement becomes more important. In this stage, nurses can continue to provide opportunities for practice, emphasizing how the movement feels and assisting learners in finding the safest and most efficient ways to carry out the skills. Helpful instructional strategies for this stage include the following:

- Increase the difficulty of the task
- Increase the level of distraction in the environment
- Encourage learners to practice independently
- Emphasize problem solving
- Decrease guidance and feedback
- Avoid hands-on guidance (Kisner & Colby, 2007)

Patients must be encouraged to self-evaluate and self-correct their performance, and in this stage, nurses should intervene only when errors appear to be consistent (S. B. O'Sullivan, 2007).

The third and final (autonomous) stage of motor learning occurs when the performance gradually improves in speed and efficiency of the performance and requires little attention and thinking about the skill (Nicholson, 2002). An advanced level of skill is achieved, and the learner can perform different tasks at the same time and under different circumstances or in a variety of environments. In this stage, learners no longer have to think about the skill. Nurses can set up progressively more difficult activities in this stage and provide more challenging situations (Kisner & Colby, 2007).

## Motor Learning Variables

The variables of practice and feedback have widespread clinical applications for nurses. Gaining an understanding of these variables can assist nurses in optimizing their motor-skill teaching with patients.

## PRACTICE

**Practice**, the repeated performance to become proficient in a skill, is the most important factor in retaining motor skills. The amount, type, and variability of practice all affect how well a skill is acquired and retained (Schmidt & Lee, 2005). Because skill in performance

generally increases as a direct result of practice, staff and family members need to continuously reinforce the skills taught by nurses and other health professionals. This emphasis on reinforcement reflects behaviorist theory, as discussed previously in this chapter.

An important goal for learning new motor skills is that patients are able to transfer the learning to new situations or new tasks. For example, nurses often teach patients how to get in and out of the chair next to their hospital bed. The goal is that patients can transfer the learning to the new situations they face at home when they try to get in and out of their own kitchen and living room chairs. Researchers have noted that the more closely the demands in the practice environment resemble those in the usual environment, the better the transfer of learning will be (Schmidt & Lee, 2005; Winstein, 1991). For this reason, it is important to use a variety of chairs in the hospital that resemble chairs at home when teaching this task and not to limit practice to the chair next to the bed.

Variable practice conditions also appear to increase the individual's ability to generalize learning to new situations and seem to be particularly effective for children and adult females (Schmidt & Lee, 2005). For example, patients need to practice walking under as many different conditions as possible (e.g., in a busy corridor, in a narrow hallway, on different surfaces) to help them generalize the skill to the new conditions and environments they will face when they return home.

Nurses routinely give verbal and hands-on guidance to assist patients in performing tasks. Such guidance seems to be most effective at the beginning stages of teaching a task when the task is unfamiliar to learners (Schmidt & Lee, 2005). Too much guidance, however, can actually interfere with learning because it does not allow the learner to solve problems on his or her own. Therefore, it is important for nurses to resist the common urge to give continual direction and assistance to patients, especially once the learners are familiar with the task.

While physical practice is best for learning a motor skill, **mental practice** (imagining or visualizing the skill without body movement) can have positive effects on the performance of the skill (Dickstein & Deutsch, 2007). Patients who cannot carry out physical practice of motor skills as a result of fatigue, pain, or injury are often good candidates for the technique of mental practice alone. Patients who are too ill to exercise or get out of bed can gain a head start on learning, increase their self-efficacy, and decrease their anxiety by mentally practicing these activities. They can do so by reviewing the steps to getting out of bed with the nurse, and then imagining themselves carrying out those steps, one after the other. When possible, mental practice should be combined with physical practice to increase the rate and quality of skill learning.

## FEEDBACK

**Feedback** plays a critical role in learning motor tasks. Feedback can be either intrinsic or extrinsic. Intrinsic (inherent or internal) feedback is the built-in sensory and perceptual information that arises when a movement is produced and can include both visual and body motion information. Extrinsic (augmented or external) feedback is information provided to the learner from an outside source (Schmidt & Wrisberg, 2004). The outside source can be the nurse, or it can be some type of machine, such as biofeedback. Extrinsic feedback adds to intrinsic feedback. Variables to consider when giving extrinsic



feedback include the type, timing, and frequency of feedback. Certain types of feedback work better with specific types of skills. Generally, focusing a person's attention on the results of the movements helps learning more than when the person focuses on the details of the movements.

Nurses need to adjust the timing of feedback during the learning process. Continuous feedback occurring at the same time as the skill may be necessary in the early stages of teaching a skill to ensure safety and understanding; however, continuous feedback can interfere with learning over time. For example, suppose the nurse seeks to teach a patient how to give herself an injection. Initially, the nurse must show the patient how to hold the needle, often physically guiding the placement of the patient's hands on the needle. He also tells the patient step by step how to proceed with the injection, giving praise along the way when the patient is successful. If the nurse continues to give this level of extensive feedback each time the patient practices, it may actually slow down learning of the skill. For retention and longer term learning, learners need to self-detect and self-correct errors, so educators should use the least amount of feedback for the shortest time possible (Gentile, 2000). Nurses can often find that withholding feedback is challenging because many view giving large amounts of praise and encouragement as a way of positively supporting the patient. Nevertheless, feedback that is spaced out during practice promotes learning more effectively than does continuous feedback. The extensive use of any type of external feedback can create dependence on it, so nurses need to develop a comfort level that balances safety and support with allowing patients to problem solve, self-monitor, and self-correct when learning new motor skills.

Applying motor learning theories adds depth and breadth to the teaching skills of nurses. Although different areas of the brain are involved in motor learning as compared to psychological learning, there is considerable overlap. The combination and use of both sets of theories are necessary for the teaching and learning of motor skills. Certain aspects of some psychological theories—such as reinforcement from behaviorist theory, the gestalt and information-processing perspective from cognitive theory, modeling from social learning theory, and focusing on subjective needs and feelings of the learner from humanistic theory—are relevant to the teaching of motor skills.

Although a large body of complex research has been published in the area of motor learning, following several simple guidelines can help nurses be more effective when they teach motor skills to patients. Nurses should remember to do the following:

- Make sure patients understand the purpose of the skill and give clear guidance and assistance in the initial stages of learning.
- Practice motor skills with patients as much as possible and encourage other staff and family members to also practice skills with patients.
- Encourage mental practice prior to or along with motor practice.
- Vary the conditions of learning as much as possible.
- Within the limits of safety, decrease the amount of guidance and feedback to allow learners to problem solve, make mistakes, and self-correct errors.

Nurses who consistently apply knowledge of the three stages of motor learning and the variables of practice and feedback when teaching motor skills to patients, family members, and colleagues give themselves the best chances for successful teaching

outcomes. The next section discusses common principles of learning that integrates information from all the learning theories presented in this chapter.

## **Common Principles of Learning**

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Taken together, the theories discussed in this chapter indicate that learning is a more complicated process than any one theory implies. Besides the different considerations for learning suggested by each theory, the similarities among the perspectives point to some core features of learning. The issues raised at the beginning of the chapter can be addressed by considering how the learning theories might apply to patients in the healthcare setting. Readers also can think about how the theories might apply to their own needs to acquire new knowledge or change behaviors and break bad habits.

### **How Does Learning Occur?**

Learning takes place as individuals interact with their environment and incorporate new information or experiences with what they already know or have learned. Environmental factors that affect learning include the society's norms and values, the culture of the healthcare facility, and the particular structure of the learning situation. Role models need to be effective, learners may need reinforcement, feedback for correct and incorrect responses is required, and learners need opportunities to apply what they learned to different settings and new situations. However, the individual ultimately controls the learning process, often involving considerations of his or her developmental stage, past history (habits, cultural conditioning, socialization, childhood experiences, and conflicts), cognitive style, dynamics of self-regulation, conscious and unconscious motivations, personality (stage, conflicts, and self-concept), and emotions. Also, learners often have a preferred mode for taking in information (visual, motor, auditory, or symbolic). Although some individuals may learn best on their own, others benefit from expert guidance, social interaction, and cooperative learning.

A critical influence on whether learning occurs is the learner's motivational level. The learning theories reviewed here suggest that to learn, the individual must want to gain something (i.e., receive rewards and pleasure, meet goals and needs, master a new skill, confirm expectations, grow in positive ways, resolve conflicts), which in turn creates tension (i.e., drives or imbalances to be reduced) and the motivation to acquire information or change behavior. The relative success or failure of the learner's performance may affect future learning experiences. In some cases, previously learned information or habits may need to be replaced with more accurate information and more appropriate responses. It is, of course, easier to instill new learning than to correct past learning, which may include incorrect or incomplete information or bad habits. See Chapter 6 for more on motivation.

### **Which Kinds of Experiences Help or Hinder the Learning Process?**

When nurses are attempting to teach learners new information or work with them to change their attitudes and behavior, the selection of learning principles and the structure of the learning experience strongly influence the course of learning. Teaching

requires imagination, flexibility, and the ability to use a variety of educational methods. Teachers must know their material well and need good communication skills and the ability to motivate themselves and others. All the learning theories discussed in this chapter recognize the need to make learning a positive experience and the necessity of relating the new information to the learner's past experiences—their habits, culture, memories, and feelings about the self. The ultimate control over learning rests with the learner, but effective educators influence and guide the process so that learners advance in their knowledge, skills, perceptions, thoughts, emotional maturity, or behavior. Ignoring these considerations, of course, may hinder learning. Some obstacles to learning may involve a lack of clarity and meaningfulness in what is to be learned, neglect or harsh punishment, fear, and negative or ineffective role models. Providing inappropriate materials given the individual's ability, readiness to learn, or stage of life-cycle development creates another obstacle to learning. Moreover, individuals are unlikely to want to learn if they have had damaging socialization experiences, are deprived of stimulating environments, or lack goals and realistic expectations for themselves.

### **What Helps Ensure That Learning Becomes Relatively Permanent?**

Four considerations assist learning in becoming permanent. First, the likelihood of learning is enhanced by organizing the learning experience, making it meaningful and pleasurable, recognizing the role of emotions in learning, and pacing the teaching session in keeping with the learner's ability to process information. Second, practicing (mentally and physically) new knowledge or skills under varied conditions strengthens learning. The third issue concerns reinforcement: Although reinforcement may or may not be necessary, some theorists have argued that it may be helpful because it serves as a signal to the individual that learning has occurred. A fourth consideration involves trying to ensure that learning will transfer beyond the immediate healthcare setting to other environments. And finally, learning cannot be assumed to be relatively lasting or permanent; it must be assessed and evaluated by the teacher soon after the learning experience has occurred as well as through follow-up measurements made at later times. What is learned from evaluating the teaching situation can then be used to improve future learning experiences for patients.

### **Summary**

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This chapter demonstrates that learning is complex. Readers may feel overwhelmed by the different perspectives, various principles of learning, and cautions. Yet, each theory highlights an important dimension that affects the overall learning process, and together the theories provide a wealth of useful options and tools to encourage learning and to change behavior in the healthcare setting. There is, of course, no single best way to approach learning, although all the theories indicate the need to be sensitive to the unique characteristics and motivations of each learner. For additional sources of information about psychological theories of learning and health care, see **Table 3–2**.

Nurses cannot be expected to know everything about the teaching and learning process. More important, perhaps, is that they can determine what needs to be known,

**Table 3–2 Websites to Psychological Theories of Learning in Health Care**

American Psychological Association (search for learning topics): <a href="http://www.apa.org">http://www.apa.org</a>
National Institutes of Health (search for patient education topics): <a href="http://www.nih.gov">http://www.nih.gov</a>
Learning theory links (emTech.net): <a href="http://www.emtech.net/learning_theories.htm">http://www.emtech.net/learning_theories.htm</a>

where to find the necessary information, and how to help others benefit directly from a learning experience. Psychology and nursing work well together. Psychology has much to contribute to healthcare practice, and nursing is in a strategic position to apply psychological and motor learning theories in the clinical setting.

## Review Questions

1. What are the basic principles of learning for each of the five psychological learning theories discussed in this chapter?
2. What is the role of the teacher in each of the five learning theories?
3. What contributions do the gestalt, developmental, information-processing, and social cognition approaches make to understanding the learning process?
4. What are ways that teachers can motivate learners?
5. Based on the various learning theories, what techniques are useful in helping patients remember information?
6. Using the theories of learning, what approaches can help patients break bad habits, such as smoking or lack of physical exercise?
7. What are some ways that emotions might be given more consideration in nursing and patient education?
8. In motor learning, how do the instructional strategies used during the associative stage of learning differ from those used during the cognitive stage?
9. How do the different types of practice and feedback variables affect learning?

## Case Study

Suppose that the nursing unit supervisor, Mr. Locent, has asked you to set up an education class at a satellite clinic of the hospital for patients who were recently diagnosed with diabetes. Time is of the essence, and you have three 1-hour sessions planned to cover the basic information that patients need to learn for proper management of their diabetes. Mr. Locent mentioned to you that several of the patients who will be in the class are concerned about their ability to successfully manage their disease. Eileen, one of the patients, told him, "I am terrified. Learning to live with this disease is overwhelming to me. I can't imagine I will ever be able to have a normal life again. I worry that my relationships with my family and friends will suffer."

1. Describe how you will structure the educational sessions using two of the psychological learning theories discussed in this chapter. Explain why you chose each theory.
2. Judge which learning theory can best assist you in addressing the issues the patients raise about their ability to successfully manage their disease and to cope with their feelings of being overwhelmed. Why did you choose this theory?
3. What can you do to ensure that learning will become relatively permanent?

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