2

LEARNING MOTIVATION AND PERFORMANCE

The secret of education lies in respecting the pupil . . .
Ralph Waldo Emerson

CHAPTER OBJECTIVES

After reading this chapter, you should be able to:

- Explain why it is important to understand theory.

- Identify the major factors that determine human performance and their relevance to training.

- Describe the cognitive and behavioural approaches to learning and their contradictory implications for instructional practices.

- Identify a learning theory that integrates cognitive and behaviourist perspectives and describe how its processes and components relate to training.

- Describe the causes of resistance to learning.

- Explain the effect of group dynamics on learning and the transfer of training.

- Explain why different people need different training methods to learn the same things.

- Identify the characteristics of training design that motivate learning and accommodate trainee differences

CASE

The Wilderness Training Lab

Claudia, a successful 33-year-old corporate marketing executive, found herself in the mountains of Alberta preparing to climb a rope ladder attached to a tree. When she reached the top of the ladder, she would fall off backward. It wouldn't be an accident. No, she wasn't suicidal or deranged. She was participating in an executive development program called Wilderness Training Lab.

At the corporate office in Winnipeg, she was known as an independent, smart, and tenacious businesswoman. She quickly moved up the corporate ladder from Product Research Assistant to Brand Manager. Claudia had a reputation for micromanaging her subordinates and being a loner. When asked about these issues, Claudia replied, "When I was in college, I had a lot of group projects. At first I went along with group decisions and trusted others to do a good job, even though I felt anxious about putting my grade in the hands of someone else. It seemed to be a good way to get along in the group. Those projects received mediocre grades, and I'm only satisfied with being the best. Then I started to take over the leadership of every group I was in. I developed the plan, decided who would do what and what the timelines were, and always took on the most difficult and complex parts myself, all the time making sure the others were doing what they were assigned. From then on my group projects always got an 'A' I carried those lessons with me into the workplace and I've had good success here too. Maybe it rubs some people the wrong way, but it works for me. The only trouble I'm having is keeping up with all my projects. Some of the other brand managers want to work with me on joint projects, but I do not have time. Besides, they probably just want me to do their work for them or steal my ideas. The VP of Marketing will be retiring soon and only one of the seven Brand Managers will get that job. What's in it for me if I collaborate with them? Let each of us sink or swim on our own merits."

A few months ago, the VP of Marketing, Sandy Cines, discussed career plans with Claudia. Sandy had always praised and encouraged Claudia's work, but this time he was a little reserved. He suggested, in rather strong terms, that she attend a Wilderness Executive Development Program. Claudia hesitated because of her workload and upcoming deadlines. Sandy said, "Well, I'll leave the decision up to you. The Director of Training and I have looked at your strengths and what you'll need for the next level as an executive. Technically you're very strong, but more important at the next level is building good interpersonal relationships. The Training Director recommended this program for you, but, as I said, I'll leave the decision up to you."

Claudia wondered what he thought was wrong with her interpersonal relationships. She had great relationships with customers, with outside vendors, and in her personal life. Relationships with her subordinates and peers needed to be different. She needed to be firmer and less flexible with them, did she not? She did not think she had bad relationships with her subordinates or peers. They never complained to her. However, Claudia decided it was pretty clear that Sandy wanted her to attend the Wilderness program.

In Alberta, she found a diverse group of men and women executives from all over North America. Many confided that their organizations had sent them to "learn how to be more effective in groups." Most of them indicated they were interested and eager but a little nervous about what was expected of them. They soon found out. They were divided into groups of ten and taken out on the "course."

The first training exercise was climbing the "trust ladder." Doug, the Program Director, explained that the group members would have to rely on each other quite a bit during the coming week. To demonstrate that the group could be trusted, each person was to climb to the top of the ladder and fall backward into the group, who would catch the person in a proper manner. Doug showed them how. After everyone had completed the exercise, they discussed risk taking, building and trusting one's support systems, being part of a support system, and communicating one's needs. Then came more challenging exercises, such as building and using rope bridges to cross a stream, white-water rafting, and—the most physically challenging of all—scaling a four-metre wall. The front of the wall was sheer and smooth. A platform on which two people could stand at about waist level with the top of the wall, and from which extended a ladder to the ground, was on the other side.

Everyone had to scale the wall and no one could stand on the platform until he or she had scaled the wall. It was a timed event, and the groups were in competition with one another. The first thing a group had to do was develop a plan. Strong and tall people were needed to boost the others to a point where they could pull themselves over. Some stood on the platform and helped those who were not strong enough to pull themselves over. It was clear the first people over also had to be strong. Another problem was the last person over. Everyone, except the last pair, would have "spotters" in case of a fall. Also the last person would have no one left to boost him or her to the top. Someone would have to act as a human rope, hanging down from the top so the last person could climb up the person and over the wall. Therefore, the last person would have to be light but strong enough to boost the second-to-last person up and to climb over the human rope. In order to determine the order, the group members needed to share with one another their strengths and weaknesses. Claudia wanted to be the last person so she could make sure everyone was doing what they were supposed to, and also because, as the last person over the wall, she would represent the group's successful completion of this exercise. Two of the strongest men in the group confessed to having injuries that would hamper them. Claudia realized that her tennis elbow would be a great

liability. When it came to her turn to discuss her strengths and weaknesses, she was honest about her injury and indicated she would fit best somewhere in the middle where many people could help her.

When Claudia's turn to climb came, she called out to those on top what to expect—where she couldn't put much strain and how she would indicate that someone was pulling too hard. Then she was being pushed up with spotters all around her, and the next thing she knew she was over the wall.

Later, when the members discussed the event, Claudia asked what impact her limitations caused in the group. Those who had been pullers replied, "None." They said they knew what to do, because she had told them about her problem ahead of time.

While getting packed to go home, Claudia thought about how much she had learned about herself and her relationship to other people, especially at work. She recognized that she generally failed to trust others to do their part and so she was not being as effective as she could be. Her success came at a high price because of the extra workload she imposed on herself. In addition, she wondered, "What is the price my subordinates pay? How have my actions affected their attitudes and performance? Do I need to be so competitive with my peers? Is that behaviour really in my or my company's best interests?" She knew she would have a lot to think about on the trip home.

A FEW WORDS ABOUT THEORY

Theories are speculative road maps for how things work. In fact, most of us develop our own theories to explain how the world around us works. The child yells, "I want an ice cream cone." He is told, "No, not until you ask properly." After a number of such incidents, the child begins to see that when he says "please" he is more successful than when he says "Gimme" or "I want." The child develops a theory of how to get things he wants; he must always say "please." "Good" theories assemble a number of facts, show the relationship among those facts, and develop a logical rationale for what is likely to be true, given those facts. From theory, predictions or hypotheses can be generated and tested. If the tests show the predictions are correct, the theory is supported. If the new facts are inconsistent with the predictions, the theory is revised or discarded. Suppose the child in the previous situation takes his theory to the extreme. When he says "please" but is denied his request, he continues to badger the person, saying "pleeeease, pleeease." If he soon finds this approach does not work, he may revise the theory. The new theory says "please" works more often than not, but if you have to say it over and over, it does not work. In fact, it makes the person annoyed. This process of developing, testing, and reformulating a theory is the basis of science. It is how new knowledge is created. A good theory is also practical because it

- explains facts as simply as possible,
- predicts future events, and
- provides information on what can be done to prevent undesirable things from happening.

Theories are abstractions that allow us to make sense out of a large number of facts related to an issue. Effective training practices are developed from theories and theoretical constructs that describe how learning occurs and what motivates people. This chapter is about theory and so it is necessarily somewhat abstract. Unfortunately, some people may see little value in wading through the complex logic and rationale of theories. It is easier to follow a set of instructions like a recipe. But, in training, as in business, a single recipe will not work. Recipes require standardized ingredients—businesses do not have standardized ingredients. Each organization is unique, with different missions, strategies, environments, technologies, and people.

Theories

The interaction of these elements creates a different "chemistry" in each organization, thus making a "one best way for everyone" approach ineffective. Theories provide the guidelines, principles, and predictions that allow organizations to create the right recipe for their situation. Successful people in business pay attention to theory.

Firms in all industries from manufacturing to telecommunications, from energy production to health care (e.g., Ford, 3M, Microsoft, Motorola, Toshiba, Toyota, and Xerox), jumped ahead of the competition because they understood and applied theories. Some of these theories concern the product, others concern how the product is made, and still others how the firm is managed. Rather than copying others, these companies understood the underlying theories related to what they were trying to do and applied those theories to meeting their goals. As the quality guru W. E. Deming indicates, experience teaches nothing without theory.[1] He warns that unless you understand the theory behind someone's success, copying can lead to chaos.[2] A survey of *Fortune* 1000 companies engaged in programs to improve quality (e.g., total quality management ISO 9000) and involve employees in decision-making support this view. The companies that applied the underlying models and theories correctly were getting the best results; those that simply put programs into place were getting the worst results.[3]

Consider pay systems. Suppose a company pays its employees on the basis of how much they produce (i.e., a piece-rate system). The company is successful and the employees make a high wage. You decide to institute the piece-rate system in your company. Will it work? It might, but it might not. Its success will depend on the total reward system, what the company is trying to accomplish, and what the employees value. For example, employees may turn out a high volume of the product but at the cost of many problems with quality. They may produce more than can be sold. Piece-rate systems can create a "norm" in the work group that prohibits them from producing more than a specified amount (to avoid increases in the product/money ratio or to protect slower workers). In other words, the differences in the people and work environments affect the success of the piece-rate system.

An understanding of motivational theory allows a manager to improve employee performance levels by applying the principles of motivation to his firm's unique circumstances. The same is true with training. Whether one company's training program will work in another's, will depend on the needs of the latter company, its employees, and the training system used. Copying without understanding is like taking someone else's prescription drugs. Even though they may have made someone else better, they could kill you.

What theories are important to the success of the training enterprise? If trainees do not learn, then training has failed. Theories of learning are certainly important. If trainees learn but do not try to transfer the learning to the job, then training has failed. Add theories of motivation to the list. If the trainees learn and try to transfer the learning to the job site, but obstacles in their work environment prevent them from making the transfer, then training again has failed. It failed because the changes in the work environment that needed to support the desired behaviour were not considered. Thus, in order to design and implement effective training programs, you need to understand how people learn, what motivates learning and performance, and how the learning and work environment affect motivation and performance. This chapter focuses on these topics. The theories, models, and concepts discussed here serve as a foundation for the rest of the book. We will refer to these theories and their implications for training throughout the text because they are related to each phase of the training process.

UNDERSTANDING MOTIVATION AND PERFORMANCE

Your job performance and your behaviour in general are a function of what you know, what you are able to do, and what you believe (KSAs). If you do not have the KSAs, you cannot perform. However, additional factors are important in determining your performance. Figure 2-1 depicts a general **performance model**. This model indicates that a person's performance (P) depends on the interaction of motivation (M), KSAs, and environment (E). Motivation arises from your needs and beliefs about how best to satisfy those needs. Both motivation and KSAs are part of your memory and thinking systems (i.e., cognitive structure). **Environment** refers to the physical surroundings in which performance must occur, including barriers and aids to performance as well as objects and events (cues) that you might see as indicating that your performance will be rewarded or punished.

Think back to the Wilderness Training case. Which of Claudia's KSAs allowed her to reach her current position? Her boss felt she lacked the interpersonal skills necessary for developing good relationships. Did she lack these skills or was she not motivated to use them? Apparently she had the skills since she was able to develop good relationships with others with whom she was not working directly. The Training Director probably understood this fact, because he suggested the Wilderness Training rather than an interpersonal skill-building workshop. The Wilderness Training did not teach people how to develop good interpersonal relationships as much as it broke down barriers that prevented those relationships from developing. The program worked on the motivation and attitudes of the trainees. What barriers in Claudia's work environment might keep her from developing these relationships? How about the upcoming retirement of the VP and that open position? What criteria could be used in evaluating managers that would encourage them to develop positive relationships with peers and subordinates?

Each of the factors M, KSA, and E in Figure 2-1 can influence performance, but the combination of these factors determines the person's performance. The weakest factor, then, limits the likelihood of engaging in any activity. For instance, no matter how knowledgeable or skilled you are, if you are not motivated to perform the activity—or worse, are motivated to not perform it—then you will not. If the environment does not support the activity or blocks it, then it does not matter how

Performance Model a depiction of the inputs that need to be considered in determining performance levels.

Environment the physical surroundings in which performance must occur, including barriers and aids to performance as well as objects and events (cues) that you might see as indicating that your performance will be rewarded or punished.

FIGURE 2-1 Factors Determining Human Performance

PERFORMANCE (P)

MOTIVATION (M) KNOWLEDGE, SKILLS, AND ATTITUDES (KSA) ENVIRONMENT (E)

$$P = M \times KSA \times E$$
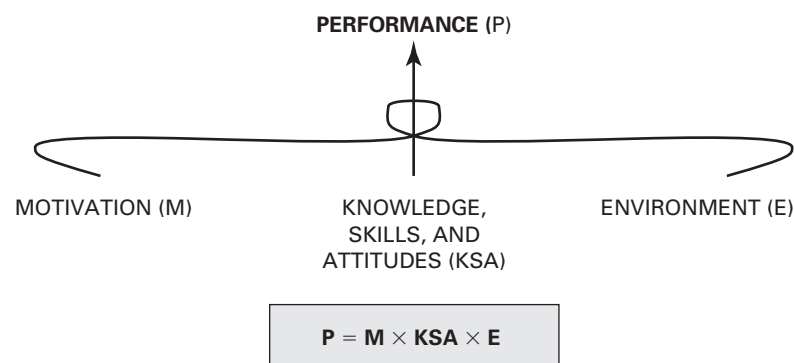
motivated or knowledgeable you are—you will not do it. For example, if necessary tools are not working or equipment is missing, you won't attempt the activity. Likewise, if the environment is sending signals that your performance will be punished, you won't perform. In Claudia's case, she seemed to want to stay at work and not attend the training. However, her boss gave strong indications that staying would be viewed negatively. Her environment changed, signalling that old ways of performing would not be rewarded and new ways would.

This model in Figure 2-1 is important for determining employee training needs. It helps us understand whether poor job performance is a result of KSAs or other factors. It is also important in the design of training. When putting together the learning modules and training methods, the trainer must consider how they will affect the trainees' motivation to learn. Similarly, when selecting the training facility and materials, we must consider how they will interact with trainee motivation. When we ask trainees to use their new knowledge and skills back on the job, we must make sure the environment is supportive of this new way of performing. A deeper understanding of the three determinants of performance will increase your ability to design and implement effective training programs. First, we look at motivation, presenting the most prominent theories and clarifying their relationship to the training enterprise.

MOTIVATION: WHY DO THEY ACT LIKE THAT?

Motivation is part of a person's cognitive structure and is not directly observable. Thus, it is typically defined in terms of its effects on behaviour, which are observable. Most of the scientific literature defines **motivation** as the direction, persistence, and amount of effort expended by an individual to achieve a specified outcome. In other words, the following factors reflect a person's motivation:

Motivation the direction, persistence, and amount of effort expended by an individual to achieve a specified outcome.

- What need(s) the person is trying to satisfy,

- What types of activity the person engages in to satisfy the need,

- How long the person engages in the activity, and

- How hard the person works at it.

Go back to Claudia's situation. What need is she is trying to satisfy: the growth need or the need to achieve and get ahead in the company? To answer this, look at the types of activities she is involved in. She takes on extra projects, volunteers to work on task forces, works late, and so forth. How long has she been doing it? For about two years. How hard does she work at it? Well, it seems pretty hard: She works 12-hour days and often goes in on Saturday.

Motivation is goal-directed and derived both from people's personal needs and from the decision processes used to satisfy those needs. Separate theories evolved to explain the relationship between needs and motivation, and between decision processes and motivation. Needs theories attempt to describe the types of needs people have, their relative importance, and how they are related to each other. Process theories attempt to describe and explain how a person's needs are translated into actions to satisfy the needs.

Needs Theory theories of motivation that explain the various types of human needs that are motivating.

ERG Theory a need theory of motivation taken from the work of Maslow describing three types of need: existence, relatedness, and growth.

Existence Needs physiological and security needs.

Needs Theory Our needs are the basis of our motivation and the reason for almost all of our activity. Understanding a person's needs helps you to understand his behaviour. From Maslow's early work,[4] Clayton Alderfrer developed a **needs theory** of motivation called **ERG theory**.[5] ERG is an initialism representing the three basic needs of the theory: existence, relatedness, and growth. **Existence needs** correspond to

Maslow's lower-order physiological and security needs. They are the immediate needs required to sustain life—needs for food, shelter, and the like—as well as the need for some security in the future for a safe and healthy life. **Relatedness needs** reflect people's need to be valued and accepted by others. Interpersonal relationships and group membership (work, family, friends, etc.) act to satisfy these needs. **Growth needs** include feelings of self-worth and competency and achieving our potential. Recognition, accomplishment, challenging opportunities, and a feeling of fulfillment are outcomes that can satisfy these needs. Even though some disagreement exists in the scientific community about the relationships among these needs and their relative importance at any given point in life, few dispute the idea that these needs exist for everyone.

People work to satisfy their needs. Understanding the types and strengths of employee needs is important to the training process. It can help to identify some of the causes of poor performance and therefore determine training needs. Consider the employee who has strong relatedness needs but whose job is structured so that he must work alone most of the time. He may not be getting the required quality and quantity of work completed because he spends too much time socializing with others in the workplace. Additional technical KSAs will do little to improve his job performance. Performance improvement would more likely result from some other type of training (perhaps time management) or some non-training intervention (such as job redesign or counselling).

Understanding needs is also important in designing training programs and facilities. Trainers need to make sure that the environment and training methods—that is, how the training is conducted and where it takes place—meet the trainee's physical, relationship, and growth needs. We discuss these issues in depth in the chapters covering training design, development, and implementation. Think back to the Wilderness Training case to get a sense of how training methods, materials, and environment influence trainee motivation.

Although motivated to attend the training because of her boss's pressure, was Claudia motivated to learn when she first arrived, or was she skeptical about the value of the training? What if she had attended a series of lectures on the importance of developing strong interpersonal relationships instead of the outdoor group experiences? Would she have been as motivated to absorb the lessons and apply them to her work? How strong do you think Claudia's relatedness needs were? How effective would training be that focused on showing her how changing her behaviour would result in increased acceptance by her peers? It seems apparent that Claudia did have high growth needs. The outdoor training presented her with a series of physical and psychological challenges, fitting in with her growth needs and motivating her to become an involved participant in the training.

The few empirical studies conducted on this topic tend to support Alderfer's notion that people can experience needs in all three areas simultaneously.[6] The relative satisfaction level in each area determines the importance of the needs. Unsatisfied needs motivate us, and motivation decreases as needs in an area are satisfied. However, needs in these three basic areas tend to renew themselves; they can also expand. Although you may have a good job that provides you with food, shelter, and security, you may start to feel the need for better food, a larger and more comfortable home, a larger savings account, or an investment portfolio. Similarly, even though your relationships with family, friends, and co-workers may at first satisfy your relatedness needs, you may begin to feel that you would like the relationships to be better or closer, or that you want to develop additional relationships.

Sometimes our needs may conflict with one another, or one type of need may become more important than the others. Then we feel we must choose one over the

Relatedness Needs need to be valued and accepted by others.

Growth Needs feelings of self-worth and competency and achieving our potential.

Website about ERG theory *http://changingminds.org/ explanations/theories/ erg_theory.htm*

other, which is what happened with Claudia. We cannot be sure how strong her relatedness needs are, but we do know that she saw them as conflicting with her ability to satisfy her growth needs at work. The Wilderness Training was designed to satisfy the trainees' needs for growth and relationships at the same time. Step by step, the training demonstrated how building strong interpersonal relationships could not only satisfy relationship needs but also make greater accomplishment possible.

This example illustrates a central point about motivating trainees to learn. The best training incorporates opportunities to satisfy all three categories of needs. The training facility and accommodations address, in part, existence needs. How much trainees learn is also dependent on the trainees' physical comfort, level of hunger, and so on. Demonstrating how the training will improve the trainee's competencies, and in turn increase job security and fulfill existence needs, will motivate the trainee. Building a network of positive relationships among trainees and between trainees and the trainer will address relatedness needs. Using methods that provide challenging experiences that lead to the attainment of the target KSAs will address growth needs. By having training address all levels of needs in some way, you can be assured that all trainees will find at least one need that requires satisfying. This will go a long way toward motivating all trainees because you offer something for everyone.

Needs theory leads to implications for the training process even after completion of the training. Trainers must make sure trainees are able to see how learning fulfills their needs. In Claudia's case, her boss provided some of that linkage when he told her how important relationship building is to her current and future job success (i.e., security needs). What could the trainers at the Wilderness Training Lab do to create these links? We discuss this issue more in the next section, since these links are the focus of the process theories.

Process Theories

Needs are only part of the motivation equation. Deciding how to go about satisfying those needs is the other part. **Process theories** of motivation describe how a person's needs translate into action. Although many types of process theories exist, we will focus on the three with the most direct implications for training: classical conditioning, reinforcement theory, and expectancy theory.

Classical conditioning is the association of a generalized response to some signal in the environment. It typically involves learning to emit a non-voluntary response to some signal that in the past did not produce that response. For example, when an optometrist examines your eyes, she may put you in front of a machine that blows a puff of air into your eye. This puff of air causes you to blink your eye. If a red light came on just before the puff of air, you would probably learn to associate the puff of air with the red light and begin blinking whenever the red light comes on. At that point, you learned to blink (generalized response) in response to the red light (signal).

The most widely known example of this type of learning involves Pavlov's dogs.[7] Pavlov was not studying learning; he was examining the physiology of digestion by measuring the amount of salivation produced by various substances placed on the tongues of dogs. As the story goes, Pavlov observed that the dogs began to salivate upon his entering the lab, thus playing havoc with his desire to determine the amount of saliva produced by various substances. He speculated that over time his entrance was followed so often with substances placed on the dogs' tongues that the dogs learned to salivate on his entrance.

Table 2-1 shows how the classical conditioning process works. Step 1 reflects the state of affairs before conditioning takes place. Certain factors in the environment (unconditioned stimuli) produce automatic responses (unconditioned responses) in animals and people. If we place an unconditioned stimulus such as meat powder on a dog's tongue, an unconditioned response would be the dog's salivation. That is, the

TABLE 2-1   Classical Conditioning Process

STEP 1 Unconditioned Stimulus (Meat powder)	⟶	**Unconditioned Response** (Salivation)
STEP 2 Conditioned Stimulus paired with Unconditioned Stimulus (Buzzer followed closely in time, over many trials, by meat powder)	⟶	**Unconditioned Response** (Salivation)
STEP 3 Conditioned Stimulus (Buzzer alone)	⟶	**Conditioned Response** (Salivation)

dog need not be trained (conditioned) to salivate when meat powder is put on its tongue. However, this salivation response does not occur with every stimulus that might be in the dog's environment, such as a buzzer. If, however, you sounded that buzzer just before putting meat powder on the dog's tongue, over a number of trials the buzzer would become a conditioned stimulus. The dog is learning (being conditioned) to associate the buzzer with the meat powder. However, you are still putting meat powder on the dog's tongue, so the salivation is really a response to the meat powder and remains an unconditioned response. This situation is reflected in step 2 of Table 2-1. In step 3, you stop putting meat powder on the dog's tongue after sounding the buzzer. If the dog salivates at the buzzer, you have created a conditioned response (salivation) to a conditioned stimulus (the buzzer). Continually sounding the buzzer without offering the meat powder will extinguish (remove) this response. Over time, the conditioned response gradually disappears. Through conditioning, a response to one stimulus can be transferred to another, unrelated stimulus.

Classical conditioning occurs frequently in the workplace, though it typically receives little attention. The noon whistle blows at the factory and the worker's digestive juices begin to flow. Sparks fly from the welding machine and your eyes blink, even though you are wearing goggles. As you will see later, this type of learning can have an impact on the learning environment.

Reinforcement theory. **Reinforcement theory** is relatively simple on the surface but can be difficult to apply. It does not provide all the answers for how needs are translated into action; but its major points are essential for understanding human behaviour. The foundation for reinforcement theory comes from the work of E. L. Thorndike.[8] Thorndike's **law of effect** states that behaviour followed by satisfying experiences tends to be repeated, and behaviour followed by annoyance or dissatisfaction tends to be avoided. B. F. Skinner used this principle in developing the operant conditioning model and reinforcement theory.[9]
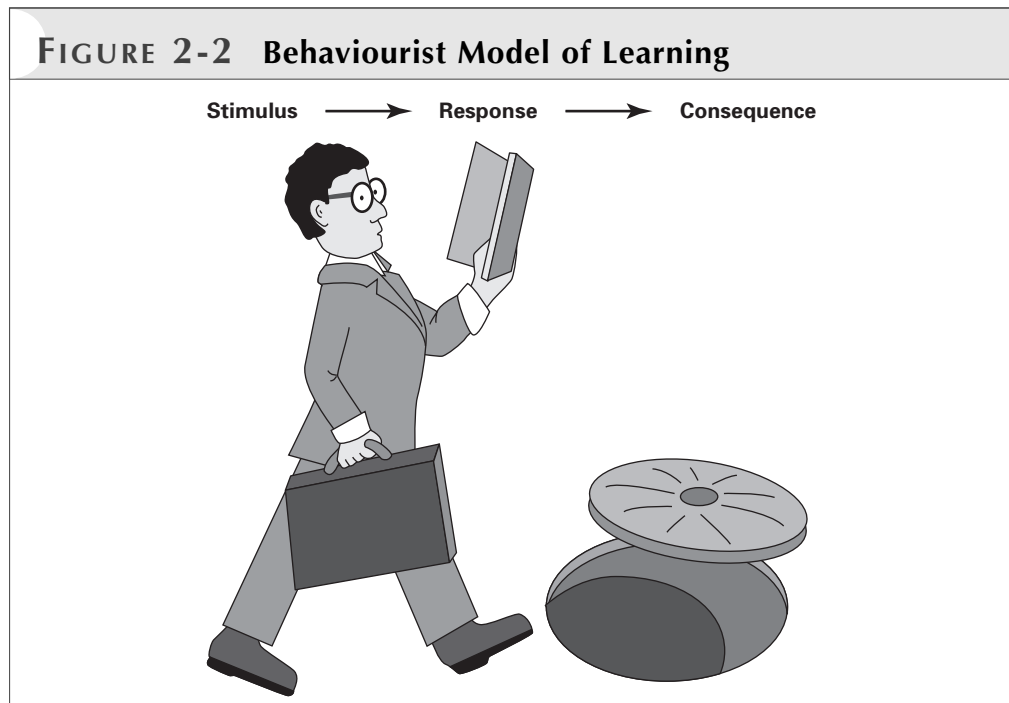
The basic components of learning in **operant conditioning** are illustrated in Figure 2-2. A person is faced with an object or event in the environment (stimulus) and behaves in a certain way (response). That behaviour results in an outcome (consequence) to the individual that is positive or negative. In the illustration, the man has seen a book of great interest (environmental stimulus) while on the way to work. He purchases the book and reads it (response) while continuing to walk to work. You can imagine the consequence. The environment provides stimuli that elicit behaviours and consequences that reinforce or punish them.

In similar situations, the consequences of past behaviour affect future behaviour. How will the man in Figure 2-2 respond to books while walking in the near future? Operant learning theory says the man will learn to avoid reading and walking. A person's motivation (i.e., direction, magnitude, and persistence of behaviour), then, is a

Reinforcement Theory

Law of Effect behaviour followed by satisfying experiences tends to be repeated, and behaviour followed by annoyance or dissatisfaction tends to be avoided.

Operant Conditioning a type of learning where specific types of behaviour are reinforced.

FIGURE 2-2   Behaviourist Model of Learning

Stimulus ⟶ **Response** ⟶ **Consequence**

Positive Reinforcement behaviour that results in something desirable happening to you—it can be tangible, psychological, or some combination of the two.

Negative Reinforcement behaviour that results in removing something you find annoying, frustrating, or unpleasant.

Punishment behaviour that results in something undesirable happening to you—it can be tangible or psychological or both and can come from the environment or be self-administered.

function of her reinforcement history. Unfortunately, reinforcement theory provides no explanation of the processes involved in storing, retrieving, or using the lessons of past reinforcement. The model leaves us wondering how future behaviour becomes influenced by previous reinforcement history. Nevertheless, the theory does convincingly predict the various effects on future behaviour caused by the consequences of past behaviour.

Skinner identified four types of consequences that can result from behaviour:

1. Positive reinforcement,
2. Negative reinforcement,
3. Punishment, and
4. Extinction.

When behaviour results in either positive or negative reinforcement, the likelihood is increased that the behaviour will occur in future similar circumstances. **Positive reinforcement** occurs when your behaviour results in something desirable happening to you—either tangible (such as receiving money), psychological (such as feeling pleasure), or some combination of the two. **Negative reinforcement** occurs when your behaviour results in removing something you find annoying, frustrating, or unpleasant. This "good" outcome increases your likelihood of repeating the behaviour. For example, if, when you have a headache, you take an Aspirin and the headache goes away, the "Aspirin-taking response" is negatively reinforced. Nothing is inherently desirable about taking the Aspirin; its reinforcing power comes from its ability to remove the pain. The environment or the person can provide both positive and negative reinforcement. For example, a person receives pay for his work. The environment provides the positive reinforcement (pay). When a person feels a sense of pride and accomplishment after completing a task, the person is positively reinforcing himself.

Your behaviour is punished when it results in something undesirable happening to you. **Punishment** decreases the likelihood of the response occurring in the

future. Like reinforcement, punishment can be tangible, psychological, or both and can come from the environment or be self-administered. In Figure 2-2, the environment provides the punishment. However, when we do things that violate our personal values and beliefs and therefore experience negative feelings, we are self-punishing that behaviour. Punishment exists when you receive something unpleasant or when you lose something desirable. The latter form of punishment is called **extinction**. For example, you may buy books by a certain author because of the positive feelings you experience as you read them. However, while reading the last two books by this author, you did not experience those positive feelings. Therefore you stop buying this author's books. When the person's behaviour (like buying and reading the books) no longer produces the desired outcomes, the behaviour is less likely to occur in the future. Figure 2-3 depicts the various types of behavioural consequences.

Extinction

A few examples here should clear up any misunderstandings or confusion created by these definitions. First, think back to the Wilderness Training Lab case. What kind of reinforcement history did Claudia experience from working in groups? Her first group experiences in college resulted in the negative outcomes (for her) of mediocre grades. Since her cooperative behaviour in groups was punished, she stopped it. When she changed her behaviour to become more directive, monitoring and doing more of the important work, two consequences resulted: (1) she was positively reinforced by good grades; (2) she avoided the negative feelings of anxiety about having other group members not do their assignments well and the resulting mediocre grades. Her new group behaviour was both positively and negatively reinforced over a number of years. It is no wonder, then, that she continued to work in groups this way. Is it possible Claudia avoided working in groups with her peers because she couldn't control those groups in the same way she could her subordinates? The training she received provided her with new group situations in which she was positively reinforced (e.g., recognition, accomplishment) for using a new set of group behaviours.

In another example, after working for a few hours, Jon, a machinist, suddenly hears a loud unpleasant screeching noise coming from the exhaust fans near his work area. He finds the electrical switch and turns the fans off; he later switches them on

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FIGURE 2-3   Types of Consequences That May Follow Behaviour

	Desirable Consequences	Undesirable Consequences
Trainee Receives	Behaviour Positively Rainforced	Behaviour punished
Trainee Loses	Behaviour Punished (Extinction)	Behaviour Negatively Reinforced

again, and they work for the rest of the day. The same thing happens the next two days. The fourth day, when he takes his break he shuts the fans off before the noise begins. When he returns from his break, he turns them on and they operate normally for the rest of the day. This behaviour becomes a daily habit with Jon. What Jon does not know is that plant maintenance repaired the fan the evening before he began his "shutting it off at the break" behaviour. Jon maintained his behaviour because it was negatively reinforcing. By "giving the fans a rest," he avoided the loud, unpleasant noise. As this worked every time, it was self-reinforcing. This is how superstitious behaviours develop.

Reinforcement Versus Punishment. Punishment can eliminate undesirable behaviour in the workplace. However, several problems make it undesirable as a management or training tool.

- It does not motivate people to do things, only not to do things. It does not indicate what the desired behaviour is, only what is not desired.

- If the undesired behaviour is punished only sometimes, people will learn the situations in which they can get away with it. The saying, "While the cat's away, the mice will play," neatly captures one problem with this technique; punishment requires constant vigilance on the part of a supervisor and encourages employee efforts to "beat the system."

- If a person's undesired behaviour is rewarding, the punishment must be severe enough to offset the behaviour's reinforcing properties. Escalating negative outcomes to employees raises ethical, moral, and commonsense objections.

- Someone must do the punishing. This person becomes someone to be avoided. Supervisors avoided by subordinates experience leadership problems.

Positive and negative reinforcement are better tools for motivating and especially for training employees. Negative reinforcement can cause the desired behaviour to become self-reinforcing, like Jon's turning off the fans. When the person continually performs the desired behaviour (avoiding the undesired behaviour), negative outcomes are avoided. If the desired behaviour is then also positively reinforced, the person not only avoids the negative outcome but also receives a positive outcome. As with Claudia in the opening case, the result is a strong maintenance of the behaviour.

With reinforcement, the person doing the reinforcing does not always need to be present for the desired behaviour to occur. The employee actively seeks to make the reinforcing agent (e.g., supervisor or trainer) aware of her behaviour. When punishment is used as the motivational or learning mechanism, the employee attempts to hide behaviour so as to avoid the consequences. Obviously, a trainer or supervisor's job is much easier when employees are attempting to communicate what they are doing rather than hiding it.

Thus, either positive or negative reinforcement is preferred over punishment as a strategy for motivating learning and behaviour change. Used in combination, positive and negative reinforcement appear more effective than either used alone.[10] For those interested in finding out more about how to implement positive, humanistic, and effective work environments, we would encourage you to read Dick Grote's *Discipline Without Punishment*.[11]

Reinforcement theory suggests that any training must be concerned not only with teaching the KSAs but also the consequences that are attached to the following:

- the learning process,
- the old way of doing the job, and
- the new way of doing the job.

These factors play a key role in determining how much is learned and how much is actually used back on the job.

As noted earlier, many unanswered questions arise when using reinforcement theory to describe the motivational process. Expectancy theory, however, provides some additional explanation and leads to many more implications for training.

Expectancy Theory. In 1964 Victor Vroom published a theory of work motivation called **expectancy theory**.[12] This theory describes the cognitive processes involved in deciding the best course of action for achieving our goals (i.e., satisfying our needs). A **cognitive process** is a mental activity such as information storage, retrieval, or use. Thinking and decision-making are cognitive processes. In its most basic form, expectancy theory proposes that a person's motivation can be explained by the relationship among three conceptually distinct elements:

1. The level of success expected by the individual (e.g., how well she will be able to do what she set out to do), which is termed Expectancy 1,

2. The individual's beliefs about what the outcomes will be if she is successful. The expected outcomes and their likelihood of occurrence make up Expectancy 2, and

3. The individual's feelings about the various outcomes' positive or negative value. An outcome's subjective value is referred to as its **valence**.

In combination, these elements determine the individual's motivation (i.e., effort) to engage in a particular course of action. When situations allow different courses of action, as most do, the one with the highest motivation level is chosen. The motivation level for a particular course of action can be calculated mathematically with the following formula:

$$\text{Effort} = \text{Expectancy } 1_i \times \Sigma_{ij} (\text{Expectancy } 2_{ij} \times \text{Valence}_{ij})$$

Although this formula is useful for those conducting research on motivation, it is not particularly useful in the day-to-day activities of most people. It does, however, present some important implications for training and learning, which we discuss shortly.
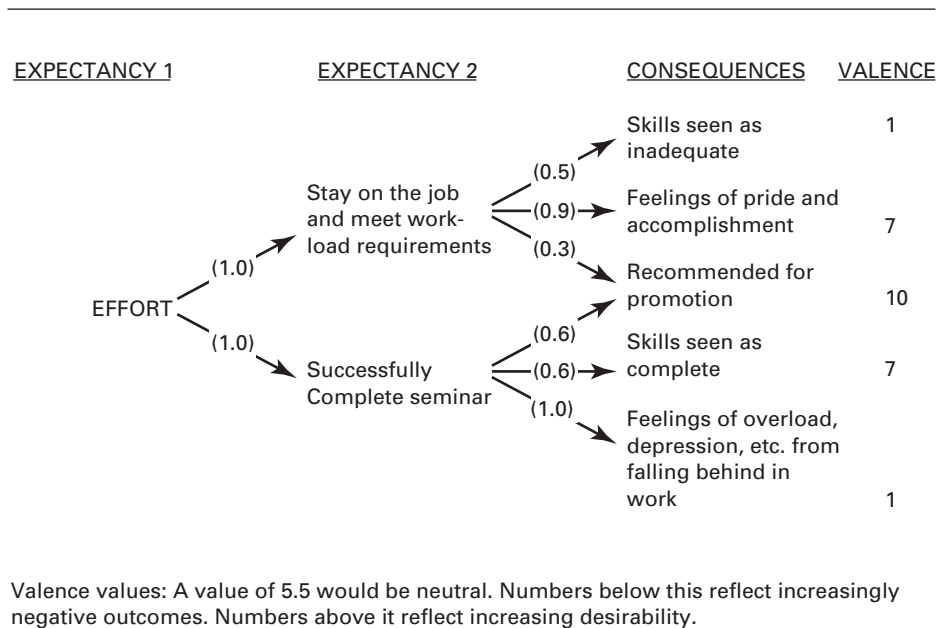
To gain a better understanding of the expectancy theory framework, let's go back to Claudia at the point at which she was trying to decide whether to attend the executive development seminar as suggested by her boss. Today is the last day she can register for the seminar that starts in two weeks. She postponed the decision as long as possible and now must decide. She feels confident about her ability to complete this training successfully, but she holds some doubts about whether it will teach her anything useful about running her marketing operation or working more effectively in a group. She knows that during her week of training, the marketing strategies for five important accounts will arrive on her desk and she will need to review and finalize them before forwarding them to top management. They are due on the Wednesday following training. In addition, her normal work will continue to pile up. Claudia faces the choice between incompatible performance goals and courses of action. Her cognitive processes, in expectancy theory terms, are illustrated in Figure 2-4.

Examining Claudia's situation in terms of expectancy theory, we see that her expectations of success (Expectancy 1) are high for both behaviours. The expectancy of 1.0 means she is 100 percent sure that she would successfully be able to complete either course of action. The Expectancy 2 links reflect the outcomes that Claudia anticipates if she successfully completes the seminar or stays at the office and completes her workload. If she turns down the training and stays on the job, she believes there is a 50 percent chance her boss will see her skills as inadequate. It would be higher, but she believes if she can do a superior job on these strategies, he will not think those relationship skills are so important. She believes it's 90 percent likely she

Expectancy Theory theory of motivation that uses cognitive processes as a means of determining the best course of action for achieving our goals.

Cognitive Process a mental activity such as information storage, retrieval, or use. Thinking and decision-making are cognitive processes.

Valence

FIGURE 2-4 Illustration of Expectancy Theory

Valence values: A value of 5.5 would be neutral. Numbers below this reflect increasingly negative outcomes. Numbers above it reflect increasing desirability.

will have feelings of pride and accomplishment for getting all her work completed on time. However, if she turns down the training, she believes there is only a 30 percent chance her boss will recommend her for promotion.

Conversely, if she goes to the training, she believes the likelihood is 60 percent that her boss will evaluate her as having a more complete set of managerial skills. However, she will fall behind in her work, and it is a certainty (1.0) she will feel harried, overloaded, and depressed. Yet she sees the chances of being recommended for a promotion increasing to 60 percent if she goes to training. As the valences in Figure 2-4 show, she values her boss's recommendation for promotion the most. She views having her boss evaluate her skills as being inadequate and the feelings associated with being behind in her work as the least desirable of the outcomes. Use the formula to calculate Claudia's motivation. By multiplying each Expectancy 2 by its respective outcome valence, summing the values, and then multiplying the total by the Expectancy 1, we arrive at a force of 9.8 for non-attendance at the seminar.

Using the same procedure for the alternative goal—attending the seminar—we find a force of 11.2. Thus, for Claudia the motivation to stay at work is less than the motivation to attend the seminar. Even though the actual values of expectancies and valences are interesting from a scientific perspective, from a practical standpoint it is the relationships among the elements of the model that are useful. This example illustrates the cognitive processes that link a person's goals, possible courses of action, and likely outcomes. These connections determine the person's motivation and are what is missing from the reinforcement theory. Of course, we simplified the situation considerably from what Claudia would actually face in the real work setting. She had

many other alternatives. She could delegate someone to cover most of the normal work coming across her desk (though she was not especially comfortable with delegating). She could arrange for the marketing strategies to be sent to her in Alberta in order to work on them at night, after training, and on the weekend. Each of these alternatives would present its own expected outcomes and associated valences.

Faced with the situation Claudia faced, what would you do? It is unlikely that you would place the same value (valence) on the outcomes or give them the same likelihood of occurring. You might identify more or fewer outcomes. One of the things that makes this theory so useful is that it takes into account the fact that people view the world differently and are motivated by different things.

Few people would consciously go through the formal math or mapping of expectancy theory, but it is interesting to note that most training programs that teach decision-making use a model similar to this one. More typically, we go through these processes unconsciously and in a less-systematic fashion. We choose a particular way of behaving because of our expectations about the costs and benefits of that action. Relationships between our past behaviour and its consequences are combined with current information to make inferences about the consequences of our future behaviour. Some implications for training become rather obvious here.

First, to be willing to try, a person must believe he or she stands a reasonable chance of being successful. Expectancy 1 exerts the most influence on our behaviour because we do not waste our time trying to do things we believe we cannot do. Sometimes this belief makes people reluctant to go to training, so trainers must demonstrate that success is likely for the participants. Second, and related to needs and reinforcement theory, trainers must make sure the right outcomes are attached to the successful completion of training. Trainees should be able to see clear connections between the content of training and important organizational and personal outcomes. Third, the training outcomes must be made as desirable as possible for the trainees rather than just for the organization, the supervisor, or the trainer.

SELF-EFFICACY AND MOTIVATION

Feelings about our own competency are reflected in the concept of **self-efficacy**, which is one of the better-researched constructs related to motivation. High self-efficacy is associated with a belief that we can and will perform successfully. Individuals with low self-efficacy are preoccupied with concerns about failure.[13] Research supports the belief that the higher the self-efficacy, the better the performance.[14] Not only is performance better, but in difficult situations those with high self-efficacy also try harder, while those with low self-efficacy tend to reduce effort or give up.[15] In a training context, research shows that those with high self-efficacy beliefs are more motivated to learn and are more likely to transfer that learning.[16]

Self-Efficacy a belief about our ability to perform successfully.

Several factors combine to provide employees with an estimate of their ability to be successful:

- *Prior experience*: The person's past successes and failures and their consequences,

- *Behavioural models*: Successes and failures of others observed attempting the behaviour,

- *Others' feedback*: The encouragement or discouragement provided by others, and

- *Physical and emotional state*: The physical or emotional limitations believed to affect ability to perform.

Self-efficacy, therefore, plays a large role in the person's Expectancy 1 evaluation. The employee's feelings of self-efficacy are translated into behaviour. If success is expected, the employee works harder, longer, and more creatively in anticipation of the positive consequences of a successful effort. If failure is expected, the employee acts to minimize the negative consequences of failure. For example, withdrawing from the activity (refusing to try) moves the person away from proven failure to simply "I did not try." It also allows the person to say, "At least I did not put a lot of energy into it," or make some other rationalization. The point is that the employee's self-efficacy sets up the person's behaviour to fulfill the self-efficacy beliefs. In expectancy theory terms, if I do not believe I can successfully do something, I won't exert the effort to do it; instead, I'll do something else.

What can be done specifically to improve an individual's self-efficacy? The supervisor can provide the employee with confidence through persuasion. Convincing her that she is quite capable of succeeding in the training will help. Also, seeing others who are similar to the employee succeed will improve the employee's self-efficacy.

Training can improve self-efficacy either directly or indirectly as a by-product.[17] If the employee experiences low self-efficacy regarding his or her abilities to perform the job, but evidence indicates he or she possesses the requisite KSAs, a program of improving self-concept and confidence is needed. When low self-efficacy results from a true lack of required KSAs, attaining competency in these KSAs should increase the employee's self-efficacy, if the training allows the trainee to demonstrate mastery on a continuous basis. Trainers can also emphasize what the objectives are as well as the success of similar sets of trainees in the past.

Self-efficacy is very powerful in terms of facilitating trainee success. It seems to be a good predictor of both learning in the training environment and transfer of the behaviour to the job.[18] So, determining a trainee's self-efficacy before training and, if low, providing means to improve the trainee's self-efficacy would seem to be a worthwhile endeavour.

UNDERSTANDING LEARNING

Information on creativity and learning in non-profit settings
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Theories of learning are important in the development of training. We examine the essential elements of learning theories and identify their relationship to training. Specific applications of the theories are provided in subsequent chapters.

WHAT IS LEARNING?

To understand the differences among learning theories, it helps to understand the difficulties of simply defining the concept of learning. Learning is not directly observable, but it is something that almost everyone says they experience. People can "feel" that they learned. It is clear from physiological evidence that learning is related to changes in the physical, neuronal structure of the brain and its related electrochemical functioning.[19] However, how or why these electrochemical changes take place is still unknown. Learning is closely tied to memory; whatever is learned must be retained if it is to be useful. Electrochemical changes created during learning apparently create a relatively permanent change in neural functioning that becomes what is commonly termed *memory*. Again, relatively few definitive answers exist about how or where learning is stored in the central nervous system.

Two Definitions of Learning

Since we cannot observe learning, we must infer it occurs by looking at its observable effects. What things, influenced by learning, can we observe? The answer is the learner's behaviour. For instance, in school tests are given to determine what has been learned. The way questions are answered is the observable behaviour. In the workplace, your supervisor might look for ways you perform your job differently after training. Since learning is measured in terms of relatively permanent changes in behaviour, this becomes the operational definition of learning for many theorists. Behaviourists in particular adopt this definition.

Cognitive theorists, however, insist that even though learning can be inferred from behaviour, it is separate from the behaviour itself. By examining the ways in which people respond to information and the ways in which different types of behaviour are grouped or separated, they developed theories of how information is learned. For cognitive theorists, learning represents a change in the content, organization, and storage of information (see the section "Example of Cognitive Theory"). The term used to refer to the mental processing of information is **cognition**. For cognitive theorists, learning is defined as a relatively permanent change in cognition occurring as a result of experience. These theorists discuss learning in terms of mental infrastructures or schema rather than in terms of behaviour. Learning is seen as the building and reorganization of schema to make sense of new information. Bruner,[20] Gagné,[21] and Piaget[22] are among the cognitive theorists.

Cognition the mental processing of information.

Implications of Behaviourist Versus Cognitive Approaches

At first, the differences in the definition of learning may not seem important. It may seem to be a simple difference of whether learning is synonymous with behaviour or with how information is processed, organized, and stored. However, these differences create widely different approaches to how education and training are conducted.

One obvious and important difference is where control of learning is believed to occur. The behaviourist approach suggests that the environment controls learning. Certain external stimuli are present, the person responds to them, and certain consequences result. It is the model of learning implied in Figure 2-2 (page 42) and discussed earlier as part of reinforcement theory. In the behaviourist approach, the trainer controls learning by controlling the stimuli and consequences that the learner experiences. The learner depends on the trainer to elicit the correct associations between stimulus and response. Note that this model does not include the brain or any mental activity. B. F. Skinner's explanation of learning perhaps clarifies why he was sometimes referred to as a radical behaviourist. He defined learning as "a relatively permanent change in behaviour in response to a particular stimulus or set of stimuli."[23] In other words, we perceive things a certain way because of the consequences of perceiving them that way. Learning occurs when new consequences are experienced.

In contrast, the cognitive approach suggests that the learner controls learning. Prospective learners come to training with their own set of goals and priorities. They possess a set of cognitive structures for understanding their environment and how it works. They even develop their own set of strategies about how to learn. The learners decide what is important to learn and go about learning by applying the strategies they developed and with which they feel comfortable. For cognitive theorists, the learner controls what is learned and how. The trainer and the learning environment facilitate that process to a greater or lesser degree. Adoption of one approach or the other leads to implications for how training is conducted and the atmosphere of the training environment. Table 2-2 lists some of the instructional implications of these two positions. For some learning situations, a behaviourist approach is better, and for others a cognitive approach works better.[24] We discuss this issue again later in the chapter.

TABLE 2-2 Some Training Implications of Cognitive and Behaviourist Learning Theory		
Issue	**Cognitive Approach**	**Behaviourist Approach**
Learner's role	Active, self-directed, self-evaluating	Passive, dependent
Instructor's role	Facilitator, coordinator, and presenter	Director, monitor, and evaluator
Training content	Problem or task oriented	Subject oriented
Learner motivation	More internally motivated	More externally motivated
Training climate	Relaxed, mutually trustful respectful, and collaborative	Formal, authority oriented, judgmental and competitive
Instructional goals	Collaboratively developed	Developed by instructor
Instructional activities	Interactive, group, project oriented, and experiential	Directive, individual, and subject oriented

Accommodation the process of changing our cognitive map of the world to correspond with our experience in it.

Assimilation the incorporation of new experience into our existing cognitive map.

Example of Cognitive Theory. Piaget identified two cognitive processes critical for learning: accommodation and assimilation. **Accommodation** is the process of changing our construction ("cognitive map") of the world to correspond with our experience in it. Piaget indicated that accommodation occurs through the creation of new categories, or schema, to accommodate experience that does not fit into existing categories. **Assimilation** is the incorporation of new experience into existing categories. In cognitive map terms, accommodation changes the map whereas assimilation fills in the detail. These two processes are most clearly evident in young children but exist in adults as well. Suppose Mike (age 8) is in the rear seat of the car with his younger brother Brandon (almost 2 and learning to talk) as Dad drives through some farmland. As they pass a pasture where horses are grazing, Mike points and says, "Look Brandon, horses." Brandon responds hesitantly, "Horsies?" Mike excitedly replies, "Yes, that's right, horsies!" Dad glances back and says, "Good work, Brandon, you now know a new word!" Brandon is pleased and repeats the word several times to himself. As they continue driving, they pass another pasture with cows grazing. Brandon yells, "Look Mike, horsies!" Mike or Dad is now faced with teaching Brandon the difference between horses and cows.

What is the learning process that took place? Brandon started out with no understanding of horse or cow. When presented with a new perceptual experience and a label, Brandon created a new cognitive category that might include the following parameters: large, four-legged, brown, moving thing with a tail. So, when Brandon saw the cows, they fit enough of the parameters that he attempted to assimilate this new experience into the category "horsies." If Mike and Dad do a good job of teaching Brandon the differences between horses and cows, he will learn to discriminate between these two and create a separate category for cows (accommodation). What he does not know yet is that later in life he will be taught to create new categories such as mammals and species and that both horses and cows are included in some categories but not in others.

The processes of assimilation and accommodation reflect the way we organize our experience and the meanings we attach to the world as we encounter it. Our behaviour depends on how we accommodated or assimilated previous stimuli.

Integration of Cognitive and Behavioural Approaches We believe
that the cognitive and behavioural approaches must be integrated to provide a full

definition of learning. **Learning**, as we use the term throughout this text, is defined as a relatively permanent change in cognition resulting from experience and directly influencing behaviour. A fairly obvious implication of this definition is that changes in cognition and related behaviour that result from things other than experience (e.g., effects of drugs, fatigue, and the like) would not be considered learning. The definition also implies that changes in cognition and behaviour that are short-lived have not been learned. For example, memorizing a phone number long enough to walk from the telephone directory to the phone and dial the number would not fit into our definition. However, learning the mnemonic techniques that allow you to do that would be learning, if they were retained over a relatively long period of time.

Learning, as defined here, is not dependent on behaviour. Relatively permanent cognitive changes (new KSAs) can occur in the absence of observable behaviour. However, only the learner would know whether the learning took place. For example, think of courses you took in which the material was presented in a lecture or audiovisual form. If it was effective, you changed your way of thinking about the topic or came to a deeper understanding of the material—even though you did nothing other than pay attention and think about what was presented. However, until you engage in some activity related to the topic, no one other than you would know that learning had taken place. This phenomenon could also happen with skills. Suppose you are a chef and you attend a seminar on preparing a dish. You observe the presenter enhancing the flavour of a dish using a technique of which you had no previous knowledge. You go back to your kitchen, try the technique, and are successful on the first try. You acquired the "flavouring" skill through observation rather than behaviour. However, you might not be sure you had acquired the skill until after you engaged in the behaviour. Additionally, the more you use the technique, the more permanent (i.e., resistant to forgetting) it would become. Thus, behaviour is both an important measure of and a means of learning.

Each of these two approaches produces valuable insights about learning. Learning theories that integrate the substantiated aspects of both approaches explain learning more completely than either one alone. We discuss such a theory next.

Learning a relatively permanent change in cognition resulting from experience and directly influencing behaviour.

SOCIAL LEARNING THEORY

Albert Bandura and his associates developed a model of learning known variously as observational learning, vicarious learning, and most often, social learning theory.[25] One of the theory's most important contributions to the science of learning was demonstrating that learning could occur without any overt behaviour by the learner. That is, the learner did not have to do anything except observe what was going on around her. No behaviour pattern was produced and no reinforcement given.

The basic premise of **Social Learning Theory** is that events and consequences in the learning situation are cognitively processed before they are learned or influence behaviour. The processing of information leads to learning and changes in behaviour. Certainly, the consequences of behaviour (reinforcement or punishment) influence the likelihood of that behaviour in the future, but they do so as a result of how they are perceived, interpreted, and stored in memory. Thus, a person can learn by observing the behaviour of others and the consequences that result. This theory contradicts the strict behaviourists, who claim that learning can occur only as a result of a person's own behaviour and its consequences. The cognitive processes that are a part of social learning theory are motivation, attention, retention, and to some extent behavioural reproduction. Figure 2-5 illustrates the relationships among these cognitive processes.

Anticipatory Learning learning that occurs when a person finds out what consequences are associated with a behaviour (or set of behaviours) without actually engaging in the behaviour or receiving the consequences.

<u>Motivation</u> Although motivation was discussed at length earlier in this chapter, it is useful to see how it fits in with social learning theory. As the model indicates, motivation both influences and is influenced by the other processes. The learner's needs determine what things receive attention and are processed for retention. As depicted in the model, social learning theory incorporates the operant conditioning concept of behavioural consequences affecting the likelihood of future behaviour. However, whereas operant conditioning principles stipulate that the consequence can only be learned through the learner's behaviour—consequence pairings—social learning theory suggests that behavioural consequences can be acquired through anticipatory learning. **Anticipatory learning** occurs when a person learns what consequences are associated with a behaviour (or set of behaviours) without actually engaging in the behaviour and receiving the consequences. By observing someone else's behaviour, the observer can learn something about how to perform the behaviour and also something about the consequences of the behaviour. Thus, this theory provides a model for learning through observation alone. For this reason, it is often referred to as a theory of observational or vicarious learning. However, the model of learning processes illustrated in Figure 2-5 is more than just observational learning. It combines cognitive and behaviourist concepts into a comprehensive set of integrated processes that are applicable to all types of learning, providing another set of tools for designing and implementing training. Additional motivational issues are discussed later in the "Motivation to Learn" section.

Attention getting the person to focus where you want her to.

<u>Attention</u> The learning process begins with the learner's **attention** becoming focused on particular objects and events in the environment (stimuli). Of the great multitude of objects and events in the typical environment, we notice many of them but pay attention only to some. The things we pay attention to are those that stand out for some reason (loud, bright, unusual, etc.) or those that we learn are important (e.g., lead to need satisfaction). This reaction is reflected in the fact that we are more likely to model the behaviour of someone who is spotlighted in some way (highly

**FIGURE 2-5   The Cognitive Processes Involved
in Social Learning**
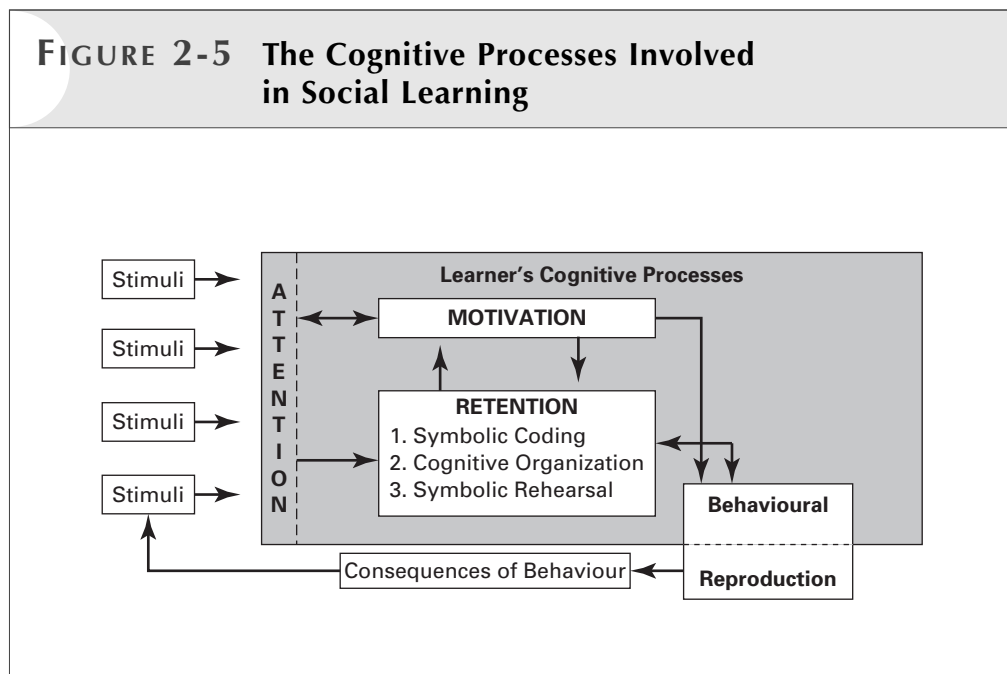
publicized, unusually attractive, popular, etc.) than of someone who is not. Similarly, we are more likely to model someone who seems to receive a lot of reinforcement than someone who receives little.

The concept of attention is important in training. Learning is improved by making key learning points stand out so that the trainees will focus attention on them. Eliminating extraneous objects, such as cell phones and beepers, keeps trainees from becoming distracted during training. Making learning exercises fun and interesting keeps attention focused on the learning topic. However, exercises that are fun but do not relate to the learning objectives draw attention away from what trainees are expected to learn, making the training less effective. The training design chapter addresses issues related to capturing trainee attention.

Retention
Once attention is focused on an object or event, the incoming information is processed for possible **retention**. Some of the information will be retained and some will be lost. The more training is designed to facilitate the retention processes, the more learning will occur. The initial phase of retention is the translation of the information into symbols meaningful to the individual, a process called **symbolic coding**. It typically takes the form of reducing the external objects and events to internal images and verbal symbols. These symbols are then organized into the existing cognitive structure through associations with previously stored information. **Cognitive organization** can be facilitated in training by asking the trainees to provide examples of how the new information relates to what they already know. This exercise serves two purposes. It allows the trainee to code and store the information more easily, and it allows the trainer to see whether the desired associations are being made. The training design chapter also discusses other ways in which training can facilitate retention.

To facilitate the retention process, the learner should "practise" the learned material through **symbolic rehearsal**, which involves visualizing or imagining how the knowledge or skill will be used. If the focus is on skill building, the trainee imagines using the skills in different situations. This exercise is usually fairly easy to do because the skill helps to define the situations. When the focus of learning is knowledge, it is sometimes more difficult to imagine how it can or will be used. For example, think back to when you were learning the multiplication tables. Most of us memorized these through constant repetition over many months, and that repetition provided us with the experience of using multiplication to solve problems. Each year as we advanced to the next grade, we were given more multiplication problems to solve. In contrast, storing information without any associations with personal use—in other words, just memorizing—typically results in only short-term retention. Students who have ever crammed for an exam are probably familiar with this phenomenon. Thus, associating information with its uses enhances the storage and retrieval process. The symbolic rehearsal process can be thought of as mental practice. Observing others use the knowledge or skill provides additional opportunities for symbolic rehearsal because as you watch them you can put yourself in their place. Symbolic rehearsal also increases the ability to generalize learning to novel situations. The discussion on training design in Chapter 5 discusses other ways to enhance retention through symbolic rehearsal.

Behavioural Reproduction
Behavioural reproduction is repeated practice. The more a person practises using new information, the more it is learned and retained. The effectiveness of practice depends on how the practice is designed and reinforced, as we will discuss in detail in the training-design chapter. Figure 2-5 shows the behavioural reproduction process as being a part of both the learner's cognitive processes and the external environment. This duality reflects the fact that the person's

Retention the process of storing and being able to access what is learned.

Symbolic Coding the translation of the information into symbols meaningful to the individual.

Cognitive Organization the organizing of these symbols into the existing cognitive structure through associations with previously stored information.

Symbolic Rehearsal the visualization or imagining of how the knowledge or skill will be used.

Behavioural Reproduction repeated practice.

cognitive processes initiate the behaviour—the person must retrieve the appropriate behaviour from storage and direct the body to perform the appropriate actions—and then the behaviour itself actually occurs in, and becomes part of, the environment.

We already spent considerable time discussing the importance of behavioural consequences. One additional point is worth making, however. If consequences are to affect behaviour, the individuals must be aware of these consequences. For example, assume a supervisor recommends an employee for a bonus but has not yet told the employee. Subjectively, for the employee it is not a consequence of behaviour, even though objectively it is. Even when aware of a consequence, the person may misinterpret its value. The supervisor who is disappointed in an employee's performance may sarcastically say, "Really nice job," but the employee may misinterpret this as giving praise. Thus, the person must be aware of and correctly interpret behavioural consequences if those consequences are going to have the desired effect. Effective training programs need to call attention to the desirable consequences of learning and of using the learning back on the job.

RELATING INSTRUCTION TO LEARNING

Learning theory describes how individuals learn. Gagné and his associates suggest that effective instruction requires a "set of events" external to the learner, designed to facilitate the internal process of learning.[26] So what things (external events) are needed to facilitate the trainees' learning of a particular objective? Put another way, can the sequencing of events in a training process increase the likelihood that learning will occur?

The answer is yes. A particular order of presenting material will facilitate learning. Gagné and his associates provide a **Micro Theory of Instructional Design**, which is a guide for designing training. It is relevant for all three types of learning outcomes: cognitive knowledge, skill-based, and attitudinal. The theory provides nine steps (sets of events) to follow in developing training for a learning objective.[27] To be most effective, this "set of events" should be arranged in a specific order, as depicted in Table 2-3. Gagné and his associates do not indicate that the nine steps are necessary for every learning objective, or that the sequencing must be exactly as indicated. They say:

> [T]hese events of instruction do not invariably occur in this exact order, though this is the most probable order… by no means are all of these events provided for every lesson…. Their role is to stimulate internal information processes … sometimes an event will be obvious to the learner and not needed… or provided by the learner themselves…. In using the checklist the designer asks, "Do these learners need support at this stage for learning this task?"[28]

Let's go through each of the events using a learning objective related to teaching apprentice electricians.[29] The learning objective is to determine the amperage of an appliance, given the watts and voltage. The first event, "gaining attention," is obtained by showing a short video in which a family is in a kitchen; the lights, radio, and toaster are all on. One of the children plugs in the blender and when she turns it on, the radio, lights, and toaster shut off. This gets everyone's attention (instructional event one). Now you ask, "What happened here?" When the answer is given (a fuse was blown), you discuss why it happened and move to the second event: "Inform the learner of the objective." The objective is to calculate the amperage of appliances in order to wire a room properly with the correct number and type of plugs based on what will be used in that room. The next event is "stimulate recall of prerequisites."

Here, you would ask apprentices to recall the typical voltage in a house (it is 120 volts, but for ease of calculation here we will round out 100). You then ask, "Where is the wattage for appliances found?" The answer is on a label on the back or side of the appliance. Then ask, "What is the purpose of fuses?" The answer is to prevent circuit overload. Finally, ask how their size is measured (amps).

TABLE 2-3 Gagnè-Briggs Nine Events of Instruction

Instructional Event	What is does . . . Gets trainee
Gaining attention	To focus on the trainer
Informing the trainee of the goal (objective)	To begin to focus on the goal
Stimulating recall of prior knowledge (learning)	To retrieve prior learning to working memory
Presenting the material	To selectively perceive important parts of training
Providing learning guidance	To consider how the new material fits into trainee's overall schema, and clarify where it belongs for ease of retrieval
Eliciting the performance	To do it
Providing feedback	To perform effectively by reinforcing correct responses and assisting when incorrect
Assessing performance	To attempt a number of similar problems to determine if the trainee has the concept
Enhancing retention and transfer	To do more complex and varied examples of the concept and assess the success

Source: Gagné R. M., Briggs, L., & Wager, W. (1992). *Principles of Instructional Design.* Fort Worth: Harcourt Brace Jovanovich.

"Presenting the stimulus" is done by providing the formula for determining amperage (amps = watts/volts). Given the wattage of the blender (1000 watts), you ask, "What is its amperage?" You may give a few more examples. Next, for the "provide learning guidance" event, you ask the appentices to go back to the example at the beginning of the discussion. Tell them the kitchen was all wired to one typical 15-amp fuse, and ask, "Would the fuse have still blown if the toaster was not plugged in?" They cannot give the correct answer because they need more information, so you discuss the need to have the wattage of everything in the kitchen to determine the total amps. You then give the wattages to them (100-watt light, 1000-watt toaster, 10-watt radio) and ask for the amps generated for each.

For the next event, "eliciting performance," you provide the apprentices with the wattage of a number of appliances (refrigerator: 1000 watts, TV: 300 watts, space heater: 1400 watts, and so forth) and ask them to determine the amps each will require. To "provide feedback," you review the answers to the preceding questions and determine how well each apprentice understood the process. "Assessing performance" is done by providing the apprentices with a number of problems for which they need to calculate the amps of appliances. For the final event, "enhancing retention and transfer," you provide them with the problem of wiring a workshop. The appliances to be used in the workshop include a table saw, router, planer, drill press, sander, four lights, radio, electric heater, and so forth. You also give the wattage for each of the appliances. Then you ask them to indicate how many 15-amp circuits they would need to provide to be most efficient and what they would put on the same circuit.

Using the theory helps you create a setting in which learning is most likely. Table 2-4 provides another example.

TABLE 2-4 Example of a Lesson in Problem Solving

Objective: Given a drawing of a plot of land, the trainee generates a plan for a sprinkler system that will cover at least 90% of the land, using the least amount of materials (PVC pipe and sprinkler heads).

Event	Media	Prescription
1. Gaining attention	Live instruction and overhead projector	Show pictures of sprinkler coverage of a rectangular plot of ground. One highly successful (90%) coverage, one unsuccessful (70% coverage), and one using too many sprinkler heads. Show these rapidly, inviting attention to their differences.
2. Informing the learner of the objective	Same	The problem to be solved is to design the most efficient sprinkler system for a plot of ground—one that covers at least 90% and uses the least amount of pipe and sprinkler heads.
3. Stimulating recall of requisites	Overhead projector	Have the learners recall applicable rules. Since the sprinkler heads they will use spray in circles and partial circles, rules to be recalled are (1) area of a circle, (2) area of quarter and half circles, (3) the area of rectangular areas, (4) the area of irregular shapes made by the intersection of circular arcs with straight sides.
4. Presenting the stimulus material	Same	Restate the problem in general terms, and then add specific details: (a) rectangular lot 50 by 100 ft; (2) radius of the sprinklers, 5 ft; (3) water source in the center of the lot.
5. Providing learning guidance	Same	The trainee will need to design tentative sprinkler layouts, draw them out, and calculate the relative efficiency of each. Guidance may be given by informing the learner of various options if it appears that rules are not being applied correctly. For example, "Could you get more efficient coverage in the corner by using a quarter-circle sprinkler head?" Or "It looks like you have a lot to overlap; are you allowing for a 10% noncoverage?" ask the learner what rule he is following for placing the sprinkler.
6. Eliciting performance		
7. Providing feedback	Oral review by instructor	Confirm good moves, when in a suitable direction. If the learner doesn't see a possible solution, suggestions may be made. For example, "Why don't you draw four circles that barely touch, calculate the area, then draw a rectangle around the circles and calculate the area of coverage to see how much you have?"

TABLE 2-4 (Continued)		
Event	**Media**	**Prescription**
8. Assessing performance	Instructor	Present a different problem using the same type of sprinkler, with different lot shape and size. Check the efficiency of the trainee's solution in terms of coverage and amount of materials used.
9. Enhancing retention and transfer	Worksheet	Present several different problems varying in shape of lot, position of the water source, and area of sprinkler coverage. Assess the generalizability of trainee problem solving to these new situations.

Source: Gagné, R. M., Briggs, L., & Wager, W. (1992). *Principles of Instructional Design.* Fort Worth: Harcourt Brace Jovanovich.

WHY ARE THEY RESISTING AND WHAT CAN I DO ABOUT IT?

Learning, like eating, is one of the most fundamental processes of survival, yet trainers and managers continually complain about trainees who do not pay attention, are disruptive, and demonstrate a general resistance to learning new material.

Often, the older the trainees or the higher their education, the more resistant they are. If learning is a basic human process, why are so many complaints of this type made?

Viewing learning as a performance outcome is the first step to understanding **resistance to learning**. Most learning is not something that happens automatically or unconsciously. It is an activity we decide to do or not do. From the performance model discussed earlier (see Figure 2-1 on page 37), we know that learning performance is determined by a person's motivation, KSAs, and learning environment.

Resistance to Learning not wanting to go through the discomfort of change.

MOTIVATION TO LEARN

Most trainees arrive at training with an elaborate and highly integrated **cognitive structure**. They already know a lot about themselves, their work, their company, and many other things.[30] The objective of training is to change some part of that cognitive structure so that the trainee's performance will be improved. Change creates anxiety, however, for the following reasons:

Cognitive structure

Fear of the unknown	"Right now I know how things work, but I do not know how this training will affect things."
Fear of incompetence	"I do not know whether I'll be able to learn this stuff."
Fear of losing rewards	"What will happen to my pay, status, and perqs, among other things?"
Fear of lost influence	"Will this training make me more or less valuable?"
Fear or lost investments	"I've spent a lot of time and energy learning to do it this way. Why change?"

These concerns deal with the trainees' needs, their current competencies, and how training will change their current outcomes. Expectancy theory addresses these factors, and the trainees' motivation to learn will depend on the answers to these questions. To the degree that the answers indicate that learning is worth the effort, the individual will be motivated to learn.

Even when trainees acknowledge the value of the training, they may believe the effort required to master the learning is just not worthwhile. One example of this is the reluctance of many experienced managers to learn how to use computers. These managers are often bright and competent in other aspects of their jobs but continue in their old ways of communicating and calculating, even though they see that the computer could increase their capabilities. They already have well-developed cognitive structures regarding what they already know. It is just too difficult to change these cognitive structures and learn the new KSAs. The more difficult a task is, the greater the resistance is likely to be. The benefits of doing a difficult task must be much higher than the costs to induce the person to do it. Why is learning more difficult for those with more-extensive and -developed cognitive structures?

In Piaget's terms, the accommodation process (developing new cognitive categories) is the most difficult, while assimilation (adding new things to existing categories) is relatively easy. Accommodation requires a learner to create new categories that then need to be linked to other related categories. The more categories that exist and the more developed they are, the more difficult the learning. When assimilating, the learner simply adds new elements and rearranges associations among elements within a single category. When accommodating, not only must learners create a new category and place elements into that category, but they must also associate this category with other categories. The elements within those categories must be modified to create the network of associations that appropriately incorporates the new information.

This type of situation occurs whenever a company changes the paradigms it uses for conducting its business. For example, think about what supervisors face when companies move from a traditional, centralized, hierarchical, autocratic decision-making process to a flexible, team-based, more consensus-based, employee-involvement system. From their experience and training in the traditional system, the supervisors developed a cognitive structure for getting things done. They learned how to make all the decisions for their subordinates and developed a system for communicating those decisions and ensuring that they are carried out effectively. These strategies were probably reinforced over many years. A new piece of equipment or a change in the work process brings new procedures that are learned and assimilated into the supervisor's decision-making structure relatively easily. Under the new, team-based decision-making, however, the whole process of making decisions must be relearned because the underlying organizational assumptions have changed. For the supervisor, the focus is no longer on the quality of decisions but on the supervisor's ability to facilitate quality decisions by the team. Although some aspects of the supervisor's old decision-making process might still be useful, his cognitive structure must be changed to incorporate the new concepts, and the useful aspects of the old concepts must be reorganized and integrated with the new. For this reason, learning the new system will be more difficult for supervisors with a lot of experience than for a newly hired supervisor with little experience in the traditional system.

Resistance to learning also comes from defensiveness. The more experienced a person is, the more she has already learned, which means a more developed, integrated, and complex cognitive structure. A great deal of effort went into creating that cognitive structure. Training can, in a sense, be seen as an attack on a person's competence, especially if the training is mandatory. Trainees in this situation can also feel

they are being told that the trainer knows more about how to run their area than they do. In these cases, the trainees are likely to try to show the trainer, and the other trainees, that the training or the trainer is inadequate or irrelevant or that their current KSAs are better than what training has to offer.

This generalization is not to say that older, more-experienced people cannot learn new things or discard old beliefs. They frequently do. As adults mature, they appear to go through periodic episodes of cognitive reorganization, in which concepts or principles of long standing are re-evaluated.[31] During these cognitive reorganizations, knowledge that is of little functional value is discarded and new KSAs are discovered and integrated into their cognitive structure, especially in times of transition such as job or career changes. For adults, the key factor in discarding old learning and acquiring new learning is its practical usefulness. Training that seems abstract, theoretical, or otherwise unrelated to doing the job will likely be ignored or resisted. Training that can demonstrate its value and practical utility will find trainees eager to learn.

GROUP DYNAMICS

Group dynamics, and its impact on motivation, is another reason for trainees to resist learning new ways. The power and control of the group over its members was first noted in the Hawthorne studies of the 1920s and 1930s.[32] Even though members of the group were paid a piece rate, the output from members of the group was always within a certain number of units. Examination of this study revealed that the group set a standard, rewarded those who remained within the standard, and punished those who did much more or much less. Thus, the group norm of a certain number of units was generally followed.

Group Dynamics the process whereby the group provides pressure for conformity to its expectations.

The power of the group comes from rewards for members who follow group norms or punishment for those who do not. These rewards or punishments can be as simple as talking to (reward) or shunning (punishment) a group member. Punishment can also be severe, such as slashing tires or physically threatening those who do not comply. If you want to be a good group member, you must agree with and follow what the group decides is best. Consider the following scenario. Sarah arrives at the training centre early, excited to be attending a workshop on how to communicate with customers more effectively. Fellow trainees are talking among themselves, making fun of the training. One of them says, "They are going to tell us how to do our job; I bet the trainer has never even done our job, so how could he know?" Another responds, "Yeah, these workshops are put together by those who never worked in a real job, but at least we can enjoy this as a day off work." Then one turns to Sarah and says, "Hey, I see you managed to con your boss into sending you here for a rest too—good work." To be part of the "in group" Sarah will have to agree, and, as a result, will not likely participate in the training as much as she would want to. This behaviour will affect the amount she learns.

Say that in spite of her (and everyone else's) lack of participation in the workshop, Sarah did learn a few skills. Now she goes back to her workplace. There she hears co-workers comment, "Well did you enjoy your day off? Wasn't that training the stupidest stuff you have ever seen?" and "Can you imagine using that 'active listening' stuff on a real customer?" With such comments, what is the likelihood Sarah will want to try some of these new skills? Group dynamics is a powerful force that can drastically inhibit both learning and transfer of skills.[33]

Group dynamics can also be used to support high performance. The pyjama factory experiments of the late 1940s compared employees in two groups where change was necessary in how the jobs were done.[34] In one group employees were told about the

changes, and in the other the members provided input into the changes. The no-participation group showed a drop in productivity from the baseline, and the participation group showed an increase in productivity from the baseline. The most important factor in the difference was group norms that developed either to restrict output (no-participation group) or increase it (participation group). More recent research indicates that trainees' perception of their work groups' support for training is a strong predictor of the likelihood that trainees will transfer what they learned to the job.[35] The control the work group exerts over the individual member is a double-edged sword. It is a good thing if the norms are developed in line with the organizational goals. One way of developing these norms is to allow input from the work group on decisions that will affect them. The movement toward more teams and teamwork in organizations provides such opportunities, but in order to ensure the right norms are developed, these work groups need to be nurtured and made to feel valuable.[36]

TRAINING THAT MOTIVATES ADULTS TO LEARN

Learning occurs quite frequently in adults when it appears to offer practical application immediately or in the near future.[37] For example, a study showed that IBM sales representatives averaged more than 1100 hours a year in "new learning episodes." (A new learning episode was defined as a deliberate attempt to gain and retain some significant knowledge or skill for problem solving or personal change.) Professors, by contrast, averaged slightly more time (1745 hours) on fewer episodes. Clearly, adults are not resistant to learning but they are sometimes resistant to training offered by their companies. Why?

TRAINING RELEVANCE, VALUE, AND READINESS TO LEARN

Some of the most often mentioned reasons for adults engaging in new learning are problems on the job, job/occupational changes, home and personal responsibilities, and competency at some hobby or recreational activity. In the study mentioned previously, about two-thirds of the learning episodes were job-related. The need to know and the readiness to learn are critical aspects in the success of adult learning programs.[38] The need to know refers to the value of the knowledge to the learner. Adults most often seek to learn when the learning is life-, task-, or problem-centred.[39] Readiness to learn refers to the amount of prerequisite knowledge (KSAs) the trainee possesses and the trainee's belief in his or her ability to learn the material. This aspect is consistent with the principles of self-efficacy and expectancy theory. People's motivation to learn a particular knowledge or skill set is directly influenced by their belief that if they put forth the effort, they will be successful in their learning (Expectancy 1). Beyond this expectation, they must feel that the benefits of learning the KSAs outweigh the benefits of not learning them (Expectancy 2).

The challenge is to provide instruction in a context that overcomes the natural resistance of adult learners to changing their cognitive structures. Making the relevance and value of the learning clear, as it relates to the trainee and organizational goals, addresses one source of resistance to learning. Ensuring that the trainee believes she can successfully master the training content is another important motivator. Over time,

adults may develop feelings of low self-efficacy in certain areas and feelings of high self-efficacy in others. For those with a low self-efficacy for learning in general or for the specific content area of the training, the trainer needs to change the self-efficacy beliefs so trainees are more willing to attempt new learning. Doing so requires a careful match between the trainee's characteristics (e.g., KSA level, learning-style preferences) and the design of the training. Trainers can overcome a significant type of resistance to learning by demonstrating that learning in the subject area can be as easy as in areas in which trainees have high self-efficacy.

ALLOWING TRAINEES CONTROL OVER THEIR LEARNING

As we pointed out, trainees walk into training with well-developed cognitive maps that reflect their experiences. Since these experiences differ from person to person, any given training group is likely to differ considerably in the KSAs they possess and in their learning strategies. Trainees often view these differences as hindrances to their learning and resist training with others who are dissimilar. However, these differences can be viewed as a learning resource if the trainees are willing to share their experiences and strategies and if the training environment supports such an exchange. In fact, adult learners prefer sharing their learning experience with others if the environment is supportive. Even though adults prefer to plan their own learning projects and to adopt a self-directed approach to learning, this preference does not imply a desire to learn in isolation. Rather, it reflects a desire to set their own pace, establish their own structure for learning, and employ flexibility in the learning methods. More often than not, adults seek learning assistance from others. In short, they do not mind learning from others, but they want to maintain some control over the learning experience. These characteristics suggest that training that incorporates individualized components and also makes use of shared, relevant experiences will be most effective at overcoming resistance to learning.

Although it is true that many adults are able to learn new competencies even when they are not told the significance or usefulness of the training, they are much less likely to be able to apply these new competencies to their job. Research suggests that trainees receiving instruction on how to perform a set of skills show improved performance at the end of training but fail to use the skills on their own or to generalize the skill usage to similar situations.[40] Training that provides instruction on the "how to" and includes the "why and when" results in improved performance as well as continued use of the skill across appropriate situations.[41]

INVOLVING TRAINEES IN THE PROCESS

Training, then, should take into account the motivational and cognitive processes that influence the trainee's readiness and willingness to learn. Many writers emphasize the importance of participation, choice, personal experiences, critical reflection, and critical thinking as key characteristics of adult learning.[42] Involving the trainees in the learning process from needs assessment to design and evaluation addresses many of these issues.

Involvement is a key part of overcoming resistance to change. You may remember, from the discussion of OD principles in Chapter 1, that involving those who are affected by change in planning and implementing the change creates a sense of ownership.

The result is increased commitment to the change as well as better implementation of the change. Supervisors, as well as trainees, should be involved in determining the training needs because both are affected by the change. Supervisors have a clearer understanding of why new KSAs are necessary, how they fit in with the overall plans for the work unit, and the consequences of their employees learning or not learning the new KSAs. The trainees, in turn, see what KSAs they need to improve and understand why those KSAs will be of value. Involving trainees in needs analysis and other parts of the training process will be discussed in more depth in relevant chapters.

INDIVIDUAL DIFFERENCES RELATED TO LEARNING

Some interesting findings came from studies regarding the learning process for low-ability and high-ability individuals.[43] Goal setting as a motivational incentive does not always operate with the same magnitude for these two groups. When those with low ability are starting to learn a moderately difficult task, providing goals to them will inhibit, rather than enhance, learning. Although the same is true for high-ability individuals, it is not nearly as severe. High-ability individuals, it seems, have the extra cognitive capacity to focus on goals as well as the new learning in the early learning stage. This difference disappears as the task is learned, and then goal setting enhances performance of both low- and high-ability individuals. Even though a difference separates the two groups, results from this research suggest that overall, it is wise not to introduce goal setting as a motivational device early in the training process.

Although we indicated that it is desirable to consider diversity among trainees as an opportunity, this is true only up to a point. For example, trainees who are substantially less knowledgeable than others can create significant problems. They may not be able to keep up with the material, or if the material is presented at a slower pace, the more knowledgeable trainees are bored to tears. It is not only differences in KSAs that can create problems in a training group. A contingency approach to adult learning looks at the characteristics of trainees, such as those listed in Table 2-5, that suggest different approaches to training and development.[44]

The logic of using different approaches for trainees with different characteristics makes some sense, but research in most of these areas is sparse or nonexistent. Currently, research in the areas of resistance to change, absorption level, and topic interest provide some substantiation for providing different training designs to different populations. For example, those with low self-efficacy should have training that first addresses the self-efficacy issue; for those with a high sense of self-efficacy, this training would seem not only irrelevant but also

TABLE 2-5 Dimensions for Trainee Assessment Prior to Training

1. Instrumentality	Desire for immediate applicability of the material to be learned
2. Skepticism	Need for logic, evidence, and examples
3. Resistance to change	Fear of unknown or personal consequences of change related to feelings about self-efficacy and locus of control orientation
4. Attention span	Amount of time before attentiveness is substantially diminished
5. Expectation level	Trainee's quality/quantity requirements of training
6. Dominant needs	Intrinsic and extrinsic motivators that drive the trainee
7. Absorption level	Pace at which trainee expects and can absorb new material
8. Topical interest	Trainee's personal (job-relevant) interest in the material

demeaning. Of course, providing different training designs becomes more complex and more costly for the organization.

Differences in learning characteristics can have important consequences for training; however, providing separate training sessions may not always be the most practical or cost-effective way to achieve the organization's HRD goals. Thus, training programs need to be designed to accommodate a sufficiently large group of trainees while at the same time considering individual differences. Training design issues are discussed in more detail in Chapter 5. However, training professionals should consider the following nine principles in developing training programs for their employees:[45]

1. Identify the types of individual learning strengths and problems, and tailor the training around them.

2. Align learning objectives to organizational goals.

3. Define program goals and objectives clearly at the start.

4. Engage the trainee, thus maximizing attention, expectations, and memory.

5. Use a systematic, logically connected sequencing of learning activities so that trainees master lower levels of learning before moving to higher levels.

6. Use a variety of training methods.

7. Use realistic job- or life-relevant training material.

8. Allow trainees to work together and share experiences.

9. Provide constant feedback and reinforcement while encouraging self-assessment.

The trainer can address the diversity of characteristics trainees bring to training within the context of a group-learning environment by applying these principles to training programs.

Summary

An employee's performance is a function of motivation, KSAs, and the environment. To understand motivation we turned to two types of theories of motivation: need and process. Need theories, such as ERG, explain what it is that motivates an individual. Process theories, such as expectancy theory, explain how individuals are motivated.

Two historical approaches to understanding learning are the behaviourist perspective (Skinner) and the cognitive perspective (Piaget). To fully understand learning, we examine it from a more-integrated approach through Bandura's social learning theory. The behavioural approach (reinforcement theory) focuses on the importance of the environment, and the cognitive approach (accommodation/assimilation) emphasizes the notion that learning can take place without any behaviour being exhibited. Together they provide a more complete picture of the learning process than either can do alone. The process of learning provides the foundation for designing effective training. Gagné and colleagues provide this foundation with their theory of instructional design (nine events of instruction).

To motivate employees to learn, you must first realize they already know a great deal, possess highly integrative cognitive structures, and have been successful to date. A number of reasons explain why they are hesitant to learn more material, such as fear of the unknown or of not being successful at learning the new material. To motivate them, you need to make the training relevant and valuable, and be sure they are confident of being successful. Goal setting will increase motivation in the later parts of the training program but will interfere with learning in the early stages. Finally,

trainee involvement with each phase of the training process will facilitate trainee interest and motivation in the training.

One final concern in making training relevant is the issue of individual differences. In general, we advise you to treat the diversity of individual characteristics in a training group as an opportunity. However, sometimes it will be best to develop separate training programs. Nine principles are offered for addressing individual differences in the design of training programs.

Implications for Practice

1. There is no such thing as someone "not being motivated," unless they are dead. The person is always motivated but may not be motivated to do the things you want. Understanding theories of motivation can help a supervisor determine motivators and manipulate expectancies to increase the likelihood a person will behave in appropriate ways.

2. Understanding learning theory provides us with the ability to identify learning processes that are activated at various points in training. This provides us with a method for designing our training to increase the likelihood training will lead to learning.

3. Classical conditioning, because it is automatic, requires us to be diligent in setting up the surroundings for trainees. Providing an environment that leads to positive feelings will improve the likelihood that trainees will not be distracted by negative physiological symptoms.

4. Development of positive group pressures for learning and transfer of training is an effective method of improving the likelihood of success.

Key Terms

Accommodation   *xxx*

Anticipatory learning   *xxx*

Assimilation   *xxx*

Attention   *xxx*

Behavioural reproduction   *xxx*

Classical conditioning   *xxx*

Cognition   *xxx*

Cognitive organization   *xxx*

Cognitive process   *xxx*

Cognitive structure   *xxx*

Environment   *xxx*

ERG theory   *xxx*

Existence needs   *xxx*

Expectancy theory   *xxx*

Extinction   *xxx*

Group dynamics   *xxx*

Growth needs   *xxx*

Law of effect   *xxx*

Learning   *xxx*

Micro theory of instructional design   *xxx*

Motivation   *xxx*

Needs theory   *xxx*

Negative reinforcement   *xxx*

Operant conditioning   *xxx*

Performance model   *xxx*

Positive reinforcement   *xxx*

Process theories   *xxx*

Punishment   *xxx*

Reinforcement theories   *xxx*

Relatedness needs   *xxx*

Resistance to learning   *xxx*

Retention   *xxx*

Self-efficacy   *xxx*

Social learning theory   *xxx*

Symbolic coding   *xxx*

Symbolic rehearsal   *xxx*

Theories   *xxx*

Valence   *xxx*

Questions for Review

1. Explain the behavioural and cognitive approaches to learning. Which is most relevant to training? Explain your answer.

2. You are a trainer explaining expectancy theory to a group of managers so they can better understand and deal with employee motivation problems. One of the managers says, "I do not have time for this theory stuff. I want real-world training that helps me in my job." How would you respond to the trainee? What is your rationale for your response?

3. List the nine events of instruction as outlined by Gagné-Briggs, and indicate how you would use them in a training situation.

4. Explain why different people need different training methods.

5. How does a work group exert control over the performance of a worker? Provide a rationale for why this "power" is a positive or negative thing.

6. How can training be designed to motivate learning and accommodate trainee differences?

Exercises

1. The following steps provide practice in implementing a social learning strategy.
   a. Consult with a friend, co-worker, or fellow student to identify a target behaviour the person does not currently have but would like to have.
   b. Develop a social learning strategy for the person to acquire that behaviour.
   c. Implement the strategy.
   d. In small groups or with the whole class, describe what you tried to do and what happened.

2. In groups of four to six people, discuss the differences among you that would impact the kind of training you would prefer. Use Table 2-5 on page 62 to start your discussion, but do not limit it to only those characteristics. What accounts for the differences and similarities among your group members?

3. Observe an introductory course in computer programming. Then observe an introductory course in art or music. Which course uses a more behavioural and which a more cognitive approach to learning? If possible, interview the instructors to find out why they use the approach they do. Describe the match between the instructional approach and the subject matter.

4. Use the following to see how expectancy theory explains differences in student motivation.
   a. In a small group, discuss the most important outcome you want to achieve in this class (it may or may not be a letter grade). Have each person indicate how valuable that outcome is to him or her using a scale from 1 = "not at all desirable" to 10 = "extremely desirable."

   b. Ask a group member to describe his or her most important outcome; ask that person to indicate how motivated he or she is to achieve this outcome compared with the other things he or she wants to do this term (use a scale of 1 = "not at all motivated" to 10 = "extremely motivated").
   c. Then ask that same person to describe the things that must be done (performance level) in order to achieve that outcome.
   d. Next, ask the person to indicate the Expectancy 1 level (the belief that he or she will reach the performance level). Then ask the person to describe Expectancy 2 (the likelihood that successful performance will result in the outcome). Use probabilities (e.g., .1 = "very unlikely,".5 = "50% chance of happening,".9 = "very likely") to reflect expectancies.
   e. Now examine the expectancy linkages to see how well they conform to the person's level of motivation. Discuss any discrepancies and why they exist.

5. This exercise is for those who are working together on a project. Without conversation among members of your group, write a list of the group's norms for performance on the project. When you are done, indicate whether you followed each of the norms and why. Once everyone has finished the tasks above, collect all the responses and mix them up. Hand them out. Allow each person to read the responses they received and compile the responses on a flip chart. Once all responses have been read, discuss the implications of your group's perception of performance norms.

Web Research

Look on the Web for learning theories that are not in the text. Find one and suggest how it could be used in training.

CASE ANALYSIS

Rick's New Job

Rick recently received an MBA. In university, he was known as smart, hardworking, and friendly. His good grades landed him an internship with Peterson Paper Products to head up their sales department. Near the end of the internship Val Peterson, the President and founder of the company, asked Rick to meet him after work to discuss the future.

Peterson Paper Products

Val Peterson founded Peterson Paper Products (PPP) 17 years ago. It purchases raw paper of varying grades and produces paper stock for business, personal stationery, and greeting cards. Its annual sales topped $15 million, and it employs 80 to 90 people, depending on demand. Sales gradually declined over the last two years after steady and sometimes spectacular growth during the previous seven years. Competition increased markedly over the last three years, and profit margins dwindled. Although PPP is known for the high quality of its products, consumers are shifting from premium-priced, high-quality products to products with higher overall value. Through all of these changes, PPP maintained a close-knit family culture. At least half of the employees have been with the company since the beginning or are friends or relatives of the Petersons or Mr. Ball, Val's partner.

Val Peterson, 53, holds the majority of stock in this privately held company that he founded. He began working summers in a paper company during high school. He supervised a shift at a paper plant while he went to college at night. After graduation, he worked at increasingly higher management levels, occasionally switching employers for a promotion. Eighteen years ago, he quit his vice-presidency with a major paper product manufacturer to start his own company. Employees see him as charismatic, even-tempered, and reasonable. He spends most of his time and energy on company business, putting in 12-hour days.

Rosie Peterson, 50, is Val's wife, and the Controller for the company. She holds 5 percent of the company stock. Rosie never went to college, and her accounting methods are rather primitive (all paper and pencil). Nonetheless, she is always on top of the financial picture and puts in nearly as many hours as Val. She exerts a great deal of influence in the operations and direction of PPP.

Walter Ball, 61, is both Mr. Peterson's friend and business partner. He owns 25 percent of the stock and has known Val since before the start of PPP. He is VP of Operations, which means he oversees the computer information systems that run the paper production process and handles the technical side of the business. He is not current on the latest computer or manufacturing technology, but he loves the paper business. He says he will probably retire at 65, but most say they will believe it when they see it.

Diane Able, 41, is the Customer Service Manager and is married to Steve Able, the Chief Engineer. Diane worked her way up in the company over the last ten years. She is often asked to assist Mr. Peterson with projects because of her commonsense, and he trusts her to keep information to herself.

Rick's Offer

When Rick met Mr. Peterson to "discuss the future," he was nervous. He knew Mr. Peterson liked his work so far, but did not know if it was enough to extend his internship another six months. So far, he had worked with Mr. Peterson only on special projects and did not know the rest of the management group well. He was flabbergasted when Mr. Peterson said, "I was thinking that you might like to work here at PPP full-time and help us out with our sales department."

The two of them discussed the problems in the sales area and talked about what could be done to boost sales. Rick agreed to start the next Monday. During this conversation, Rosie walked in and suggested they all go out to dinner. At dinner, Rosie emphasized to Rick that PPP was a family operation, down-to-earth and informal. "You probably shouldn't try to change things too quickly," she warned. "People need time to get used to you. You have to remember, you're an outsider here and everyone else is an insider." Then Val moved the conversation back to what the future could be like at PPP.

Rick's Awakening

The first few days at work, Rick spent time getting to know the plant and operations, meeting all the employees, and

familiarizing himself with the problems in sales. He met with Val each morning and afternoon. He also met with the key managers, not only to introduce himself but also to convey his desire to work collaboratively with them in addressing the problems in sales. He was conscious not to flaunt his university education and to convey that he recognized he was a newcomer and had a lot to learn. In the middle of his second week, Val told him that his reception by the other employees was going very well. "Your enthusiasm and motivation seem to be contagious. Having you join us shows them that things need to change if we're going to reach our goals."

Rick noticed, however, that the managers always went out in groups, and he had not been invited along. Also he was not included in the informal discussion groups that formed periodically during the day. In fact, the conversation usually stopped when he approached. Everyone was friendly, he thought; maybe it would just take a little more time.

By his third week, Rick identified some of the problems in the sales department. Among the four salespeople, morale and productivity were moderate to low. He was unable to find any sales strategy, mission, or objectives. The records showed that Val was by far the leading salesperson. The others indicated that Mr. Peterson "always works with us very closely to make sure we do things right. If he senses there might be a problem, he steps in right away." After formulating a plan, Rick discussed it with Mr. Peterson. "First, I would like to institute weekly sales meetings so we keep everyone up-to-date. I also want to create a centralized sales database," he told him. Mr. Peterson smiled and agreed. Rick felt he was finally a manager. He did feel that he should have mentioned his idea for creating a sales department mission and strategy but recalled Rosie's caution about not moving too fast.

Rick discussed with Mr. Ball the possibility of using the centralized computer system to run word processing and spreadsheet software on terminals. Mr. Ball was concerned that outsiders could access the data in the spreadsheets. Anyway, he did not think the system could handle that task because its primary function was production. Puzzled, Rick asked if a PC could be allocated to him. Mr. Ball said that no one in the company had one.

"Well," Rick thought, "I'll just have to bring mine from home." The next Monday Rick walked through the office carrying his computer. Several of the other managers looked at him quizzically. Making light of it he said, "I'm not smart enough to keep everything in my head and I do not have enough time to write it all down on paper." As he was setting up the computer he got a call from Val. "Rick, that computer you brought in has caused a heck of a ruckus. Can you lie low with it until I get back late this afternoon?" Rick thought Val sounded strained but chalked it up to overwork.

Rick agreed and left the computer on his desk, partly assembled. Five minutes later, Rosie walked into his office.

"Do you think it's funny bringing that thing in here? What are you trying to prove—how backward we all are? How much better you are with your big initials behind your name? You're still an outsider here, buster, and do not forget it."

Rick tried to explain how much more productive the sales department would be and that he had tried to use the company's computer system. However, Rosie was not listening. "Did you think about checking with me before bringing that in? With Val or even Walter? Do you not think we have a right to know what you're bringing in here?" Rick knew argument would do no good, so he apologized for not checking with everyone first. He said he had a meeting with Val for later to talk about it. Rosie said, "Good, talk to Val, but do not think he calls all the shots here."

At the meeting with Val, Val agreed that the computer would certainly help solve the problems in sales. "But, you have to be sensitive to the feelings of Rosie and the other managers. It would be best if you did not use the computer for a while until things calm down."

The next day Walter walked into Rick's office. He told Rick he had moved far too fast with the computer. "That's not how it's done here, son. Maybe you're spending too much time listening to what Val says. He isn't really the one to talk to about these kinds of issues. Next time you just ask old Uncle Walter."

Without his computer, Rick spent the next few weeks building the database by hand and conducting sales meetings with his staff. He tried to set up meetings with Mr. Peterson, but Val was usually too busy. One day, Rick asked Diane Able about not being able to see Mr. Peterson and she said, "You know, you monopolized a lot of his time early on. Those of us who worked closely with him before you came were pushed aside so he could spend time with you. Now, it's your turn to wait."

"Are you the one who's been spending all the time with him?" Rick asked.

"Well, it's been me and some of the other managers. We've really been taking a beating in sales, so we need to figure out how to reduce our costs," Ms. Able answered.

A few weeks later, Rick was called in to Val's office. Val began, "Rick, you know we've been going through some bad times. We're reducing head count and I'm afraid you're one of the people we're going to let go. It has nothing to do with your work. You haven't really been here long enough to have either succeeded or failed. It's just that we had unrealistic expectations about how quickly things in sales would turn around. I feel terrible having to do this and I'll do everything I can to help you find another job."

After packing his things and loading up the car, Rick sat in his car and stared out the window. "Welcome to the real world," he thought to himself.

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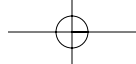
Case Questions

1. Why do you think Rick was let go? How does re-inforcement theory apply to this situation?

2. Explain Rosie and Walter's reaction to Rick's computer in terms of resistance to change. How might Rick have used the concepts in this chapter to approach the computer situation so as to gain acceptance?

3. Explain Rick's inability to "fit in" using social learning theory. Where did the breakdowns occur?

4. If Val hired you to develop a management training program for the senior managers at PPP, how would you go about designing the program? Provide appropriate theoretical rationale to support your position.