TABLE 5.1
Transfer of Training Theories

Theory	Emphasis	Appropriate Conditions	Type of Transfer
Identical Elements	Training environment is identical to work environment.	Work environment features are predictable and stable. *Example:* training to use equipment.	Near
Stimulus Generalization	General principles are applicable to many different work situations.	Work environment is unpredictable and highly variable. *Example:* training in interpersonal skills.	Far
Cognitive Theory	Meaningful material and coding schemes enhance storage and recall of training content.	All types of training and environments.	Near and far

Theory of Identical Elements

The **theory of identical elements** proposes that transfer of training occurs when what is being learned in the training session is identical to what the trainee has to perform on the job.[5] Transfer will be maximized to the degree that the tasks, materials, equipment, and other characteristics of the learning environment are similar to those encountered in the work environment.

The use of identical elements theory is shown in the hostage training simulation used by the Baltimore Police Department. The Baltimore Police Department needed to teach police sergeants the skills to handle hostage-barricade situations in which lives are at stake—skills such as negotiating with a troubled husband holding his wife and/or children hostage. The first hour of a hostage situation is critical. The sergeant must quickly organize resources to achieve a successful end to the situation with minimal or no injuries. A simulation was chosen because it provides a model of reality, a mock-up of a real situation without the danger. Multiple scenarios can be incorporated into the simulation, allowing the sergeants to practice the exact skills they will need when faced with a hostage crisis.

The simulation begins by having the trainees briefed on the hostage situation. Then they are directed to take charge of resolving the incident in the presence of an instructor who has personally been involved in similar real-life incidents. Each trainee supervises one difficult and one easy scenario. The simulation is designed to emphasize the importance of clear thinking and decision making in a situation in which time is critical. It is essential that the trainees take actions according to a set of priorities. These priorities place the greatest value on minimizing the risks to the hostages and isolating suspects before communicating with them. The simulation scenarios include elements of many actual hostage incidents such as forced entry, taking persons against their will, the presence of a weapon, and threats. As trainees work in the simulation, their actions are evaluated by the instructor. The instructor provides feedback to the trainees in writing after they complete the simulation or the instructor can correct mistakes as they happen.

The training simulation mirrors the exact circumstances of actual hostage situations encountered by police officers. Also, the checklist of activities and behaviors that the sergeants are provided with in training is the exact checklist used in hostage situations that occur on the street. Evidence of generalization is provided by police sergeants who have successfully dealt with a bank-hostage situation by using the skills emphasized in the simulation. The Baltimore Police Department is also concerned with maintenance. At the conclusion of the simulation, officers may be able to demonstrate how to successfully free hostages. However, the incidence of hostage situations is fairly low compared to other tasks that police officers perform (e.g., issuing traffic citations, investigating burglaries). As a result, the police department is concerned that officers may forget what they learned in training and therefore have difficulties in hostage situations. To ensure that officers have opportunities to practice these infrequently used but important skills, the training department occasionally schedules mock hostage situations.[6]

Another application of the theory of identical elements is found in the use of simulators for training airline pilots. Pilots are trained in a simulator that looks exactly like the cockpit of a commercial aircraft. All aspects of the cockpit in the simulator (e.g., gauges, dials, lights) are the same as in a real aircraft. In psychological terms, the learning environment has complete fidelity with the work environment. **Fidelity** refers to the extent to which the training environment is similar to the work environment. If skills in flying, taking off, landing, and dealing with emergency situations are learned in the simulator, they will be transferred to the work setting (commercial aircraft).

The identical elements approach has also been used to develop instruments designed to measure the similarity of jobs.[7] Job similarity can be used as one measure of the extent to which training in the knowledge and skills required for one job prepares an employee to perform a different job.

The theory of identical elements has been applied to many training programs, particularly those that deal with the use of equipment or that involve specific procedures that must be learned. Identical elements theory is particularly relevant in making sure that near transfer occurs. **Near transfer** refers to trainees' ability to apply learned capabilities exactly to the work situation. Programs that emphasize near transfer should include the following training designs:[8]

- The program should teach specific concepts and procedures.
- Trainees should be given an explanation as to any differences between training tasks and work tasks.
- Trainees should be encouraged to focus only on important differences between training tasks and work tasks (e.g., speed of completion) rather than unimportant differences (e.g., equipment with the same features but a different model).
- Behaviors or skills that trainees learn in the program should contribute to effective performance.

For example, in police officer training, new hires (cadets) practice shooting targets. During practice sessions, cadets fire a round of shells, empty the cartridges into their hands, and dispose of the empty cartridges into the nearest garbage can. This process is repeated several times. After graduation from the police academy, one new officer was involved in a shooting. He fired his gun, emptied the cartridges into his hand, and proceeded to look for a garbage can for the empty cartridges. As a result, he was seen by the gunman, shot, and killed!

Identical elements theory does not encourage transfer where the learning environment and the training environment are not necessarily identical. This situation arises particularly in interpersonal skills training. For example, a person's behavior in a conflict situation is not easily predictable. Therefore, trainees must learn general principles of conflict resolution that they can apply to a wide variety of situations as the circumstances dictate (e.g., an irate customer versus a customer who lacks product knowledge).

Stimulus Generalization Approach

The **stimulus generalization approach** suggests that the way to understand the transfer of training issue is to construct training so that the most important features or general principles are emphasized. It is also important to identify the range of work situations in which these general principles can be applied. The stimulus generalization approach emphasizes far transfer. **Far transfer** refers to the trainee's ability to apply learned capabilities to the work environment, even though the work environment (equipment, problems, tasks) is not identical to that of the training session. Programs that emphasize far transfer should include the following training designs:[9]

- The program should teach general concepts and broad principles.
- Trainees should be made aware of examples from their experiences that are similar to those emphasized in training so that connections can be made among strategies that have been effective in different situations.
- The program should emphasize that the general principles might be applied to a greater set of contexts than those presented in the training setting.

The stimulus generalization approach can be seen in the design of managerial skill training programs, known as behavior modeling training, which are based on social learning theory. Recall from the discussion of social learning theory in Chapter 4 that modeling, practice, feedback, and reinforcement play key roles in learning. One step in developing behavior modeling programs is to identify key behaviors that are needed to be successful in a situation. **Key behaviors** refer to a set of behaviors that can be used successfully in a wide variety of situations. The model demonstrates these key behaviors on a video, and trainees have opportunities to practice the behaviors. In behavior modeling training, the key behaviors are believed to be applicable to a wide variety of situations. In fact, the practice sessions in behavior modeling training require the trainee to use the behaviors in a variety of situations that are not identical.

Cognitive Theory of Transfer

The cognitive theory of transfer is based on the information processing theory of learning discussed in Chapter 4. Recall that the storage and retrieval of information are key aspects of this model of learning. According to the **cognitive theory of transfer,** the likelihood of transfer depends on the trainees' ability to retrieve learned capabilities. This theory suggests that the likelihood of transfer is increased by providing trainees with meaningful material that enhances the chances that they will link what they encounter in the work environment to the learned capability. Also important is providing the trainee with cognitive strategies for coding the learned capabilities in memory so that they are easily retrievable. (These strategies were discussed in Chapter 4.)

The influence of cognitive theory is seen in training design that encourages trainees, as part of the program, to consider potential applications of the training content to their