Opening Case

THE LEARNING VOYAGES

For Raghunath Mashelkar, former Director General of the Council of Scientific and Industrial Research (CSIR), it has been long and tedious learning voyage.

Having lost his father at the age of six, Mashelkar worked on a casual basis in shops, providing sundry help. His barely literate mother, Anjanitai Mashelkar, brought up her son with great courage and determination. The hunger for education was planted in him by her. She drove Mashelkar forward at decisive moments in his life, when he could have easily succumbed to the overwhelming odds and given up.

Mashelkar and his mother lived in a one room tenement in a chawl in Deshmukh Galli, Khetwadi in Mumbai's Girgaum area. Young Mashelkar was a consistent topper in his Marathi-medium school. When he needed ₹ 21 as entrance fee to enter senior school, Anjanitai borrowed it from a friend who, like her, was doing odd jobs in nearby households. Mashelkar recalls, "When we had weekly tests in schools on Saturdays, we had to carry our own answer paper, which cost three paise. One had to always wonder where that money would come from the next week". For this reason, he almost gave up his studies at the eleventh standard. Just then the Gomanthak Maratha Samaj came to his assistance with a modest scholarship.

Unable to have either privacy or space in the chawl, Mashelkar studied for his Secondary School Certificate (SSC) examination under the streetlights at Chowpatty, just as Bal Gangadhar Tilak had done.

His excellent grades led well-wishers to offer him the ₹ 200 needed for college admission. He was also selected by the Sir Dorab Tata Trust for their prestigious scholarship. When he finished his bachelors in chemistry with flying colours and wanted to take up a job to ease the financial situation at home, his mother asked him a simple question: "What is the next degree in this subject?" Mashelkar thus started and completed one of the fastest ever doctorates in chemical engineering.

After his Ph.D., his mother encouraged him to go abroad and excel in his chosen field. There followed an illustrious career at the University of Salford, UK, where he established a first-rate group in polymer engineering and carried out pioneering work in the field. The desire to climb the educational ladder was nursed by the barely literate Anjanitai. He says, "I owe it all to the supreme sacrifice and vision of my mother who, by doing odd jobs, nurtured me and motivated me to keep studying". Mashelkar recalls that when someone asked his mother why she wanted her son to get educated, she simply said, "If he had not been educated, he would have been forced to do menial jobs, like I was. I did not want that to happen."[1]

Learning has made Mashelkar what he is today. This chapter is devoted for a detailed discussion of the nature, theories, principles and other related aspects of learning.

Learning is powerful incentive for many employees to stick to certain organisations. It is not uncommon to listen employees speaking: "We stay here not very much for pay cheques, but we keep learning". Learning has significant impact on individual behaviour as it influences abilities, role perceptions, and motivation. Along with its role in individual behaviour, learning is essential for knowledge management. Knowledge management enhances an organisation's capacity to acquire, share, and utilise knowledge in ways that improve its survival and success.

In today's fast-changing world, employee who works is periodically required to learn new knowledge and skills. This is dramatically apparent from the mushrooming uses of the Internet, as it changes the ways people perform routine functions and discover new ways of obtaining and acting on information. (Read Exhibit 9.1 for an illustration of how women are learning through the net).

Key Term: *Learning*: Learning is understood as permanent change in behaviour resulting from experience. Three things need underlining when one speaks of learning. First, learning involves change. Second, change is relatively permanent. Third, change in behaviour comes from experience, practice or training. Stretching its meaning further, learning is involved in a broad range of organisational behaviours, ranging from developing new vocational skills, through changing the ways people do their jobs, through managing them in ways that foster increased productivity.

EXHIBIT 9.1 WOMEN AND THE INTERNET

As early as the Christmas season 1998, shopping on the Internet for female sports equipment was nearly an exercise in futility. And for those wanting to build Net sites to cater to women venture capitalists (VCs), predominantly male, were skeptical. Recalls Varsha Rao, who made the rounds of VCs in autumn 1998 seeking start-up capital for a proposed beauty site, Eve.com "They'd say, 'There aren't many women on the Net".

By 2000, Internet usage based on gender was about fifty-fifty. The upsurge in Net usage by women left budding entrepreneurs and venture capitalists wondering: what are wired women looking for? The emerging answer: time, information, community, and horoscopes. Candice Carpenter, co-founder of iVillage.com saw in the Web a chance for women to more easily juggle the demanding roles of mom-to "turbo charge women's choices".

In studying women's online usage, researchers at women.com learned that the Internet was truly changing the way women managed their lives. Says senior vice-president of marketing Anna Zornosa, "The one thing common to all women was that they viewed each session as a search-and-destroy mission. They'd come online with a list of five to twelve things they wanted to get accomplished, ranging from 'How do I move my IRA?' to 'My child has this rash'— activities that expressed the range of their entire lives. This medium was built for the modern woman."

One illustrative niche for web applications is women's involvement in sports and athletics. In the $34 billion sports apparel market, 73 per cent of purchases are made by women; and in the $15 billion athletic footwear business, women purchase 53 per cent according to the Sporting Goods Manufacturer's Association. Being women friendly on the Web is critical. But it is not just pushing products, but rather providing relevant informational content that builds loyalty. "You have to build a community of visitor to your site", says Daniel Kron, founder and creative director of Sports for Women.com. This site contains 34 specific news content areas updated daily. Kron continues, "You build a brand, and once you have brand loyalty, customers will shop on your site and you can be profitable in e-commerce". Both providers of Web content and users are learning to navigate this vast frontier.

(***Source:*** Curtis W. Cook and Phillip L. Hunsaker, *Management and Organisational Behaviour*, p. 170.).

Meaning and Definition

Simply told, learning is understood as the modification of behaviour through practice, training, or experience. This simple meaning needs to be supplemented with five important components of learning so as to make its import clear.

First, learning involves change, although the change may be for good or bad from an organisation's point of view. The change may not be evident until a situation arises in which the new behaviour can occur. Learning is not always reflected in performance.

Second, not all changes reflect learning. To constitute learning, change should be relatively permanent. Temporary changes may be only reflective and fail to represent any learning. This requirement, therefore, rules out behavioural changes caused by fatigue or drugs.

Third, learning is reflected in behaviour. A change in an individual's thought process or attitudes, not accompanied by behaviour, is no learning. It should be further clarified that learning needs to result in behaviour potentiality and not necessarily in the behaviour itself. The reason for this

Key Term: *Implicit Knowledge:* Also known as tacit knowledge, this refers to the knowledge that can be inferred from the actions of an individual but cannot be communicated directly by him or her. Tacit knowledge is within an individual and is not documented. Organisation loses the valuable knowledge when the person exits.

distinction lies in the fact that an individual may learn but owing to lack of motivation, may not exhibit any changed behaviour.

Fourth, the change in behaviour should occur as a result of experience, practice, or training. This implies that behaviour caused from maturity, disease, or physical damages does not constitute learning.

Fifth, the practice or experience must be reinforced in order for learning to occur. If reinforcement does not accompany the practice or experience, the behaviour will eventually disappear.

The last, though not implied in any standard definition of learning that, contrary to popular belief, learning is not confined to one's schooling. Learning occurs throughout one's life.

Three definitions which contain the above five important components of learning are:

- *"Learning may be defined as a relatively permanent change in behaviour that occurs as a result of prior experience."*[2]
- *"Generally, it (learning) is described as the process of having one's behaviour modified, more or less permanently, by what he does and the consequences of his action, or by what he observes."*[3]
- *"Learning can be defined as relatively permanent change in behaviour potentiality that results from reinforced practice or experience."*[4]

Learning — Explicit and Tacit Knowledge (or implicit knowledge)

When employees learn, they acquire both explicit and tacit knowledge. Explicit knowledge is organised and can be communicated from one person to another. The information a student receives in a classroom is mainly an explicit knowledge because the professor packages and consciously transfers it to the students. Explicit knowledge can be written down and given to others. However, explicit knowledge is only a small portion of the total knowledge.

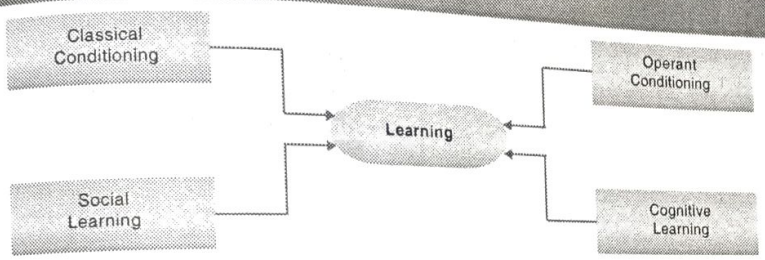
Majority of the people have tacit or implied knowledge. Tacit knowledge is the idea that one knows more than what he or she can tell. Implied knowledge is embedded in our actions and ways of thinking, but is not clearly understood and therefore cannot be communicated explicitly. The knowledge and skills one wants to give others are not sufficiently articulated, so they cannot be communicated through verbal messages. Further, since implicit knowledge is not documented, it is quickly lost when employees leave the organisation.

Tacit knowledge is acquired through observation and direct experience. For instance, a truck driver does not learn how to operate the vehicle through lectures. He masters the necessary skills by watching the subtle details as others perform the tasks, and by directly experiencing this complex interaction of behaviour with machine's response. Similarly, organisations acquire tacit knowledge when employees experiment with new technologies or work on unique problems for clients. Most knowledge in organisations is tacit and one of the challenges in knowledge management is to make implicit knowledge explicit so that it may be stored and shared more easily.[5]

How Learning Occurs?

There are four theories which explain how learning occurs. They are: (i) Classical conditioning, (ii) Operant conditioning, (iii) Cognitive theory, and (iv) Social Learning theory. (See Fig. 9.1)

FIGURE 9-1
THEORIES OF LEARNING



Classical Conditioning

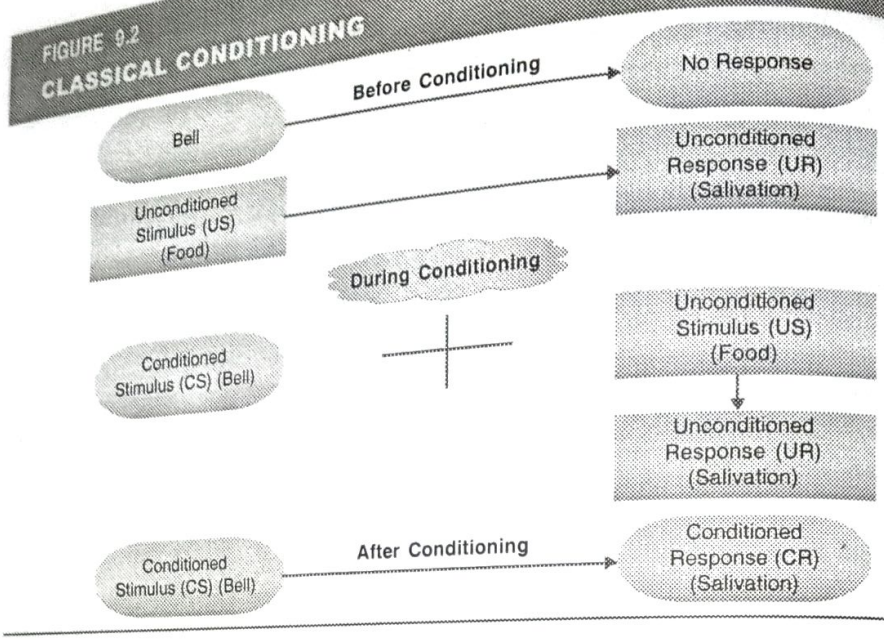
Classical conditioning is based on the premise that a physical event — termed as a stimulus — that initially does not elicit a particular response gradually acquires the capacity to elicit that response as a result of repeated pairing with a stimulus that can elicit a reaction. Learning of this type is quite common and seems to play an important role in such reactions as strong fears, taste aversions, some aspects of sexual behaviour, and even racial or ethnic prejudice.[6] Classical conditioning became the subject of careful study in the early 20th century, when Ivan Pavlov, a Nobel prize-winning psychologist from Russia, identified it as an important behavioural process.

Pavlov conducted an experiment on a dog and tried to relate the dog's salivation and the ringing of a bell. A simple surgical procedure allowed him to measure accurately the amount of saliva secreted by the dog. When Pavlov presented the dog with a piece of meat, the dog exhibited a noticeable increase in salivation. When he withheld the presentation of meat and merely rang a bell, the dog has no salivation. Then Pavlov proceeded to link the meat and the ringing of the bell. After repeatedly hearing the bell before getting the food, the dog began to salivate as soon as the bell rang. After a while, the dog would salivate merely at the sound of the bell, even if no food was offered. In effect, the dog has learnt to respond (salivate) to the bell.

From the brief description given above, certain key concepts of classical conditioning can now be introduced. Salivation in response to food is a natural, unlearned response — in short, a reflex. This response was called the *unconditioned reflex*. The food, because it elicited the unconditioned reflex automatically, was called the *unconditioned stimulus*. When Pavlov's repeated presentation of the bell followed by food led the dog to salivate in response to the bell alone, this salivation was designed as *conditioned reflex*, which emphasised that arousal of the reflex was dependent upon a stimulus, as the *conditional stimulus*. Thus, the concepts central to classical conditioning are unconditioned stimulus (US), unconditioned response (UR), conditioned stimulus (CS), and conditioned response (CR).

Key Term: *Classical Conditioning:* This concept is associated with the well-known Russian psychologist — Ivan Pavlov — who also won Nobel Prize in 1904. Classical conditioning is based on the premise that a physical event — termed stimulus — that initially does not elicit a particular response gradually acquires such a capacity as a result of repeated pairing with a stimulus that can elicit a reaction.

FIGURE 9.2
CLASSICAL CONDITIONING



The relationship among these components of classical conditioning is shown in Figure 9.2. The essential feature of this process is that a previously neutral stimulus acquires the capacity to elicit a certain response, which is then called a conditioned response.

In an organisational setting, we can see classical conditioning operating. For example, at one manufacturing plant, every time the top executives from the head office would make a visit, the plant management would clean up the administrative offices and wash the windows. This went on for years. Eventually, employees would turn on their best behaviour and look prim and proper whenever the windows were cleaned even in those occasions when the cleaning was not paired with the visit from the top brass. People had learnt to associate the cleaning of the windows with the visit from the head office.

Example of classical conditioning

Classical conditioning is best observed in the police department, particularly in police personnel regulating traffic in a city. Every circle will be manned with inspectors, sub-inspectors or constables to control movement of vehicles and pedestrians. During peak hours, an Asst. Commissioner of Police (ACP), who is in overall control of traffic, goes round the city and monitors the way the traffic is being regulated. It is the practice of the personnel under the ACP, to salute whenever he passes by in his vehicle. The police at the circles are so used to saluting their boss, that they do so even when only the vehicle passes without the ACP being seated inside.

Despite the theoretical possibility of the widespread applicability of classical conditioning, most modern theorists agree that it represents only a very small part of total human learning. Skinner, in particular, felt that classical conditioning explains only respondent (reflexing) behaviours. These are the involuntary responses that are elicited by a stimulus. Skinner felt that the more complex human behaviours cannot be explained by classical conditioning alone. He felt that most human behaviour affects, or operates on, the environment. The latter type of behaviour is learnt through operant conditioning.

Key Term: *Operant Conditioning:* Operant conditioning posits that our behaviour produces certain consequences and the same outcomes determine behaviour in future. If our actions have pleasant effects, then we tend to repeat them in future. Negative consequences will discourage repetition of actions. Operant conditioning is also called instrumental conditioning.

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Operant Conditioning

Operant conditioning, also called instrumental conditioning, refers to the process that our behaviour produces certain consequences and how we behave in the future will depend on what those consequences are. If our actions have pleasant effects, then we will be more likely to repeat them in the future. If, however, our actions have unpleasant effects, we are less likely to repeat them in the future. Thus, according to this theory, behaviour is the function of its consequences.

Operant conditioning emphasises voluntary behaviours. Researchers call them "operant behaviour" because they operate on the environment (hence the term operant) — they make the environment respond in ways that we want. For example, you insert a coin in a coffee vending machine and press a certain button so that the machine will offer a cup of coffee. You learnt from past experience how to cause the environment (the machine) to deliver a cup of coffee.(See also Table 9.1 for more such rewards). Examples of application of operant conditioning in organisational settings are many. (Read Exhibit 9.2 for two such influences).

TABLE 9.1
OPERANT BEHAVIOURS AND THEIR CONSEQUENCES

1	*2*	*3*
	Works	Is paid
	Talks to others	Meets more people
The Individual	Enters a restaurant	Obtains food
	Enters a library	Finds a book
	Increases productivity	Receives merit pay
	Completes a difficult assignment	Receives praise and promotion.

EXHIBIT 9.2 **OPERANT CONDITIONING IN ORGANISATIONS**

An executive is asked to speak at a board meeting. The stimulus is the request to speak, and the executive responds by giving certain views on matters within his or her area of responsibility. The executive's response may be reinforced by nods and smiles from a prominent director, and the effect or the reinforcement increases the likelihood that the executive will respond with the same or similar views of future meetings.

In another situation, a safety practitioner on an inspection in a factory is impressed by the system of control relating to potential hazards. He or she provides reinforcement by praising those responsible and writing in favourable terms about this experience in the company newsletter.

(**Source:** Eugene McKenna, *Business Psychology and Organisational Behaviour,* p. 186).

Operant conditioning has a much greater impact on human learning. It also explains much of OB. For example, it might be said employees work eight hours a day, six days a week, in order to feed, clothe and shelter themselves and their families. Working is instrumental only in obtaining food, clothing, and shelter. Some significant insights can be gained directly from this kind of analysis. The consequences of OB can change the environmental situation and greatly affect subsequently employee behaviours. Managers can analyse the consequences of OB to help accomplish the goals of prediction and control.

Difference between Classical Conditioning and Operant Conditioning

There are two vital differences between classical conditioning and operant conditioning. The *first* point of difference relates to the type of response. In classical conditioning, a specific stimulus, such as food, is used to elicit a specific response. The response is *elicited*. In operant conditioning, the response is not elicited by controlled stimulation but rather is spontaneously emitted by the subject. The precise stimuli producing the response at the beginning of the learning period cannot be identified. Hence, it might be said that the emphasis in classical conditioning is upon involuntary responses, while the emphasis in operant conditioning is upon voluntary responses.

The *second* difference relates to the consequences of response. In the operant procedure, as its name implies, the subject's response operates on the environment to achieve some result, such as access to food or water, recognition by others, escape from pain or discomfort, or some other desirable circumstances. In classical conditioning, the organism's behaviour is not instrumental in achieving any such result, the organism is unable to change the events of the experiment by its behaviour. Thus, food is presented or not presented in accordance with the design of the experiment — the subject's behaviour does not influence the occurrence of these events. Then there are other less important differences also.

Table 9.2 brings out the differences between classical conditioning and operant conditioning more clearly.

TABLE 9.2

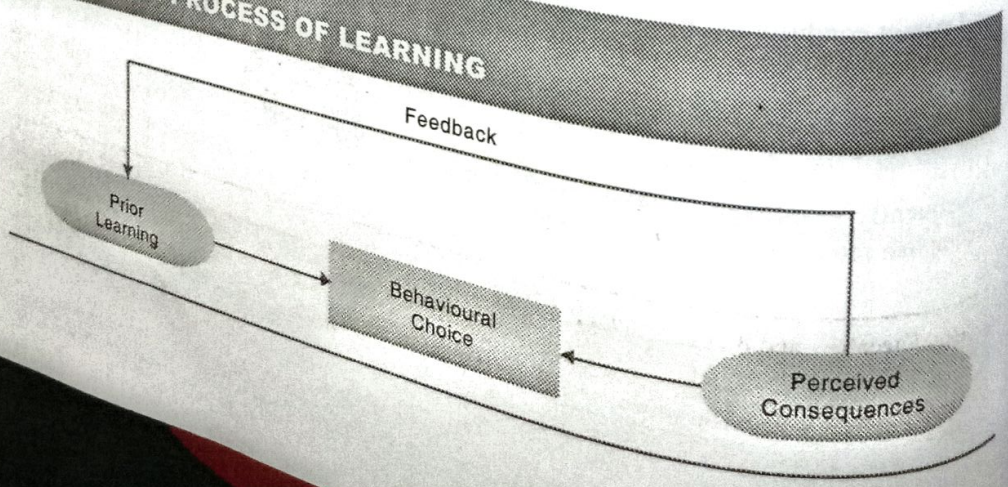
DIFFERENCES BETWEEN CLASSICAL CONDITIONING AND OPERANT CONDITIONING

Classical Conditioning	*Operant Conditioning*
1. Responses are elicited from a person (reactive).	1. Responses are emitted by a person (proactive).
2. Responses are fixed to stimulus (no choice).	2. Responses are variable in types and degrees (choice).
3. CS is stimulus such as sound, an object, a person.	3. CS is a situation such as office, a social setting, a specific set of circumstances.
4. Reinforcement is not received by choice.	4. Person is instrumental in securing reinforcement by "operating" on the environment.

Cognitive Theory of Learning

Contemporary perspective about learning is that it is a cognitive process. Cognitive process assumes that people are conscious, active participants in how they learn. Cognitive theory of learning assumes that the organism learns the meaning of various objects and events and learned responses depending on the meaning assigned to stimuli. Fig. 9.3 illustrates some underpinnings of the cognitive view of learning.[7]

FIGURE 9.3
COGNITIVE PROCESS OF LEARNING



First, in the cognitive view, people draw on their experiences and use past learning as a basis for present behaviour. These experiences represent presumed knowledge or cognitions. For examples, an employee faced with a choice of job assignment will use previous experiences in deciding which one to accept. Second, people make choices about their behaviour. The employee recognises his or her two alternatives and chooses one. Third, people recognise the consequences of their choices. Thus, when the employee finds the job assignments rewarding and fulfilling, he or she will recognise that the choice was a good one and will understand why. Finally, people evaluate those consequences and add them to prior learning, which affects future choices. Faced with the same job choices next year, the employee very likely will choose the same one.

The cognitive theory of learning is relevant in the contemporary managerial practices. Many motivation theories centre around the concept of cognition. Expectations, attributions, and locus of control (which are in the forefront of work motivation) are all cognitive concepts requiring attention while motivating employees.

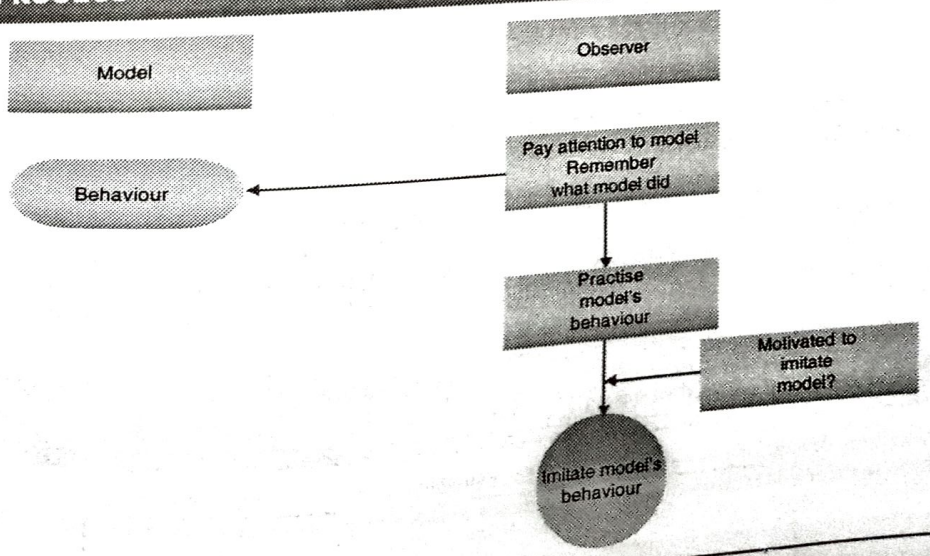
Social Learning Theory

Also called *observational* learning, social learning theory, emphasises the ability of an individual to learn by observing others. The important models may include parents (See opening case), teachers, peers, motion pictures, TV artists, bosses and others.

An individual acquires new knowledge by observing what happens to his or her model. This is popularly known as *vicarious* learning. A learner acquires tacit knowledge and skills through vicarious learning.

Observational learning involves several processes as shown in Fig. 9.4.

FIGURE 9.4
PROCESS OF OBSERVATIONAL LEARNING



(*Source:* Greenberg and Baron, *op. cit.*, p. 67).

To start with, the learner must pay *attention* to the model — the greater the attention, the more effective the learning will be. Second, the observer must have good *retention* of the model's behaviour. Remembering helps develop a verbal description or mental image of someone's actions in order to remember them. Third, observers must *practise* model's behaviour. Unless, the learner is capable of doing exactly what the model does, he or she will not be able to learn from observing peer, teacher or parent. Finally, the observer must have some *motivation* to learn from the model. One does not emulate every behaviour he or she sees, but focuses on that he or she has reason or incentive to match — such as, an action for which the model is rewarded.[8]

Social learning has considerable relevance in OB. A great deal of what is learned about how to behave in organisations can be explained as the result of the process of observational learning. A new hire acquires job skills by observing what an experienced employee does. Observational learning also occurs in a very informal, unarticulated manner. For instance, people who experience the norms and traditions of their organisations and who subsequently incorporate these into their own behaviour may be recognised as having learnt through observation.

Social learning is also valuable because it enhances the *self-efficacy* of the learner. Self-efficacy refers to a person's belief that he or she has the ability, motivation, and situational contingencies to complete a task successfully. People strong in self-efficacy have a 'can do' attitude towards a specific task and, more generally, with other challenges in life.[9]

Social learning increases self-efficacy because people gain self-confidence after observing some one else do it than if they are simply told what to do. This is particularly true when observers identify with the model, such as someone who is similar in age, experience, gender, and related features.

Yet another benefit from observational learning is that it enables employees to *shape* behaviours that benefit the organisation. Shaping is based on the principle that a little can eventually go a long way. Subjects receive a reward for each small step towards a final goal — the target response — rather than only for final response. Initially, actions even remotedly resembling the target behaviour-termed *successive approximations* are followed by a reward. Gradually, closer and closer approximations of the final target behaviour are required before the reward is given. An example substantiates the shaping principle more clearly. When a baby suddenly blurts out the sound "Mmmmuuh" the parents are ecstatic: They immediately lavish attention and affection on the child and do so each time the baby repeats the sound. Although initially the parents respond enthusiastically to any sound the child makes, gradually they respond only to sound approximate actual words. Shaping, therefore helps organisms acquire or construct new and more complex forms of behaviour from simple behaviour.[10]

Managers can shape employee behaviour by systematically reinforcing each successive steps that moves the individual closer to the desired response. If an employee, for example, who has been chronically a half-hour late for work comes in only twenty minutes late, the boss can reinforce that improvement. Reinforcement would increase as responses more closely approximate the desired behaviour.

Principles of Learning

Principles of learning are highly useful for trainer in order to impart maximum knowledge and skills to the trainees. However, blind adherence to these principles can cause more harm than good.

Key Term: *Self-efficacy*: This refers to a person's belief that he or she has the ability, motivation, and situational contingencies to complete a task successfully. People strong in self-efficacy have a 'can do' attitude towards tasks.

Each principle should, therefore, be interpreted and applied carefully in full consideration of the particular task being learned and the context in which the learning takes place.[11] Principles of learning are many but the most important of them are: motivation, reinforcement, whole versus part learning, learning curves, meaningfulness of material and learning styles.

Motivation

The concept of motivation is basic because, without motivation learning does not take place or, at least, is not discernible. Motivation may be seen at different levels of complexity of a situation. A thirsty rat will learn the path through a maze to a dish of water; it is not likely to do so well, or even more purposefully at all, if it is satiated. On a broader level, a college student must have the need and drive to accomplish a task and reach a specific goal.[12]

Reinforcement, Punishment and Extinction

Reinforcement, punishment and extinction play a key role in learning process. Reinforcement is used to enhance desirable behaviour, punishment and extinction are employed to minimise undesirable behaviour.

Reinforcement: Reinforcement is the attempt to develop or strengthen desirable behaviour. There are two types of reinforcement: positive reinforcement and negative reinforcement.

Positive reinforcement strengthens and enhances behaviour by the presentation of positive reinforcers. There are primary reinforcers and secondary reinforcers. **Primary reinforcers** satisfy basic biological needs and include food, water, and sexual pleasure. However, primary reinforcers do not always reinforce. For example, food may not be a reinforcer to someone who has just completed a five course meal. Most behaviours in organisations are influenced by **secondary reinforcers.** These include such benefits as money, status, grades, trophies, and praise from others. These become positive reinforcers because of their association with the primary reinforcers and hence are often called **conditioned reinforcers.**

It should be noted that an event that functions as a positive reinforcer at one time or in one context may have a different effect at another time or in another place. For example, food may serve as a positive reinforcer for a person who is hungry, but not when the person, as stated above, has already a large meal. Clearly, a stimulus that functions as a positive reinforcer for one person may fail to operate in a similar manner for another person.[13]

Within itself, positive reinforcement has several principles.

- *The principle of contingent reinforcement* states that the reinforcer must be administered only if the desired behaviour has occurred. A reinforcer administered when the desired behaviour has not been performed becomes ineffective.
- *The principle of immediate reinforcement* states that the reinforcer will be most effective if administered immediately after the desired behaviour has occurred. The more time that elapses after the behaviour occurs, the less effective the reinforcer will be.
- *The principle of reinforcement size* states that the larger the amount of reinforcement delivered after the desired behaviour, the more effect the reinforcer will have on the frequency of the desired behaviour. The amount, or size, of reinforcer is relative. A reinforcer that may be insignificant to one person may be significant to another person. Thus, the size of the reinforcer must be determined in relation to both the behaviour and the individual.

Key Term: *Successive Approximations.* These represent series of small steps leading to the final goal. Each small step is rewarded and not just the goal achievement.

- *The principles of reinforcement deprivation* states that the more a person is deprived of the reinforcer, the greater effect it will have on the future occurrence of the desired behaviour. However, if an individual recently has had enough of a reinforcer and is satisfied the reinforcer will have less effect.[14]

Negative Reinforcement: In negative reinforcement an unpleasant event that precedes a behaviour is removed when the desired behaviour occurs. This procedure increases the likelihood that the desired behaviour will occur.

Just as there are positive reinforcers, there are negative reinforcers as well. Negative reinforcers are the stimuli that strengthen responses that permit an organism to avoid or escape from their presence. Thus, when we perform an action that allows us to escape from a negative reinforcer that is already present or to avoid the threatened application of one, our tendency to perform this action in the future increases. Some negative reinforcers such as intense heat, extreme cold, or electric shock, exert their effects the first time they are encountered, whereas others acquire their impact through repeated association.[15]

We see negative reinforcement in organisations and in personal life. Supervisors apply negative reinforcement when they stop criticising employees whose poor performance has improved. By withholding the criticism, employees are more likely to repeat behaviours that enhance their performance. Negative reinforcement also occurs when parents give in to their children's tantrums — especially in public places, such as restaurants and shopping malls. Over time, the parent's tendency to give in may increase, because doing so stops screaming.

Thus, both positive and negative reinforcement are procedures that strengthen or increase behaviour. Positive reinforcement strengthens and increases behaviour by the presentation of desirable consequences. Negative reinforcement strengthens and increases behaviour by the threat of and the use of an undesirable consequence or the termination or withdrawal of an undesirable consequence.

Negative reinforcement is sometimes confused with punishment, because both use unpleasant stimuli to influence behaviour. However, negative reinforcement is used to increase the frequency of a desired behaviour, whereas punishment is used to decrease the frequency of an undesired behaviour.

Schedules of Reinforcement: Reinforcement, positive or negative, needs to be properly scheduled. Schedules of reinforcement determine when reinforcers are applied. Psychologists have identified several different schedules of reinforcement. For example, where reinforcement is administered uninterruptedly, it is called **continuous reinforcement.** Unlike animals performing tricks in a circus, people on the job are rarely reinforced continuously. Instead, in organisations, reinforces are administered following *partial* (or intermittent) *reinforcement* schedules. This means, that rewards are administered intermittently. Four varieties of partial reinforcement schedules have great relevance to organisations: fixed interval schedule, variable interval schedule, fixed ratio schedule, variable ratio schedule.

Fixed interval schedule: Fixed interval schedule means providing reinforcement on a predetermined, constant schedule. The first desired behaviour to occur after the interval has elapsed is reinforced. For example, in a fixed interval, 1 hour schedule, the first desired behaviour that occurs after an hour has elapsed is reinforced. Monthly pay cheque is one example of fixed interval reinforcement.

A fixed interval schedule tends to lead to average and irregular performance. It may result in fast extinction of behaviour too. For example, employees who know that their boss will pass by

Key Term: *Reinforcement:* It is the process by which a stimulus ... behaviour will be repeated. It is also an attempt to stre... preceding ...iour.

their desks everyday at 1 p.m. will make sure they are working hard at that time. However, without the boss around to praise them, they may take an early break for lunch, or otherwise work less hard because they know that they will not be positively reinforced for their efforts or punished for not working.

Variable Interval Schedule: Variable interval schedule also uses time as the basis for applying reinforcement, but it varies the intervals between reinforcements. Reverting to the example of the boss passing by employees desks. Suppose that instead of coming by at exactly 1 p.m. everyday, the boss visits at a different time each day: 9:30 a.m.on Monday, 2 p.m. on Tuesday, 11 a.m. on Wednesday, and so on. The following week, the times change. Because the employees do not know just when to expect the boss, they tend to work fairly hard until his or her visit. After the visit, the employees may drop back to lower levels because they know the boss will not visit till the next day. As in the fixed interval schedule, there is extinction of behaviour but the process is slow.

Fixed Ratio Schedule: In fixed ratio schedule, reinforcement is administered after the desired behaviours occur a specified number of times. Piece rating of wages is an example to be stated in this context.

A worker gets paid wages equal to the number of units produced multiplied by rate per unit. Similarly, a sales girl knows she will earn a bonus for each ₹ 25,000 worth of goods she sells. Immediately after receiving the first reward, performance may slack off. But as her sales begin to approach ₹ 50,000, the next level at which reward is expected, performance will once again improve. There is moderately fast extinction of behaviour too.

Variable Ratio Schedule: In this, a certain number of desired behaviours must occur before the reinforcer is delivered, but the number of behaviours varies around some average, as for example, reinforcement after 19, then 15, then 12, then 24, and then 17. This type of reinforcement schedule provokes most interest and is preferred by employees for some tasks. It tends to be the most powerful of all the reinforcement schedules.

An interesting fact is that slot machines and a number of other gambling devices operate on a variable ratio schedule. Most of the time when people put a coin into a slot they lose. But, after some unknown number of plays, the machine will pay-off. Because gamblers can never tell which pull of the handle will win the jackpot, they are likely to keep on playing for a long time. Obviously, this reinforcement leads to a very high performance. Extinction of behaviour is also very slow.

Comparison of Schedules: Table 9.3 summarises the four types of intermittent reinforcement schedules. Which is superior? The answer is ratio schedules — fixed or variable. The reason is that ratio schedules are more closely related to the occurrences of desired behaviours than are internal schedules, which are based on the passage of time.

Punishment: Punishment is the attempt to eliminate or weaken an undesirable behaviour. It is used in two ways. One way to punish a person is to apply a negative consequences called punishers — following an undesirable behaviour. For example, a professional athlete who is excessively offensive to an official (undesirable behaviour) may be ejected from a game (punished). The other way to punish a person is to withhold a positive consequence following an undesirable behaviour. For example, a sales representative who makes few visits to companies (undesirable behaviour) is likely to receive less commission (positive reinforcer) at the end of the month.

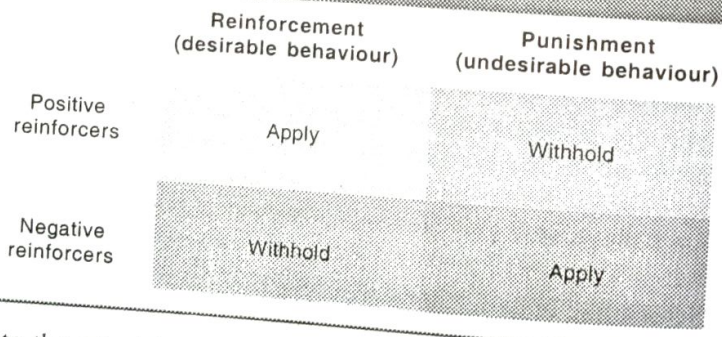
Fig. 9.5 shows how positive and negative reinforcers may be applied or withheld in reinforcement and punishment.

Key Term: ...imulus that decreases the probability that a previous behaviour will occur again. ...punishment is the attempt to eliminate or weaken an undesirable behaviour.

TABLE 9.3
COMPARISON OF SCHEDULES OF REINFORCEMENT

Schedules	*Description*	*Example*	*Influence on performance*	*Effect on behaviour*
Fixed interval	Reinforcers administered after a constant amount of time has elapsed	Pay cheque at the end of each month	Average and irregular performance	Fast extinction of behaviour
Variable interval	Reinforcers administered after a variable amount of time has elapsed	Boss passes by employees desks at different times on different days	Leads to moderately high and stable performance	Slow extinction of behaviour
Fixed ratio schedule	Reinforcers administered after a constant number of actions performed	Piece rating of wages or bonus for every given amount of sales.	Leads quickly to very high and stable performance	Moderately fast extinction of behaviour
Variable ratio schedule	Reinforcers administered after a variable number of actions performed	A slot machine pays a jackpot, on average, one time per million plays	Leads to very high performance	Very slow extinction of behaviour

FIGURE 9.5
REINFORCEMENT AND PUNISHMENT

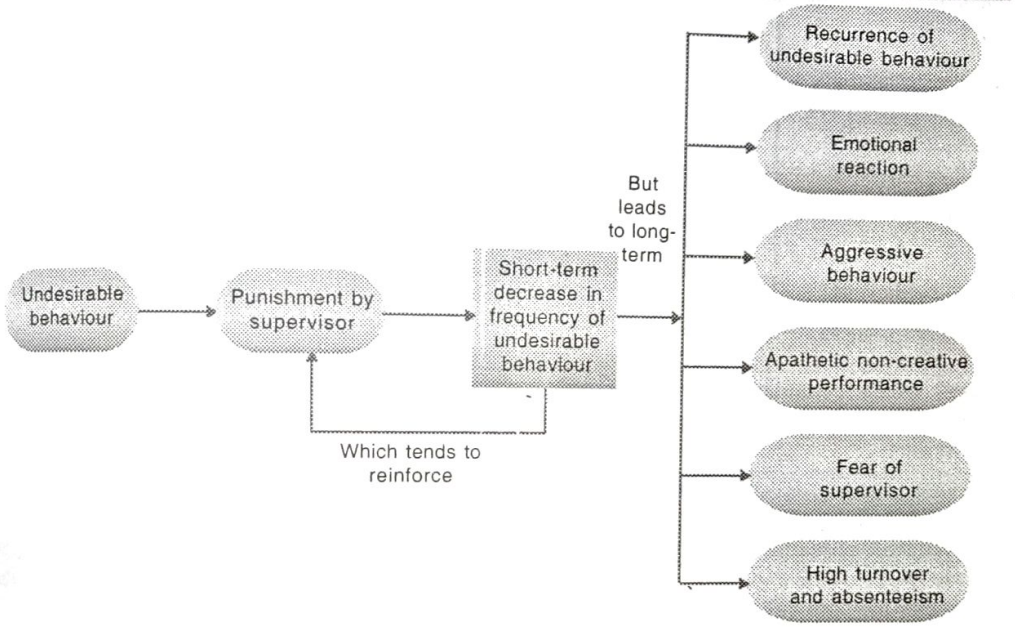


Reverting to the principles of punishment, it may be stated that punishment may end up in unintended results — mainly negative outcomes. Even though punishment may stop an undesirable behaviour of an employee, the potential negative outcomes may be greater than the cost of undesirable behaviour. Fig. 9.6 illustrates some potential negative effects of punishment. As shown in the figure, punishment tends to minimise undesirable behaviour. But if repeated, punishment may result in undesirable emotions, hostility towards boss, low performance, and even high turnover and absenteeism.

Extinction: An alternate to punishing undesirable behaviour is *extinction.* Extinction is the weakening of a behaviour by ignoring it or making sure it is not reinforced. The rationale for using extinction is that a behaviour not followed by any reinforcer is weakened. In other words, if rewards are withdrawn for behaviour that were previously reinforced, the behaviours probably will become less frequent and die out. But extinction needs time and patience to be effective.

Key Term: *Extinction:* It is the weakening of a behaviour by ignoring it or making sure it is not reinforced. The rationale for using extinction is that a behaviour not followed by any reinforcer is weakened.

FIGURE 9.6
NEGATIVE EFFECTS OF PUNISHMENT



(*Source:* Adapted from *Organisational Behaviour* by Don Hellriegel, *et. al.*, p. 113).

Whole Versus Part Learning

A great deal of work has been done in psychology of learning to decide whether learning a whole job is superior to breaking the job into parts and learning the parts. In parts learning, the individual is not only required to learn each individual part but must be able to combine the separate parts so that the whole performance can be accomplished. No overall conclusion, however, has been reached in this field.

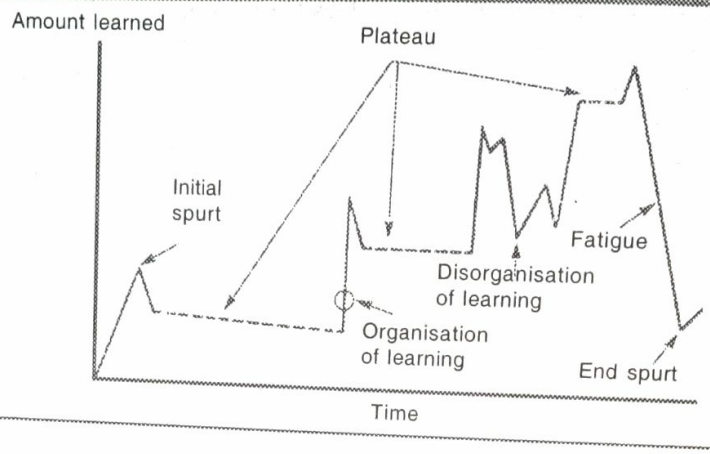
Learning Curves

A highly useful learning concept, which is valid for a wide range of situations, is the learning curve, a diagrammatic presentation of the amount learned in relation to time. A typical learning curve will show on the Y-axis the amount learnt and on the X-axis the passage of time. Fig. 9.7 represents a generalised learning curve, which shows the extent to which the rate of learning increases or decreases with practice.

Certain characteristics are common to all learning curves. One such feature is the initial *spurt.* At the beginning, it is natural that the rate of learning exhibits a spurt. Usually, the graph levels off at some stage, indicating that maximum performance has been achieved. Apparently at the beginning of the learning process, the subject is highly motivated and seems to exhibit a significant surge of effort. Many experienced trainers exploit this initial spurt by selecting the most important items to be communicated and presenting them as a package to the students at the beginning of the training

Key Term: *Learning Style:* The ability of an individual to learn.

FIGURE 9.7
GENERALISED LEARNING CURVE



unit. In many ways, it is possible to exemplify the initial spurt with the aphorism "the first step is the best step".[16]

Another feature of the curve is the *learning plateau*. At some point in the learning process there is a flattening off in terms of the improvement, a plateau. Frequently, the process of learning is marked by discontinuities and involves escalating from one plateau to another. Most learners are only too aware of the experience of finding themselves on a plateau, which manifests itself in the feeling that they are never going to get anywhere.

Jumping from one plateau to another is called *organisation of learning*. Organisation of learning is achieved when the learner discovers a new and more effective method of performing particular tasks. For example, when he learns to apply the calculus to solve problems of business.

Disorganisation of learning is an actual fall off in performance. This arises when the subject has to choose between alternative methods of tackling a task.

The last characteristic of the learning curve is the *end spurt*. The end spurt is preceded by fatigue which is likely to set in with the passage of time. When the training session draws nearer to an end, and the subject realises this, there occurs resurgence of interest and effort to learn more. This revival is called the end spurt.

SUCCESSFUL MANAGER

HOW TO USE PUNISHMENT AS A REINFORCEMENT STRATEGY?

- Deliver punishment immediately after undesirable behaviour occurs.
- Give moderate level of punishment — avoid being too lenient or too harsh.
- Punish not the person but punish his or her undesirable behaviour.
- Use punishment consistently across occasions.
- Punish everyone equally for the same infraction.
- Clearly communicate the reasons for punishment.
- Punish in private. Avoid the public embarrassment that comes with punishing someone in front of others.
- Make sure punishment matches behaviour.

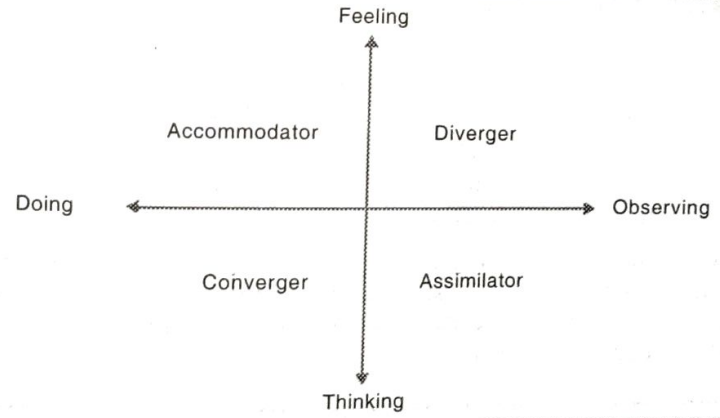
Meaningfulness of Material

A definite relationship has been established between learning and meaningfulness of the subject learnt. The more meaningful the material, the better does learning proceed. Learning of nonsense syllables proceeds more slowly than that of prose or poetry. On a broader scale, a programme of learning, where, each task makes for meaningfulness, trainers do have certain techniques that increase meaning for the trainees. Organising meaningfulness units, creating association with already familiar terms, and providing a conceptual basis of logical reason for the material are some of the practical possibilities.

Learning Styles

The final principle of learning is the learning styles. Learning style refers to the ability of an individual to learn. A manager's long-term success depends more on the ability to learn than on the mastery of the specific skills or technical knowledge. There are four styles people use when learning: accommodation, divergence, assimilation, and convergence. Fig. 9.8 depicts the four styles. The four styles are based on two dimensions: feeling versus thinking and doing versus observing.

FIGURE 9.8
LEARNING STYLES



Accommodator: An accommodator learns by doing and feeling. He/she tends to learn primarily from hands-on experience. He or she tends to act on gut feeling rather than on logical analysis. An accommodator tends to rely more heavily on people for information while making decisions. He or she seeks action-oriented careers such as marketing, politics, public relations and management.

Diverger: A diverger learns by observing and feeling. The diverger has the ability to view concrete situations from different angles. When solving problems, diverger enjoys brainstorming. He or she takes time and analyses many alternatives. Diverger is imaginative and sensitive to the needs of the other people. He or she seeks careers in entertainment, arts and services sector.

Converger: A converger learns by doing and thinking. The converger seeks practical use for information. When presented with problems and making decisions, the converger tends to focus on solutions. Converger tends to prefer dealing with technical tasks and problems rather than social and interpersonal issues. Converger seeks technical careers in various scientific fields and work at engineering, production supervision, IT and managerial jobs.

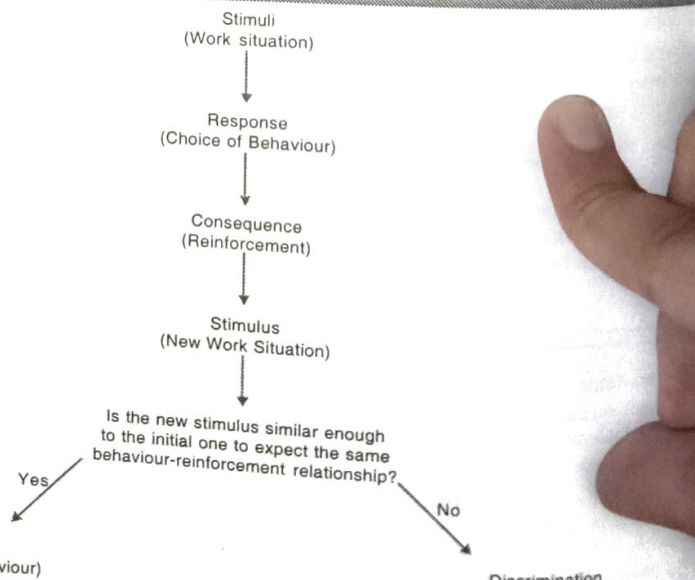
Assimilator: An assimilator learns by observing and thinking. The assimilator is effective at understanding a wide range of information and putting into concise and logical form. It is more important for the assimilator that an idea or theory is logical than practical. Assimilator tends to be more concerned with abstract ideas and concept than with people. He or she tends to seek careers in education, information, and science.

Learning and OB

In addition to the application of learning in OB, as explained earlier, there are several other dimensions (of learning) which have a bearing on individual behaviour in organisations. A few important aspects are explained below.

Stimulus Generalisation in Organisations: Stimulus generalisation refers to how people recognise the same or similar stimuli in different settings. In other words, it is the process by which they can generalise a contingent reinforcement from one setting to another. Fig. 9.9 illustrates a simple example of the process. Following an initial stimulus-response-consequence sequence, a person learns the behaviours likely to produce some kind of reinforcement. Later, when presented with a similar stimulus in different surroundings, he or she knows that the same response is likely to elicit a similar consequence.[17]

FIGURE 9.9
STIMULUS GENERALISATION AND DISCRIMINATION



(***Source:*** Moorhead and Griffin, *op. cit.*, p. 73).

Consider the plant manager of a manufacturing company who has a history of effective troubleshooting. Over the years he has been assigned to several plants, each with a serious operating problem. After successfully dealing with the difficulties, he has always received an extended vacation, a bonus, and an increase in his base salary. He has learnt the basic contingencies, or

EXHIBIT 9.3

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(***Source :*** Moorhead a

EXHIBIT 9.3 **HONDA'S APPROACH TO EMPLOYEE TRAINING**

Almost everyone is familiar with the facts about Japanese automakers. We hear of their fanatical concern for quality, their participative management styles, and their highly motivated and committed workforces. Companies like Nissan, Toyota and Honda have become major forces in the American automobile industry in a fairly short time and in recent years have begun to manufacture cars on American soil. Indeed, recent forecasts suggest that by the middle of this decade, one in three new autos sold in the United States may be a Japanese product.

No company exemplifies the push by Japanese firms into the American marketplace more than Honda. Honda's Marysville, Ohio, plant builds about one-third of the cars the company sells in United States, and Honda recently became the first foreign manufacturer to produce all of its car's major components in this country. The new Honda Accord wagon, expected to be a major success, was designed in California by Americans and is being produced solely in US plants.

A question long asked by many has been the extent to which American workers can demonstrate the same level of commitment as their Japanese counterparts. To help build this commitment, Honda has gone to extreme lengths to train its American workers in how things need to be done. For example, when a new model of the popular Accord was being introduced, the company flew two hundred American workers representing all parts of the factory to Japan, where the new model already was in production. Working in small groups, the Americans stayed from two weeks to three months observing and learning from their Japanese counterparts. Back in Marysville, these employees are given great deal of responsibility and are expected to help train others.

(**Source :** Moorhead and Griffin, *op.cit*, p. 78).

SELF-CHECK

1. Which of the following statements better describes learning?
   (a) Getting educated
   (b) Ends at university level
   (c) Modification of behaviour through practice, training, or experience
   (d) Changed behaviour.
2. (a) _____ is based on the assumption that an object elicits response when it is paired repeatedly with reaction eliciting stimulus.
   (b) The assumption that our behaviour produces certain consequences and how we behave in future depends on such consequence is the essence of _____.
   (c) _____ assumes that organism learns the meaning of various objects and events and learned ... the meaning assigned to the stimuli.
   ... observing others.

requirements of reinforcement for his job. The stimulus is the assignment, the response is correcting problems, and the consequences are several positive reinforcers. When the manager gets his next assignment, he will probably generalise from his past experiences even though he will be in a different plant with different problems and employees, he will know what is expected of him and understand what it takes to be rewarded.[18]

Stimulus Discrimination in Organisations: Stimulus discrimination is the ability to recognise differences among stimuli. Fig. 9.9 shows this process too. As in stimulus generalisation, the person learns the basic stimulus-response-consequence sequence for one stimulus. When confronted with a new stimulus, however, he or she can discriminate between the two stimuli and respond differently.

Assuming that the troubleshooting plant manager is assigned to the plant that is running smoothly. His routine response to new situations has always been to identify and solve problems, but he must now discriminate between his new situation and his earlier ones. He will also recognise that he will need a different set of behaviours, or responses, to meet performance expectations and receive positive reinforcement.[19]

Learning and Training: Learning is the major objective of training. If conducted keeping learning principles (described earlier) in mind, training becomes effective. Many organisations devote vast resources to training and development to expand the skills and abilities of their employees. (Read Box 9.3 for one such example.)

Learning Through Feedback: Feedback is any information that people receive about the consequences of their behaviour. Feedback has a powerful effect on behaviour and job performance by improving role perceptions, ability and motivation. With regard to role perceptions, feedback lets people know what behaviours are appropriate or necessary in a particular situation. Feedback improves employee ability by frequently providing information to correct performance problems. Employees develop better skills and acquire job-related information by watching instrument dials or non-verbal cues from customers. This is known as *corrective feedback*, because it makes people aware of their performance errors and helps them correct those errors quickly.[20] Feedback is a source of motivation. Positive feedback fulfils personal needs and makes people feel more confident than they are able to accomplish certain tasks.

Employee Indiscipline: Employee indiscipline exhibited in such acts as drunkenness on the job, late arrivals to work, insubordination, stealing company property and the like is common. Every manager is frequently confronted by such indiscipline. The manager will respond with disciplinary actions such as, verbal warnings, oral reprimands, or temporary suspensions. Research on discipline shows that the manager should act immediately to correct the problem, match the severity of punishment to the severity of the "crime" and ensure that the employee sees the link between the punishment and the undesirable behaviour. Punishment for indiscipline is hardly the answer to the problem. The person being punished can perceive the punishment as a result of being caught rather than as an incentive to replace undesirable behaviours with another set of behaviours.

Disciplining employees for undesirable behaviour only tells them what not to do. It does not tell them what alternative behaviour is preferred. The result is that this form of punishment frequently leads to only short-term suppression of the undesirable behaviour rather than to its elimination. Continued use of punishment rather than positive reinforcement also tends to produce a conditional fear of the manager. As a punishment agent, the manager becomes associated in the employee's mind with adverse consequences. Employees respond by "hiding" from their boss. Hence, the use of punishment can undermine manager-employee relations.

The popularity of discipline lies in its ability to produce quick results in the short run. Managers are reinforced to use discipline because it produces an immediate change in the employee behaviour. But in the long run, when used without positive reinforcement of desirable behaviour, it is likely to lead to employee frustration, fear of the manager, recurrences of the problem behaviour, increase in absenteeism and decrease in turnover.

CONCLUSION

This chapter focused on individual learning. Just as there is intrapersonal learning, there is organisational learning too. *Organisational learning* is the process through which managers seek to improve organisation members' desire and ability to understand and manage the organisation and its environment so that they can enhance organisational effectiveness.[21] We have discussed organisational learning in greater detail in chapter 18.

SUMMARY

- Learning is understood as the modification of behaviour through practice, training, or experience.
- Distinction is made between explicit knowledge and tacit knowledge. Explicit knowledge is organised and can be communicated from one person to another. Tacit knowledge is what one knows but cannot tell. "I know but cannot express" typifies tacit knowledge. It is the duty of OB expert to convert tacit knowledge into explicit knowledge.
- Learning occurs through classical conditioning, operant conditioning, cognitive process and observational [illegible]. Classical conditioning is based on the premise that a physical [illegible] the capacity to