# 1

# INTRODUCTION TO INDUSTRIAL/ ORGANIZATIONAL (I/O) PSYCHOLOGY AND JOB ANALYSIS – I

**Unit Structure**



## 1.0 OBJECTIVES

After reading this unit, you will be able to understand:

- Define I/O psychology.
- Discuss the major activities of I/O psychologists.
- Describe I/O psychology as a profession & as a science.
- Summarize the I/O field's history.
- Explain why research is important and how it relates to practice.

## 1.1 WHAT IS I/O PSYCHOLOGY?

Psychology is the scientific field of human (and nonhuman) behaviour. This field also emphasizes studying the concepts of cognition, emotion, and motivation in detail. There are different specializations in this field. Some of these specializations focus on experimental psychology i.e. psychological science and application of scientific knowledge to real-world settings. I/O psychology is the specialization that is concerned with both psychological science and its application.

The term I/O psychology includes two-part i.e. Industrial and Organisational. Both these terms have content that overlaps, they are difficult to separate. However, the history of both divisions has different traditions. The original name of I/O psychology was Industrial psychology. It is the older branch that takes the management perspective of organizational efficiency. This perspective is taken through the appropriate use of human resources. It deals with issues such as efficient job design, employee selection, employee training, and performance appraisal. The second division of the I/O - Organizational psychology has

roots in the human relations movement in organizations. This field gives importance to the well-being of the employees and understands their behaviour. It includes topics such as employee attitudes, employee behaviour, job stress, and supervisory practices.

I/O psychology has topics that cannot be easily separated as strictly industrial (I) or organizational (O). For example, motivation is relevant to the I as well as O of the field. Motivation comes under the I aspect as it focuses on employee efficiency and performance but it is also relevant to the O as it deals with the happiness and well-being of employees, as well as understanding human behaviour in organizational settings. Though I and O areas are distinguished even though the I and O areas cannot always be distinguished, together they suggest the broad nature of the field.

The largest subarea of psychology concerned with the application of scientific findings is clinical psychology. Clinical psychologists are concerned with the investigation and treatment of psychological disorders and problems. The field of **Industrial/Organizational Psychology** is smaller, it is a rapidly growing subfield of psychology that is linked with the development and application of scientific principles to the workplace. Employees' emotional or personal problems are not addressed directly by I/O psychologists. Clinical psychology is the field in which this activity falls. An I/O psychologist, on the other hand, may advise hiring a clinical psychologist to help with issues such as employee alcoholism or post-traumatic stress disorder (PTSD).

## 1.2 I/O PSYCHOLOGY AS A PROFESSION

Like accounting and law, I/O psychology is a profession. In some states of the United States, I/O psychologists require a license to practice. Various consulting firms provide services to the organisations in the same way as accounting and law firms provide. Many I/O psychologists work in such consulting firms.

There are several professional/scientific societies to which I/O psychologists are associated. The United States has several such societies. The Society for Industrial and Organizational Psychology (SIOP) is the largest national organization which is rapidly growing internationally also with about 12% of its members from other countries than the United States. SIOP is a division of the American Psychological Association (APA) which has more than 8,200 members. All these members are I/O psychologists and about 48% of them are student affiliates.

Another such organisation that is larger than SIOP is the Academy of Management. People who are interested in the broad field of management such as professors from colleges of business administration are members of this organisation. The majority of its members are not psychologists. However, I/O psychologists in this organisation are active members.

Many regional and city associations of I/O psychologists can also be found in many areas, including Central Florida, Michigan, New York City,

Ottawa, San Francisco, and Washington, DC. Established in 2006, the Society for Occupational Health Psychology (SOHP) is the newest American organization relevant to I/O psychology. The majority of its members are I/O psychologists who are concerned with important aspects in the workplace such as employee health, safety, and well-being.

Other than the United States, other countries also have such organisations. Some of the professional associations of I/O psychologists are the College of Organisational Psychologists in Australia, the Society for Industrial and Organizational Psychology in Canada, the British Psychological Society has its Division of Occupational Psychology, and many similar associations exist throughout Europe. Many of these organisations have formed the European Association of Work and Organizational Psychology (EAWOP). Another such association is the International Association of Applied Psychology which is a Division of Organizational Psychology. The members of this association are I/O psychologists who are keen on the issues related to cross-cultural and international levels.

## 1.3 I/O PSYCHOLOGY AS A SCIENCE

Research is an important element to bring new methods and procedures in the activities of I/O psychologists. Research is a major part of the I/O field. Organisations conduct such research when there is some specific issue that has to be resolved. E.g., research has to be conducted when the organisation faces a high employee turnover (quitting) rate. Research is also conducted when organisations want to focus on understanding some organizational phenomenon, such as the cause of employee theft or the effect of job attitude. The findings obtained from such research are presented at professional meetings or conferences and published in scientific journals.

There are annually arranged conferences by various national and international associations mentioned earlier. E.g., nearly 4,000 practitioners and researchers attend the annual meeting of SIOP in which they share and discuss their research findings and ideas. Such meetings prove to be a good place for the I/O practitioners to learn about new solutions applicable in their organisation. The latest findings are discovered by researchers even before they are published in scientific journals.

There are several scientific journals produced by professional associations or published privately that act as a major channel to understand the latest research. For example, the Journal of Applied Psychology published by the American Psychological Association and the Journal of Occupational and Organizational Psychology is published by the British Psychological Society. Table 1 lists the major journals that publish research on the topics in the field of I/O psychology. Most of these journals are like magazines that are published in four to six issues annually. The International Review of Industrial and Organizational Psychology is published once a year and summarizes the state of knowledge on various topics.

I/O researchers who are mostly college professors submit their research articles for possible publication to these journals. Those articles are then sent to experts to evaluate them critically. Once evaluated, the articles are revised based on the critiques, and often several rounds of revision and resubmission will be necessary before an article is accepted for publication. Out of the total submitted articles, only 10% to 20% of them survive a rigorous peer-review process and are published in the best journals. Peer review helps maintain high standards for published work so that the best research makes it into print.

The research publication is a difficult and competitive venture. College professors who are without tenure have tremendous pressure to be successful at publication. As with other disciplines of scientific disciplines, I/O programs at most universities require continuous efforts to keep it going this is done by active researchers who contribute to the knowledge base of the field. The record of publications in the best journals is a major determinant of career success for a professor, as reflected in the ability to find a job, earn tenure, get promoted, and receive raises. As the major function of the university is to create a knowledge base, the load to create emphasize research is justified.

**Table 1.1 I/O Research and Theory Publishing Journals**

| |
|---|
| Academy of Management Journal |
| Academy of Management Review |
| Administrative Science Quarterly |
| Applied Psychology: An International Review |
| Group and Organization Studies |
| Human Factors |
| Human Relations |
| Human Resources Management Review |
| International Journal of Selection and Assessment |
| International Review of Industrial and Organizational Psychology |
| Journal of Applied Psychology |
| Journal of Business and Psychology |
| Journal of Management |
| Journal of Occupational and Organizational Psychology |
| Journal of Occupational Health Psychology |
| Journal of Organizational Behavior |

| |
|---|
| Journal of Vocational Behavior |
| Organizational Behavior and Human Decision Processes |
| Organizational Research Methods |
| Personnel Psychology |
| Work & Stress |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley}

## 1.4 HISTORY OF THE FIELD OF I/O PSYCHOLOGY

The field of psychology though came into force in the 20th century, its origins are found in the late 1800s and early 1900s. These roots can be traced back to the time when the field of psychology was originated. I/O related work was first initiated by experimental psychologists. These scholars were interested in applying the new principles of psychology to problems in organizations. Issues regarding job performance and organizational efficiency were focused in the United States whereas the United Kingdom covered the areas of employee fatigue and health. The first half of the century was the period of rapid development of the field. The major events in the development of I/O psychology in the United States are depicted in Table 1.2.

**Table 1.2 Major Development of I/O Psychology (United States)**

| | |
|---|---|
| **1990** | Americans with Disabilities Act passes |
| **1970** | APA adopts the name, Division of Industrial and Organizational Psychology |
| **1964** | Civil Rights Act passes |
| **1941** | World War II war effort begins |
| **1924** | Hawthorne studies begin |
| **1921** | First I/O Ph.D. awarded; Psychological Corporation is founded |
| **1917** | Mental tests for job placement are developed |
| **1913** | First I/O textbook is published |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley}

Hugo Munsterberg and Walter Dill Scott are considered the main founders of the American I/O field. Both of them were experimental psychologists and university professors. They got engaged in applying psychology to the problems of organizations. Hugo Munsterberg had come to the United

States from his native Germany. He was especially interested in employee selection and the use of the new psychological tests. Munsterberg did not gain the respect of colleagues at Harvard University which motivated him to shift to the emerging field of industrial psychology. Like Munsterberg, Walter Dill Scott was interested in the field of the selection of employees in the organisation and also the use of psychological tests. Along with this, Scott was interested in the psychology of advertising. He wrote a pioneering textbook named The Theory of Advertising (1903) while Munsterberg wrote the first American I/O textbook called Psychology and Industrial Efficiency (1913).

Another important influencer in the field of I/O psychology is Frederick Winslow Taylor. He was an engineer who studied the productivity of the employees at the workplace throughout his career during the late nineteenth and early twentieth centuries. Taylor advanced what he called Scientific Management as an approach to manage the workers in the production unit of the factories. According to Taylor, Scientific Management comprises numerous principles to guide organizational practices. In his writings, Taylor recommended the following ideas which are still valuable today:

1. Every job at the workplace should be analysed carefully to specify the optimal way of doing tasks.

2. Selection of employees should be done based on the characteristics related to the job performance. Managers should deeply understand what personal characteristics are important to the existing employees.

3. Employees should be carefully trained to do their job tasks.

4. Rewards should be given to the employees who are highly productive to encourage high levels of performance.

The work of a husband-and-wife team, Frank and Lillian Gilbreth is yet another major influence from the field of engineering. They both were keen on studying efficient ways of performing tasks. As Frank was an engineer and Lillian was a psychologist, their work was a product of the field of engineering and psychology. They combined these two fields to study how people perform tasks. Time and motion study was their best-known contribution. This study involved measuring and timing people's motions in doing tasks to develop more efficient ways of working. Gilbreth refined the ideas of Taylor and developed new techniques to help many organizations. There are differences in the historians as to who was awarded the first American I/O Ph.D. Some historians believe that Lillian received it in 1915 whereas others claim that Bruce V. Moore received Ph.D. in 1921. The rapidly growing popular field of human factors is based on the work of Gilbreths. The field of human factors studies how best to design technology for people. Lillian paid attention to designing consumer products in the later years of her career. Such as the invention of the foot-pedal trash can and refrigerator door shelves, among other things. However, the Gilbreths themselves are best known as the subjects

of the popular movie Cheaper by the Dozen. This movie depicted their lives as working parents of 12 children.

The United Kingdom and the United States started the use of I/O psychology to assist in the war effort during World War I. In the United Kingdom, I/O psychology began with the establishment of the Health of Munitions Committee (HMC) in the year 1915. HMC dealt with issues of employee health, safety, and efficiency that were exacerbated by productivity demands due to the war. On the other hand, in the United States, many psychologists were led by Robert Yerkes to offer their services to the army. The development of the Army Alpha and Army Beta group tests for mental ability is considered to be a great accomplishment of the group. Selecting and placing recruits was one of the biggest problems for the army. Psychological tests were invented during this period to solve the problem. This was the first large-scale application of psychological testing to place individuals in jobs. It provided a foundation for mass testing that has been used ever since in educational settings and employment settings.

The period between the two World Wars was of vast expansion for the field of I/O psychology. The areas that were explored and developed during these decades are still in use today. The rapid growth in the size of organisations led to increasing employee problems. This led to a need for I/O psychologists in the organisations. Many I/O psychologists were, thus, hired in the organisations during this period. During this period, research also increased to a large extent. Psychologist Charles Myers co-founded the National Institute of Industrial Psychology (NIIP) in the year 1921 in the United Kingdom. NIIP is an organization devoted to improving the efficiency and working conditions of British employees. The focus of NIIP is employee well-being which follows the work of the earlier HMC and characterizes not only British but also European I/O psychology during the early development of the field. In 1921, the first American Ph.D. was awarded by Penn State University. The award was then called industrial psychology which was awarded to Bruce V. Moore. Moreover, I/O psychologists began establishing consulting firms that would provide services to organizations for a fee. The most well-known of these was the American company Psychological Corporation, founded in 1921 by James McKeen Cattell, which today is called Harcourt Assessment. Hawthorne studies is one of the most important events of this period. This study continued for more than 10 years at the Western Electric Company in the United States.

Before the marking of the Hawthorne Studies, American psychologists working in the field of industrial and organisational psychology concentrated for all intents and purposes more or less entirely on problems faced in the sector of employee productivity and overall organizational efficiency, along with the evaluation of employee abilities using assessment techniques and the robust design of jobs, that is quite noteworthy, or so they thought. Even though the Hawthorne researchers began to study these subjects, they soon recognized what their essentially British counterparts generally had already learned: it, for the most part, is

challenging to the most part distinguish employee performance from the kind of particularly social components of actually organisational life, or so for what they assumed in a fairly big way. The nature of their research-based study into supervisor management and workgroups has specifically helped to particularly promote fairly greater awareness about the organizational dynamics of the discipline to which it applies, or so they thought.

Including all sorts of reasons and purposes, the most well-known of the Hawthorne studies was the examination and investigation of lighting level effects, which was highly relevant for studying employee productivity, better performance, and job satisfaction levels. The purpose of this study has been to effectively identify and establish the proper lighting levels which would effectively generate maximum performance on industrial work in a significant way. The researchers carried out the experiment wherein a group of employees was transferred to a special room where lighting levels were drastically altered. Lights were turned brighter and dimmer from day to day to evaluate the impacts on performance, furthermore demonstrating how the best known of the Hawthorne investigations for the most part was indeed the research of lighting-level effects, or so what they believed. The researchers were sort of shocked to primarily discover that the productivity and performance of the employee were improved throughout the course of the trial and had very little to do with lighting settings, opposite to what our conventional perception was. Many reasons for these findings have been that are been offered and contested, illustrating that the researchers performed an experiment wherein a group of employees had been primarily taken to a truly different from others and a special area where the lighting levels were particularly modified in a major way. The most usually stated idea would be that the knowledge and understanding of participating in an experiment, or what has generally come to be known as the **Hawthorne Effect**, generated small increases in the level of performance in the employees. Whichever the reason, it appears particularly evident that the actual pretty social factors can indeed kind of be reasonably more essential than primarily the physical parameters in an individual's work performance, and as generally such the researchers for the most part were somewhat surprised to discover that during the period of the experiment, work productivity and so for all sorts of reasons also seems to for the most part have almost nothing to do with lighting levels in a significant manner, which is quite significant.

Opposing to the popular assumption, World War II had a significant motivating influence on the development of the industrial and very organisational psychology discipline for nations on both sides of the conflict, particularly the United States and the United Kingdom in a subtle way. Psychologists, for the most part, essentially worked with difficulties that covered the whole area of both Industrial and Organizational work, basically such as recruitment screening, allocation of candidates in various positions, training, motivation, performance evaluation, team building, and equipment needs, which is quite significant. Before World War II, the APA's interests, for the most part, were mainly restricted to experimental

psychology, and it explicitly rejected attempts by Industrial and organizational psychologists to make practice, which was fundamentally deemed non-scientific, part of its purpose in a truly fairly major way, which is fairly significant. However, as a result of what kind of happened during and after the war, the American Psychological Association truly particularly opened the doors to psychological science, and Division 14 of Industrial and Business Psychology is particularly general for all intents and purposes was founded in 1944, which is fairly important for all intents and purposes, which is quite significant. Following the war, the two disciplines of industrial and kind of organisational psychology in pretty particular essentially continued to specifically flourish. For instance, Arthur Kornhauser specifically carried out a study based on how work environments may typically kind of have effects both on the psychological health and self-lives of employees, resulting in kind of several of the relatively for all intents and purposes colonial America work on what was once known as occupational health psychology, or so researchers believed. Common to the misconceptions of sort of individual beliefs, Division 14 of the APA changed its name in 1970 to the Division of Industrial and Organizational Psychology and specifically is now officially known as the **Society for Industrial and Organizational Psychology** (SIOP) in a kind of big way. The organization's website (http://www.siop.org) for the most part is a significant resource for information about the profession, especially graduate school information, job advertisements, and organizational business, as per the thoughts and ideas of the researchers.

Contrary to popular perception, the implementation of the Civil Rights Act of 1964 mostly was another event in the United States that contributed to forming the area of Industrial and organizational psychology for the most part in an actual major way. This legislation put in action factors that have mostly had a significant influence as to how the corporations specifically hire and treat employees in general, and not only in the United States. When discrimination towards minorities and women became unlawful, businesses were forced to drastically really alter their hiring practices. The Americans With Disabilities Act (ADA) of 1990 expanded anti-discrimination safeguards to people with a disability, highlighting that whenever discrimination towards women and people of colour became unlawful, corporations would essentially have to mostly adjust many generally more of their employment practices and the treatment of employees in a different manner in a subtle way. Likewise, Industrial and Organizational Psychologists have indeed been kind of started calling upon to specifically essentially look for ways to essentially and completely actually remove discriminatory practices, demonstrating that this act set throughout motion forces which have normally had a considerable effect on how organisations consider hiring but mostly treat workers, and not just in the United States in a significant manner in a subtle way.

The field's background is practically basically pretty full of examples of how I/O psychologists have generally for all intents and purposes helped in enhancing companies' environment and indeed focusing on the working circumstances for employees, which particularly is usually quite significant, which for all intents and purposes is fairly significant. The

discipline generally definitely has expanded considerably from a pretty early emphasis on efficient performance and profitability, notably in the United States, to the typically many various fields we see today in a subtle way, which for the most part is quite significant in a subtle way. I/O psychology for the most part specifically has a lot to the most part give to the running of businesses and the well-being of employees, or so they for the most part though, which kind of shows that I/O psychology, for the most part, has a lot to for the most part give to the running of businesses and the well-being of employees, or so they for the most part for all intents and purposes thought in a major way. Its development typically seems very kind of strong and favourable, since organisations will always for all intents and purposes require assistance with employees' concerns in a subtle way, very contrary to popular belief.

## 1.5 SUMMARY

One of the major areas of psychology is industrial/organizational (I/O) psychology. It is a broad field that deals with the human side of organisations. The I/O field is divided into two major categories. The industrial side is concerned with organisational efficiency through employee evaluation, selection, and training, as well as job design. The organisational side is concerned with understanding employee behaviour and protecting their health, safety, and well-being on the job.

I/O psychology is a practice as well as a science. The majority of I/O psychologists work for organisations to address issues and problems involving people. They are practitioners who work as consultants for a variety of organisations or as employees of a single organisation.

A graduate degree in I/O psychology from a university is required for an I/O psychologist. Many such programmes can be found throughout the United States and the rest of the industrialised world, including Australia, Canada, China, Europe, Israel, New Zealand, and South Africa, with new programmes being added in other places. Although the field began primarily in the United States and the United Kingdom, it has rapidly spread throughout the majority of the world.

There are numerous associations of I/O psychologists (and others with similar interests) that facilitate the exchange of ideas and research findings in the field. This is done by holding conventions and by publishing scientific journals.

## 1.6 QUESTIONS

1. What is I/O psychology?
2. Discuss I/O psychology as a profession.
3. Describe I/O Psychology as a science.
4. Explain the history of the field of I/O psychology.

## 1.7 REFERENCES


- Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.
- Spector, P. E. (2012). *Industrial and Organizational Psychology: Research and practice*. Singapore: Wiley. (Indian reprint 2016)


*****

# 2

# INTRODUCTION TO INDUSTRIAL/ORGANIZATIONAL (I/O) PSYCHOLOGY AND JOB ANALYSIS – II

**Unit Structure**



## 2.0 OBJECTIVES

After reading this unit, you will be able to understand:

- Enumerate the uses of job analysis information.
- Describe the sources and ways of collecting job analysis information.
- Discuss the different job analysis methods.

- Explain how job evaluation is used to set salary levels for jobs

## 2.1 WHAT IS JOB ANALYSIS?

**Job analysis** is a process of describing the jobs and/or the human attributes needed to perform them. A formal job analysis, as per Brannick, Levine, and Morgeson (2007), consists of three components:

i. The process has to be systematic. This means that the analyst determines and follows a method in advance.

ii. A job is subdivided into smaller sections. We discuss job components rather than the entire job.

iii. The analysis produces a written product, either electronically or on paper.

There is no single approach to doing a job analysis. Many techniques provide different types of information on jobs and the human attributes required for work. As previously stated, based on the purpose of the job analysis, job analysis techniques can be employed to gather the information that is either job-oriented or person-oriented.

### 2.1.1 The Job-Oriented Approach:

The **job-oriented job analysis** provides information about the nature of tasks performed on the job. Some ways are used to describe the tasks themselves. Other approaches give information on task characteristics. A police officer, for example, maybe assigned the following task:

Completes report after arresting a suspect

The preceding sentence outlines what a police officer performs. A feature of an officer's work would be:

Uses pencils and pens

The characteristic does not refer to a specific task but describes common features that apply to all tasks. A police officer is responsible for a variety of writing tasks, such as completing various types of reports and issuing citations to motorists. The goals of the job analysis indicate which approach is best. The task descriptions give an impression of what individuals do on the job, whereas task characteristics may be used to compare the nature of activities across different types of jobs. Because police officers and teachers both use pencils and pens to complete tasks, there may be some similarities in the types of tasks they perform, even if the particular tasks themselves differ.

To describe what a police officer does at work, a job analysis is required.

Tasks can be organised in a hierarchy, with higher-level instructions breaking down into smaller and smaller portions of the job. Several of the main responsibilities of police officers, for instance, is to apprehend

suspects. This police role can be subdivided even more into the specific actions involved, such as, i) Go to suspect's house to make arrest, ii) Knock on the door and identify self, iii) Handcuff suspect, iv) Inform suspect of legal rights, v) Put suspect in car, and vi) Drive suspect to the police station.

Brannick et al. (2007) proposed a specificity hierarchy with five levels:

i) **Position:** A *position* is a set of duties that can be carried out by a single person. Each employee typically has a single position, while it is possible for an individual to hold many positions. Moreover, numerous similar positions might be given the same title; for instance, several police officers within a department may be given the position of "patrol officer," despite the fact that each has a different role and set of tasks. One job may be assigned to patrol a city area by car, another to patrol on foot, and a third to work at a station desk.

ii) **Duty:** A *duty* is a crucial component of a job. Duty for a police officer would be: Enforce the law. Each duty is accomplished by carrying out one or more associated tasks.

iii) **Task:** A *task* is a complete piece of work that achieves a certain objective. One of the tasks involved with executing the law is: Arrest suspects who violate the law.

Iv) **Activity:** Each task may be broken down into *activities*, which are the individual components that make up the task. In this situation, acts that complicate the work of arresting suspects include: Driving to a suspect's house to perform an arrest.

V) **Element:** A number of very particular activities or *elements* are required to complete this task, such as: Turn the ignition key to start the automobile engine.

Most jobs include many duties; each duty is related to multiple tasks; each task is associated with multiple activities, and each activity may be divided down into multiple elements. This implies that a job analysis can include a lot of highly specific information about what happens on a certain job. A job analysis that reaches the level of job elements produces a lengthy and detailed report.

### 2.1.2 The Person-Oriented Approach:

A **person-oriented job analysis** describes the traits or KSAOs required for a person to successfully execute a certain job. The knowledge, skills, abilities, and other characteristics required for a job are referred to as **KSAOs**. The first three qualities are primarily concerned with job performance; the "other" characteristics are related to job adjustment and satisfaction, as well as performance.

**Knowledge** is defined as what a person needs to know in order to do a specific task. A carpenter, for example, should be familiar with local building codes as well as power tool safety.

What a person is capable of doing on the job is referred to as their **skill**. A carpenter should be able to read blueprints and use power tools.

**Ability** refers to a person's aptitude or capability to do or learn to perform job tasks. It is a person's ability to discover new skills. The majority of skills need one or more abilities. Power tool use requires a number of qualities, including hand-eye coordination. A carpenter must have good balance and the capacity to work swiftly in order to create a house's roof.

Finally, **other personal characteristics** include everything else related to the work that isn't covered by the first three. A carpenter should be willing to conduct manual work and work outdoors.

Although they may seem to be the same thing, KSAOs and tasks are not the same things. A task is something that a person does. A KSAO is a characteristic or quality of a person who is required to do certain tasks or duties. KSAOs identify the type of person required, whereas tasks specify what is done on the job. Table 2.1 shows some examples of tasks and the KSAOs that go with them.

**Table 2.1 Examples of KSAOs and Associated Tasks**

| KSAO | Task |
|---|---|
| Knowledge of legal arrest procedures | Arrest suspects |
| Skill in using a firearm | Practice shooting firearm on firing range |
| Ability to communicate with others | Mediate a dispute between two people to prevent violent incident |
| Courage (as other personal characteristic) | Enter dark alley to apprehend suspect |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley}

Many approaches for conducting job and person-oriented analyses have been developed. Some are particular to one of the two primary types of analysis, while others may be utilised for both. The aim of a technique determines its appropriateness, which is the subject of our next discussion.

## 2.2 PURPOSES OF JOB ANALYSIS

Job analysis data may be used for a variety of purposes. It can serve as the foundation for many other activities and operations. Ash and Levine (1980) described 11 common uses of job analysis information, 5 of which we address in this section of the unit, as well as 2 that they did not include. The sixth use of job analysis data for salary level setting will be explored later under the topic "Job Evaluation." Table 2.2 lists the 11 applications.

**Table 2.2 Eleven Uses of Job Analysis Information**

| Use | Description |
|---|---|
| Career development | Define KSAOs necessary for advancement |
| Legal issues | Show job relevance of KSAOs |
| Performance appraisal | Set criteria to evaluate performance |
| Recruitment and selection of employees | Delineate applicant characteristics to be used as the basis for hiring |
| Training | Suggest areas for training |
| Setting salaries | Determine salary levels for jobs |
| Efficiency/safety | Design jobs for efficiency and safety |
| Job classification | Place similar jobs into groupings |
| Job description | Write brief descriptions of jobs |
| Job design | Design content of jobs |
| Planning | Forecast future need for employees with specific KSAOs |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley}

### 2.2.1 Career Development:

Many organizations have systems in place that allow employees to progress through all the ranks to higher and higher positions. A **career ladder** is developed for those who acquire the necessary skills and maintain strong job performance. The military has one of the most well-known career ladder systems. Personnel move up from lieutenant to captain to major to colonel to general. Because of limited opportunities for advancement and the inability to meet the requisite KSAOs, not everyone can reach the top of the ladder.

**Competency systems** have grown popular in organisations in recent years as a way to reward employees for obtaining the information and skills required to both enhance performance and be promoted. Such systems need the identification of critical competencies, the availability of means for learning and growing competencies, and an evaluation procedure.

Job analysis helps with career development by identifying key skills and presenting a picture of the KSAO requirements for jobs at each level of the career ladder. Employee development and training programmes that focus on skills needed for career growth might integrate the knowledge of KSAO standards. Employees profit from this since they are told exactly what they need to do to be eligible for the promotion. It benefits organizations because it creates a ready supply of candidates for upper-level positions.

### 2.2.2 Legal Issues:

Most industrialised countries have laws forbidding discriminatory employment practices, particularly in employee hiring. Discrimination on the basis of age, colour, disability, gender, ethnicity, or religion, for example, is unlawful in Canada and the United States. Although the

specific groups protected against discrimination vary by country, the fundamental idea that decisions affecting individuals should be fair is nearly universal. In order to be fair in employment, decisions should be made based on job performance or job potential rather than irrelevant personal characteristics. Instead of irrelevant personal characteristics, job analysis presents a list of relevant KSAOs as the basis for employment.

The concept of **essential functions**, which are actions that must be performed on the job, is an important legal concept in the United States. A receptionist, for example, must answer the phone. A non-essential function may be performed on occasion but is not essential of a person in that position. A custodian may receive a phone call from time to time, but answering the phone is not an essential component of the work.

When considering whether or not to recruit a person with a disability, the concept of essential function is important. In the United States, an organization may be allowed to lawfully refuse employment to a disabled employee who is unable to perform vital functions under certain situations. It is illegal to reject hiring anyone with disabilities because they are unable to perform non-essential functions that may easily be performed by someone else or do not need to be performed at all. When it comes to non-essential functions, and sometimes even essential functions, an organisation is expected to provide reasonable accommodations so that the employee can perform the job.

Job analysis is used to identify important functions and key performance indicators (KSAOs). This can help ensure that decisions affecting individuals are based on personal factors that are relevant to the job. For example, a legally valid hiring system should be based on KSAOs that have been demonstrated to be relevant to the position in the issue. Promotion decisions should be made in part based on the KSAOs of potential candidates for the position. Only those individuals with the established characteristics required for the position should be considered. Employee actions based on KSAOs that are derived from a well-conducted job analysis are likely to be legal. Moreover, workers and job applicants are likely to feel that they were treated fairly and are unlikely to initiate a discrimination lawsuit.

### 2.2.3 Performance Appraisal:

A job analysis will be the basis of a well-designed performance appraisal system. One of the main applications of job analysis information is criterion development, which involves determining the key components of job performance to be evaluated. A job-oriented analysis gives a list of the key components of a job at hand that may be utilised as performance evaluation dimensions.

A job analysis is a basis for the behaviour-focused performance appraisal methods that will be addressed in Units 3 and 4. The exact behaviours contained in such instruments are collected in combination with **critical incidents** from a job analysis. These critical incidents are examples of behaviour that represent various levels of job performance, ranging from

outstanding to poor, and they become an important aspect of performance assessment. A poor incident would be when a person did something ineffective, such as a police officer getting into an argument with a citizen that resulted in violence. A good incident might indicate how someone did something that worked well, such as a police officer defusing a potentially violent situation by allowing someone to express their side of the story.

### 2.2.4 Selection:

The first step in deciding who to hire for a job is to identify the human characteristics or KSAOs required for success on that job. This indicates that the first step is to design an employee selection system should be a person-oriented job analysis. Once the KSAOs for a position have been identified, procedures may be selected to assess how well job applicants match the job requirements. Individual characteristics are assessed using methods such as interviews and psychological testing.

Person-oriented job analysis produces a list of KSAOs for a specific job. These KSAOs include both characteristics that a job applicant is often expected to have at the time of hiring and those which will be developed on the job through experience and training. A college degree in accounting, for instance, is required for most accountant roles in large organisations. This ensures that the majority of applicants have a basic knowledge of accounting principles and procedures. On-the-job training provides specific knowledge about the organization's policies and practices. This leads us to the next use of job analysis information training.

### 2.2.5 Training:

The KSAOs for a job suggest where training efforts should be directed. The KSAOs that applicants lack while applying for a position are areas for training after they are hired. A thorough review of the KSAO requirements for a job should be the basis of a good and successful training programme in an organisation. The KSAO requirements can be compared to the KSAO requirements of applicants or employees. If the characteristics can be learned, training efforts may be directed toward deficiencies on the part of applicants or employees. For example, if a job requires a certain height, a person cannot be trained to be taller.

### 2.2.6 Vocational Counselling:

A major role of education, including university level, is to aid students in making vocational choices regarding their future careers. A number of vocational counselling tools are available to help individuals in matching their KSAOs to the KSAO requirements of jobs. Some of these tools aim to match people's preferences and personalities to occupations they might enjoy. Other methods match individual skills to job requirements. Job analysis is very useful for connecting people's KSAOs with those of jobs.

Converse, Oswald, Gillespie, Field, Bizot, and Smither (2004) implemented job analysis for vocational counselling as one example. Job analysis was used to determine KSAO requirements for certain jobs. A

battery of ability tests was administered to a randomized sample of people, and their ability profiles were matched to the requirements for each of the available jobs. Scores reflecting how well individual KSAOs matched job requirements were computed to show the best- and worst-fitting jobs for every individual. For example, one person's abilities were a proper match for driving-related occupations like truck driver or subway operator but a poor fit for health-related occupations like physician's assistant or physician. Another individual was a good fit for factory machine operators but a bad fit for biologists.

### 2.2.7 Research:

Job analysis information can also be used for purpose of research. Many scholars are interested in determining the role of job requirements or task characteristics in a variety of organisational phenomena discussed in this book, such as employee motivation and performance, as well as health and safety. Elovainio and Kivimaki (1999), for example, used job analysis data in their research of individual differences in job stress. According to this Finnish study, individuals who have an aversion to change and uncertainty are more likely to experience a level of emotional strain (anxiety and tension) at work—but only if their jobs are complex, as evaluated by the job analysis. If their jobs are simple, these people are no more likely to be stressed than people who enjoy change and uncertainty.

## 2.3 HOW JOB ANALYSIS INFORMATION IS COLLECTED

Job analysis information is compiled in a variety of ways. They all use people who are trained in measuring job characteristics and the KSAOs required to complete the various aspects of jobs. These individuals either survey the employees who perform the job in question or gain first-hand experience with the job by performing it or seeing it being performed.

### 2.3.1 Who Provides the Information?:

Most job analysis information is gathered from one of four different sources:

- Job analysts
- Job incumbents
- Supervisors
- Trained observers

Job analysts and trained observers do the job or spend time observing employees performing the job and interpreting their experiences into a job analysis. **Subject matter experts (SMEs)** are incumbents and supervisors who have detailed knowledge of the content and requirements of their jobs or the tasks they supervise. They are asked to provide job information through interviews or by completing job analysis questionnaires.

### 2.3.2 Approaches to Collecting Job Analysis Information:

People can offer job analysis information in a variety of ways. The four most commonly used are as follows:

**Perform Job:**

One way to gather job analysis information is for the job analyst to do part or all of the job tasks. The job can be done in the same way as a real employee would, or the tasks can be done under simulated conditions. By doing the job, the analyst learns about the nature of the job tasks and how they interact with one another. It also provides an appreciation for the context in which employees work. Both an insurance salesperson and a police officer, for example, operate a car, but the conditions under which they do so vary significantly.

Although this method can give useful information, it is rarely used. Experiencing the job might be costly and time-consuming. Before the analyst can perform the job, he or she may need extensive training. Some jobs are dangerous, particularly for inexperienced individuals. Finally, this approach does not make it evident that tasks might change between people with the same job title.

**Observe Employees Working:**

Observing individuals doing a job is another approach to collecting information. Observers might be job analysts or individuals who have been trained to observe others. Observers are commonly given forms to fill out regarding the jobs they see. The form could include a list of activities, and the observer would mark how often each one is done by the observed employee. Observing employees, like the previous approach, can provide insights into the context in which job tasks are performed. It can also be costly and time-consuming. Furthermore, when employees are aware that they are being observed, they may not act in the same way.

**Interview Employees:**

Interviewing SMEs who are familiar with the jobs is one of the most popular ways to gather information about them. Experts are typically job incumbents and their supervisors. Job analysts or trained interviewers conduct the interviews. Interviews are often used to generate lists of all tasks and activities performed by all employees with the same job title. Some tasks may be completed by a small number of employees. Other jobs may be performed by each employee on rare occasions.

**Administer a Questionnaire to SMEs:**

The questionnaire is the most efficient procedure for obtaining job analysis information. It can contain hundreds of job-related questions and can be simply given to thousands of employees. There is no other technique that can provide as much information about jobs with as little effort on the job analyst's behalf. Every employee with the same job title might be given the same questionnaire. Comparisons can be made

between groups that have the same job title but differ in certain ways, such as location.

**Multiple Approaches:**

Each of the four methods for gathering job analysis information has its own set of advantages and disadvantages in terms of providing a picture of what work is like. Table 2.3 lists the advantages and disadvantages of each approach. In practice, multiple approaches are frequently used such that the limitations of one are offset by the strengths of another. A job analyst, for example, may undertake the job to gain a sense of the context of the job and then administer questionnaires to get detailed information from a diverse group of employees with the same job title.

***Table 2.3 Advantages and Limitations of Four Techniques Used by the Job Analyst to Collect Job Analysis Information***

| | |
|---|---|
| **Perform the Job** | |
| Advantages: | Provides the context in which the job is done |
| | Provides extensive detail about the job |
| Limitations: | Fails to show differences among jobs with the same title |
| | Is expensive and time consuming |
| | Can take extensive training of analyst |
| | Can be dangerous to analyst |
| **Interview Employees Who Perform the Job** | |
| Advantages: | Provides multiple perspectives on a job |
| | Can show differences among incumbents with the same job |
| Limitations: | Is time consuming compared to questionnaires |
| | Fails to show context in which the tasks are done |
| **Observe Employees Performing the Job** | |
| Advantages: | Provides relatively objective view of the job |
| | Provides the context in which the job is done |
| Limitations: | Is time consuming |
| | Might cause employees to change their behavior because they know they are being observed |
| **Administer Questionnaires to Employees Who Perform the Job** | |
| Advantages: | Is efficient and inexpensive |
| | Shows differences among incumbents in the same job |
| | Is easy to quantify and analyze statistically |
| | Is easy to compare different jobs on common job dimensions |
| Limitations: | Ignores the context in which the job is done |
| | Limits respondents to the questions asked |
| | Requires knowledge of the job to design the questionnaire |
| | Allows job incumbents to easily distort answers to make their jobs seem more important than they are |

*{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}*

## 2.4 METHODS OF JOB ANALYSIS

Many methods for doing job analysis have been developed. These methods make use of various sources of information as well as different ways of collecting information. Some methods focus on either the job or the person, while others concentrate on both. The methods differ in how they use the four sources of job analysis information and the four methods of collecting information. Many of these methods make use of more than one source and more than one means of collecting information. One of the reasons there are so many methods is that they are not all appropriate for the same aims. According to Levine, Ash, Hall, and Sistrunk (1983), job analysts evaluated different methods as best suited to different purposes.

In this section, we will go through four of the many job analysis methods: The Job Components Inventory, Functional Job Analysis, and Position Analysis Questionnaire are generalized methods for comparing different jobs; the task inventory is used to offer a description of an individual job's unique components and tasks. Each method has its own set of advantages and was created to serve a specific purpose.

### 2.4.1 Job Components Inventory:

The **Job Components Inventory (JCI)** was developed in Great Britain to address the need of matching job requirements to worker characteristics. This method allows for the evaluation of job requirements as well as a person's KSAOs at the same time. In other words, both the KSAOs for a job and the KSAOs for individuals are listed. The degree of correspondence of the lists is used to determine if an individual is suited to a certain career or if the individual needs extra training to execute a specific job adequately. The JCI has been utilised in schools for curriculum development as well as vocational guidance.

The JCI has approximately 400 job characteristics that may be converted into skill requirements. The JCI has five components of job features:

i. Use of tools and equipment

ii. Perceptual and physical requirements

iii. Mathematics

iv. Communication

v. Decision making and responsibility

Table 2.4 contains examples of the skill requirements for each of the five components of clerical jobs in Great Britain. With the JCI, almost any job may be analysed and its skill requirements matched to those of potential employees. People who want to discover how closely their own skills match those of a chosen career might use an existing database of job criteria for numerous jobs.

**Table 2.4 Examples of Frequently Needed Skills for British Clerical Occupations Grouped by the Five Components of the Job Components Inventory**

| Component | Skill |
|---|---|
| Use of tools and equipment | Use of pens |
| | Use of telephone |
| Perceptual and physical requirements | Selective attention |
| | Wrist/finger/hand speed |
| Mathematics | Use of decimals |
| | Use of whole numbers |
| Communication | Provision of advice or help to people |
| | Receipt of written information |
| Decision making and responsibility | Ability to decide on sequencing of work |
| | Ability to decide on standards of work |

### 2.4.2 Functional Job Analysis:

**Functional Job Analysis (FJA)** is a technique that involves observation and interviews with SMEs to provide a job description as well as scores on several dimensions related to the job and potential workers. Because the dimensions are relevant to all tasks, the process may be used to compare jobs. The U.S. Department of Labor utilised the FJA job analysis method to create the **Dictionary of Occupational Titles (DOT)**. This rather large Document provides job analysis data for about 20 000 jobs. The 1977 edition's index includes jobs ranging from abalone diver to zyglo inspector, both of which are mentioned in Table 2.5. Table 2.6 shows the DOT job description for a police officer. The printed DOT has been replaced by the Occupational Information Network, a more comprehensive electronic resource.

**Table 2.5 The First and Last Entries in the Dictionary of Occupational Titles, Fourth Edition, 1977 Index**

| |
|---|
| ABALONE DIVER: Gathers or harvests marine life, such as sponges, abalone, pearl oysters, and geoducks from sea bottom wearing wet suit and scuba gear, or diving suit with air line extending to surface. |
| ZYGLO INSPECTOR: Applies iron oxide and zyglo solutions to ferrous metal parts and examines parts under fluorescent and black lighting to detect defects, such as fissures, weld breaks, or fractures. |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

**Table 2.6 Description of a Police Officer Job From the Dictionary of Occupational Titles, Fourth Edition, 1977**

| |
|---|
| Patrols assigned beat to control traffic, prevent crime and arrest violators. Notes suspicious persons and establishments and reports to superior officer. Disperses unruly crowds at public gatherings. Issues tickets to traffic violators. May notify public works department of location of abandoned vehicles to tow away. May accompany parking meter personnel to protect money collected. |

{Source: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

### Occupational Information Network:

The U.S. Department of Labor created the **Occupational Information Network (O*NET)** in the 1990s, with the help of several I/O psychologists from both research firms and universities, and its development and refinement are ongoing. This information system is a computer-based resource for job-related information on around 1,100 job - related groups with similar characteristics. It is available in a variety of forms, including CD-ROM for personal computers and on the world wide web (http://online.onetcenter.org). The idea is to make this database widely accessible to individuals and organisations.

O*NET began with much of the same raw material as the DOT, but its contents are considerably more extensive than anything previously

attempted. It contains a lot of information regarding job content and the KSAOs required by individuals in those jobs. The O*NET98 Data Dictionary has over 450 separate dimensions for describing and rating tasks. The six domains of the O*NET content model are shown in Table 2.7 (column 1). KSAOs are listed in half of the domains (Experience Requirements, Worker Requirements, and Worker Characteristics). Occupation Requirements and Occupation Specific Information are concerned with job task characteristics. Occupation Characteristics are concerned with other types of information related to the labour market and job wages.

O*NET enables people to look for a particular job and get a description and thorough information about the six domains. Although the basic data is the same, the personal computer version and the web version provide information in somewhat different formats. Table 2.7 is an example of information supplied for a police officer, arranged by the six domains. The officer information overlaps with that provided by the Positional Analysis Questionnaire (compare the third column of Table 2.7 with Table 2.9), which is not surprising given that Jeanneret and Strong (2003) demonstrated that O*NET and Position Analysis Questionnaire dimension scores are strongly related.

**Table 2.7 Sample of Information Provided by O*NET for a Police Patrol Officer Job**

| Domain | Contents of Domain | Examples of Patrol Officer Information |
|---|---|---|
| Experience Requirements | Training, learning, licensing | Training in vocational schools, related on-the-job experience, or an associate's degree. May require a bachelor's degree. |
| Worker Requirements | Basic skills, cross-functional skills, general knowledge, education | Skill in problem identification and speaking. Knowledge of public safety and law. |
| Worker Characteristics | Abilities, interests, work styles | Quick reaction time and far vision. Interested in work activities that assist others. Achievement oriented. |
| Occupation Requirements | Generalized work activities, work context, organizational context | Working with the public, operating vehicles or equipment. |
| Occupation Specific information | Occupational knowledge, occupation skills, tasks, machines, tools and equipment | Patrols specific area, maintains order, arrests perpetrators, monitors traffic. |
| Occupation Characteristics | Labor market information, occupation outlook, wages | Employment projections suggest an increase of 17.8% from 1996 to 2006. National median wages are $34,632. |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

### 2.4.3 Position Analysis Questionnaire:

**The Position Analysis Questionnaire (PAQ)** is an instrument that may be used to analyze any job. The questionnaire itself has 189 items that deal with job requirements or job elements. The items can be used to create a KSAO profile for a job. The PAQ elements are general, enabling

comparisons of different jobs based on a common set of dimensions or KSAOs.

The PAQ elements are classified into six major categories, each of which is further subdivided into several minor categories (Table 2.8). The elements cover a wide range of task requirements, such as information intake and processing, equipment and tool use, general body movements, interpersonal contact, and work context. For any job, the elements may be translated into KSAOs. A job that requires the use of mathematics, for example, necessitates this skill. Jobs may be compared based on their KSAO requirements since the PAQ creates a common list of KSAOs.

The PAQ provides a profile of a job's task items and KSAOs. The profile compares a certain job to hundreds of other jobs in the PAQ database. It displays the percentile score for each element and KSAO in relation to all jobs. A low score indicates that the element or KSAO is less significant in the target job than it is in other jobs. A high score indicates that the element or KSAO is more significant in the target job than it is in other jobs. A percentile of 50 indicates that the job is average in terms of the element or dimension under question.

**Table 2.8 Major Categories of the PAQ**

| Category | Example |
|---|---|
| Information input | Collecting or observing information |
| Mediation processes | Decision making and information processing |
| Work output | Manipulating objects |
| Interpersonal activities | Communicating with other people |
| Work situation and job context | Physical and psychological working conditions |
| Miscellaneous aspects | Work schedule |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

A sample of the most important elements and KSAOs for a police officer job may be seen in Table 2.9. As the table demonstrates, a police officer's job includes general personal contact as well as wearing specified vs optional clothes. Table 2.9 also includes many sample KSAOs for the job of a police officer. Far visual acuity and basic reaction time are the two most important. It's important to note that both of them were also identified by O*NET.

**Table 2.9 PAQ-KSAOs and Task Elements for a Police Officer**

| KSAOs | Task Elements |
|---|---|
| Far visual acuity | Interpreting what is sensed |
| Simple reaction time | Being aware of environmental conditions |
| Movement detection | Controlling machines and/or processes |
| Rate control | Engaging in general personal contact |
| Auditory acuity | Wearing specified versus optional apparel |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

### 2.4.4 Task Inventory

A **task inventory** is a questionnaire that includes a list of specified activities that might be performed on a job that is being analysed. For each task, the inventory includes one or more rating scales. Ratings may be made to dimensions such as:

- Amount of time spent doing the task
- Criticality of the task for doing a good job
- The difficulty of learning the task
- Importance of the task

Typically, job incumbents are asked to do the inventory for their own job. The results are combined among incumbents to provide a picture of the average importance or time spent on each task in a certain job.

When several people complete a task inventory, it is likely that they will offer somewhat different ratings on the same dimensions for each activity. This may reflect differences in how people make judgments about their jobs. In other words, if two individuals spend the same amount of time on a task, one may rank it higher in terms of time spent than the other. Another possibility is that differences in ratings among people reflect real differences in tasks. The content of jobs with the same title in the same organisation might vary considerably. Lindell, Clause, Brandt, and Landis (1998) discovered that (in emergency preparedness departments), the number of employees in the work unit affected ratings of the amount of time spent on various tasks. It is likely that the smaller the work group, the more jobs each individual must perform.

Most task inventories are used for purposes where differences among individuals doing the same job are of no particular interest, but there are two important exceptions. Conte, Dean, Ringenbach, Moran, and Landy (2005) discovered a relation between job-related feelings and job-analysis ratings. Individuals who were pleased with their jobs said they spent much more time on various tasks than those that were dissatisfied. Similarly, ratings of time spent on different tasks predicted an individual's sales

performance in a study of stockbrokers. For example, stockbrokers who spent more time away from the office with clients sold more than those who spent less time. In these studies, it is uncertain if the time spent is the cause or result of better performance and job satisfaction. Further research is required to discover why task inventory ratings vary between individuals.

Even for basic work, a task inventory might contain hundreds of tasks. To facilitate interpretation, tasks are often grouped in dimensions that represent the key components of a work. Table 2.10 displays the dimensions for a police officer's job derived from a task inventory. Each of these dimensions was paired with a specific task, and each task was scored on a number of different scales by SMEs. Consider the various tasks in the context of the major dimensions to gain a better understanding of this job.

**Table 2.10 Major Dimensions of a Police Officer Job From a Task Analysis**

| | |
|---|---|
| Driving a car or other police vehicle | Investigating accidents and related problems |
| Making arrests | Issuing tickets and citations, such as those for traffic violations |
| Interviewing witnesses and other people | Responding to disturbances, such as family quarrels |
| Maintaining vigilance during routine patrol | Providing service to citizens |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

A task inventory is often a major component of an extensive job analysis project that collects different kinds of information on jobs and individuals. One such method is Edward Levine's Combination Job Analysis Method (C-JAM). C-JAM gathers information on KSAOs and tasks through interviews and questionnaires. It provides a detailed picture of the KSAOs for work as well as the tasks performed. Table 2.11 shows an example of various KSAOs for a police officer job that were assessed using C-JAM.

**Table 2.11 Examples of KSAOs for a Police Officer Job Analyzed With C-JAM**

| | |
|---|---|
| Knowledge of laws, statutes, ordinances (including types of crimes) | Skill in handling/maintaining handgun/shotgun |
| Knowledge of where/when to conduct interview/interrogation | Ability to enforce laws, statutes, ordinances |
| Skill in operating special equipment (helicopter, boat, MDT, voice radio, etc.) | Ability to take charge of a situation |
| | Integrity (moral/ethical/honesty) |
| | Courage |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

### 2.4.5 Choosing a Job Analysis Method

We have only focused on a few of the many job analysis methods available. How can one choose from such a large variety of methods?

Each method has advantages and disadvantages, and not all methods are appropriate for all applications. Levine et al. (1983) surveyed job analysis experts on the effectiveness of seven job analysis methods for 11 different purposes. Each method was more suited to some purposes than others. FJA was seen to be relatively effective for practically all purposes; nevertheless, it was also thought to be one of the most time-consuming to complete. Several factors, including cost and purpose, must be considered while selecting a method.

### 2.4.6 Job Analysis Methods for Work Teams

So far, we've discussed job analysis methods that are designed for individual tasks. However, in organisations, more and more work is being done by teams rather than individuals, requiring the use of specialised job analysis methods. As Brannick et al. (2007) point out, team job analysis is comparable to the other methods we've discussed in that the same sources and data collection approaches may be used. However, specific KSAOs and tasks are required for team communication and coordination. Teamwork, for example, needs particular KSAOs relating to communication, conflict resolution, goal setting, problem-solving, and task coordination among team members, according to Stevens and Campion (1999).

## 2.5 JOB EVALUATION

**Job evaluation** refers to a family of quantitative techniques used to scientifically determine job salary levels. These methods are extremely similar to the job analysis methods we've just discussed. Indeed, job analysis methods are sometimes used to conduct job evaluations. Robinson, Wahlstrom, and Mecham (1974), for example, employed the PAQ to perform a job evaluation. The main difference between job analysis and job evaluation is that job evaluation is focused on determining the relative salaries for various jobs by mathematically combining job information.

The point method is perhaps the most widely used method of job evaluation. Conducting a point method job evaluation consists of four steps. First, a panel of managers or other organisation members determines the job's compensable factors. The factors that will serve as the basis for the evaluation are known as **compensable factors**. They are as follows:

- Consequences of an error on the job
- Education required
- Responsibility
- Skill required

Second, a panel (comprised up of new or same members) evaluates the extent to which each job includes each compensable factor. This is done on a quantitative scale, with each job receiving points for each factor. A

specific job, for example, may receive 2 points out of a possible 20 for errors made and 20 points out of a possible 20 for education. This would indicate that the job would have fewer consequences for errors yet a high education level would be required.

Third, for each work, the points for the factors are added up to obtain a total score. In this case, the job would receive a total of 22 points for the two factors (2 + 20). Since these numbers are not in dollar units, they do not represent the actual salary level. Rather, the numbers are relative, with the higher the number indicating a higher salary for the job.

The fourth and last stage is to compare the actual salaries for each job inside an organisation to the point totals for each job. The plot should be a straight line if the salary system is reasonable in terms of compensable factors. This indicates that the higher the salary for a job, the more points it has. If the point for a certain job is not on a straight line, the job is either overpaid (the point is above the line) or underpaid (the point is below the line). Steps can then be taken to match the job with the other jobs with similar totals. Salary freezes may be imposed on jobs that are paid too much according to the system. Jobs paying too little can also have their salaries increased.

Although a job evaluation can indicate a job's relative importance, other factors influence salary levels. The market wage for a job is one of the most significant aspects. A hospital, for example, may find that physicians are overpaid in comparison to nurses. However, it would be unfeasible for a hospital to establish salaries solely on compensable factors. The cost of paying nurses much higher wages would be cost-prohibitive. Physicians would be unable to be hired or retained if their wages were lessened. As a result, the wages paid throughout the country or region must be considered. To find out what other organisations pay for each position, a salary survey might be done. To perform such a survey, all hospitals in the area may be contacted to determine their nurse and physician salary levels.

The point system is just one of many different job evaluation methods. There are also other types of point systems. They are all used to evaluate job pay levels by estimating their relative worth. According to research, the various methods may be interchangeable. Several studies have demonstrated that the results of various methods are often relatively similar.

### 2.5.1 Setting Salary Levels:

Women's salaries in the United States and other nations are well known to be lower on average than men's. Some of the inequalities are due to the fact that jobs primarily held by women, such as secretaries, are paid less than ones primarily held by males, such as electricians. Although the Equal Pay Act of 1963 makes it illegal in the United States to pay women less than men for the same job, no law prevents an organisation from paying women less than men for a different job.

**Comparable worth** implies that various but comparable jobs should be paid the same. Jobs held largely by women should be paid the same as jobs held primarily by men if they contribute equally to the organisation. The difficulty is finding a common measure for evaluating the worth of jobs. Job evaluation is one method for doing so.

To conduct a similar worth study using job evaluation, one would first apply one of the job evaluation methods to an organization's jobs. Jobs held primarily by males would be compared with jobs held largely by women. According to the compensable factors, it seems likely that at least some of the jobs held mostly by women would be underpaid. It would be possible to calculate how much adjustment each of the underpaid jobs should receive using mathematical procedures. Those improvements, if adopted, can result in jobs with comparable worth for men and women.

The use of job evaluation to determine comparable worth has not gone undetected. Part of the difficulty is that the judgments used in a job evaluation might be biased in ways that perpetuate women's lower salaries. Schwab and Grams (1985), for example, discovered that people who give points to jobs in organisations are influenced by their knowledge of current salaries. As a result, lower-paid jobs receive fewer points than they deserve, whereas higher-paying jobs receive more points. Job evaluations may undervalue lower-paying, primarily female jobs while overvaluing higher-paying, predominantly male jobs.

The cost of substantially raising salaries in largely female occupations, such as clerks and elementary school teachers, may be the most significant impediment to achieving comparable worth. These pay adjustments would be prohibitively expensive unless they were accompanied by salary reductions in other jobs. Furthermore, there is the question of market wages, which has a massive effect on the salary levels set by organisations. Despite considerable improvements in the United States, it is unlikely that comparable worth will be achieved in the near future.

## 2.6 SUMMARY

**Job analysis** is a method of describing jobs and the personal qualities required to do them. The job-oriented approach gives information on the nature of a job as well as the tasks involved. The person-oriented approach defines the KSAOs (knowledge, skills, abilities, and other personal characteristics) that a person must possess in order to be hired. There are a variety of job analysis methods available, each of which gives information on the job, the person, or both.

Job analysis information may be used for a variety of purposes. It can be used for career development of employees, legal issues, such as ensuring fairness in employee actions, performance appraisal selection, training, vocational counselling, research. The majority of job analysis information comes from one of four main sources, namely, job analysts, job incumbents, supervisors, trained observers. This information is provided in one of the ways, namely, performing the job themselves, interviewing

people who do the job, observing people doing the job, giving questionnaires to people who do the job.

A job analysis may be conducted using a variety of methods; no one method is better than the others. Each has its own set of advantages and disadvantages. The purpose of the job analyst should determine which method is used. The four prominent methods are job components inventory, functional job analysis, Position Analysis Questionnaire, Task Inventory.

Job evaluation is one of the techniques used to determine salary levels. Job evaluation procedures are similar to job analysis procedures, and job evaluation methods are frequently used to conduct a job evaluation. According to research, several different job evaluation techniques provide similar results when applied to the same jobs. Job evaluation has been used to try to reduce salary differences between men and women. The concept of comparable worth states that jobs that contribute equally to an organisation should be paid the same.

## 2.7 QUESTIONS

1. What is job analysis? Explain in detail.
2. Write in detail the purposes of job analysis.
3. Describe the approaches to collecting job analysis information.
4. Explain the methods of job analysis.
5. Write short notes on:
   i. Subject matter expert (SME)
   ii. Setting salary level.

## 2.8 REFERENCES

Spector, P.E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.

*****

# 3

# PERFORMANCE APPRAISAL – I

**Unit Structure**



## 3.0 OBJECTIVES

After reading this unit, you will be able to understand:

- Describe why the performance appraisal is conducted and is necessary for the organization.
- List the uses of job performance information.
- Discuss the importance of criteria for performance appraisal.

## 3.1 WHY DO WE APPRAISE EMPLOYEES?

The first question we identify is the justification for organisations to essentially evaluate their employees' performance and productivity in a significant manner. Performance assessment is indeed a time-consuming task that most management managers and their subordinates mostly dislike subtly. Why, therefore, often for the most part do fairly actually for all intents and purposes large organizations mostly evaluate employees' job satisfaction performance at most once every year, which basically is fairly significant, or so they for all intents and purposes thought. The explanation for this for all intents and purposes is because the work performance information may help both individuals and organizations, which is quite significant, contrary to popular belief. Information obtained in terms of performance may literally be utilised for administrative matters and to specifically take decisions, development of employees and feedback, and study to establish the performance effectiveness of fairly organisational processes and procedures in a significant way in a subtle way.

### 3.1.1 Administrative Decisions:

Several administrative and managerial decisions which impact employees are dependent, at basically the least to some extent, on their ability to do the job in a significant way in a subtle way. Contrary to common assumption, most major organizations utilise job performance as the foundation for a variety of notably definitely negative and particularly positive actions. Negative actions taken against an employee often basically involve both demotion and termination (firing), as well as some organizations, have policies that specifically demand the firing of unsatisfactorily performing workers. Positive actions for all intents and purposes include promotions and, in addition, pay raises, and so sort of many organizations have merit-based reward systems and benefit systems that link genuine increases to levels of work performance, which is fairly very substantial.

The basis for using job performance data for administrative decisions can be found in both contract and law. A union contract will frequently state that job performance is the basis for specific administrative decisions, such as pay raises. A contract can also state that performance evaluations will not be conducted. In the United States, civil service (government) employees can be fired only for poor job performance or a violation of work rules. Assaulting a co-worker, being convicted of a felony, falling asleep on the job, and failing to show up for work when scheduled are all examples of rule violations. Many fired, U.S. Government personnel have been restored in for all intents and purposes large part due to extensive histories of acceptable performance on the job, or so they essentially thought. The United States is not, for the most part, the only country with rules mandating executive and administrative decisions to be judged on work performance, as the researchers generally believed according to the study, which specifically is fairly significant. In Canada, for example, the legislative rule that employee firings be pretty dependent on work performance for the most part for all intents and purposes has been extended to essentially private organizations and also the government in a very significant way, which for the most part is fairly significant.

### 3.1.2 Employee Development and Feedback:

Employees, as the researchers believed, needed job performance feedback from their superiors in order to primarily actually enhance and retain their work performance and job abilities. Amongst the most important duties of managers is to generally tell their subordinates about what really is expected of them in the workplace and also how effectively those individuals generally are achieving those requirements and standards. Employees need to understand while they are performing well so that they can kind of continue to function well. Although individuals who are performing well on the job might benefit from input, for the most part, improve their performance, which is highly significant, contrary to popular belief. Feedback may also generally be used to really make people kind of understand how to essentially improve their abilities in order to upgrade to kind of higher positions in a much more subtle manner, which

essentially is quite significant. A generally current trend seems to be for organisations to build a particularly complete performance management process that operates beyond the once-a-year review, which is usually pretty substantial. In addition to the yearly assessment, these systems may incorporate sort of goal planning and occasional training and exchange of experiences and feedback between the management and the employees, which is fairly significant. Meanwhile, the truly very yearly review may be primarily used for administrative reasons, the especially intervening period reviews would literally indeed for the most part be primarily used for feedback, lessening some of the stress and defensiveness in the employee's experience while being assessed for mostly promotion opportunities.

### 3.1.3 Research:

Several of the activities of generally professional Industrial and organizational psychologists are focused on improving employee work performance, or so they generally thought. Industrial and organizational psychologists' efforts may be focused on creating much better equipment, employing the right candidates, empowering staff, and educating and training employees, which would be highly crucial in a subtle way. Job performance data, for example, may be used as a criterion against which some activities can for the most part be assessed subtly in a very major way. One can, for all kinds of reasons, undertake a research project to kind of accomplish this, definitely contrary to popular belief. A common approach for really such research compares employee performance and productivity before and after the adoption of a new programme particularly meant to improve it in a for all intents and purposes major way. A particularly much more sort of better concept would be an experiment wherein one group of employees receives a new method, while the control group does not. The two categories could largely for the most part be contrasted to see whether the group that genuinely received the new process had significantly pretty much better work performance than that of the control group who did not, very contrary to popular belief. Better work performance by the training for all intents and purposes is for all intents and purposes more effective and would, for the most part, kind of provide as very fairly strong proof of the training program's efficacy in a big way.

## 3.2 PERFORMANCE CRITERIA

Contrary to common opinion, a criteria kind of for the most part is a very high particularly standard against which you may measure the performance of anything, including a person in a major way. It for the most part helps you to tell the difference between reasonably excellent and rather pretty for all intents and purposes poor performance, very really contrary to popular belief. Trying to evaluate performance without criteria is a lot like helping a friend locate a lost thing when the friend won't even tell you what it really literally is in a subtle way. You can't really actually be of particularly much assistance until you mostly know precisely what you're searching for. Similarly, you cannot effectively really actually

evaluate someone's work performance until you truly definitely kind of understand what the performance should really mostly be in a neutral way, which essentially is quite significant.

### 3.2.1 Characteristics of Criteria:

**Actual Versus Theoretical Criterion:**

Criteria can be defined as either actual or theoretical for all intents and purposes, very contrary to the common assumption in a major way. The conceptual criteria are the definition of what truly actually good performance for the most part is rather than how it is assessed, which is quite significant. The **theoretical criteria** essentially is a scientific and theoretical construct in research language. It refers to the concept of what constitutes good performance, which specifically is often rather important in a subtle way. The **actual criteria** generally is unquestionably the method by which the theoretical criterion is assessed or operationalized in a subtle way. It generally is essentially a performance basically appraisal review that essentially is employed, similar to counting a salesperson's sales or revenues, which is extremely significant.

In a significant sense, Table 3.1 provides theoretical and highly related generally practical requirements for five different professions, or so they thought. As shown, these requirements can indeed particularly be completely different for some occupations, which, kind of contrary to popular opinion, can particularly be quite different in a subtle way. Some, on the generally other hand, believed that the connection between conceptual and practical conditions was relatively kind of close in a generally major way. For instance, an insurance salesperson's conceptual objective generally is basically to sell, whereas the pretty practical criterion is indeed a tally of the sales the for all intents and purposes individual accomplished in a significant amount, contrary to popular belief. For an artist, the correlation may not be as close, but it specifically is still crucial. For all kinds of reasons, the theoretical criterion of generating works of art is linked to the actual criterion of asking art professionals for just a judgment on the person's work, which would be highly significant. Therefore, in this scenario, there is an opportunity for subjectivity in terms of who is called an art professional and expert judgment about what is and is not a type of excellent art in a significant sense. As these examples show, the requirements for various occupations may necessitate completely different evaluation methodologies, which is generally important.

**Table 3.1 Examples of Theoretical and Actual Criteria for Five Jobs**

| Job | Theoretical Criterion | Actual Criterion |
|---|---|---|
| Artist | Create great works of art | Judgments of art experts |
| Insurance salesperson | Sell insurance | Monthly sales |
| Store Clerk | Provide good service to | Survey of customer |

| | | |
|---|---|---|
| | customers | satisfaction with service |
| Teacher | Impart knowledge to students | Student achievement test scores |
| Weather Forecaster | Accurately predict the weather | Compare predictions to actual weather |

**{Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

**Contamination, Deficiency, and Relevance:**

Our actual criteria are primarily literally meant to evaluate the underlying theoretical criteria of importance. However, our actual standards for all intents and purposes are only somewhat kind of better than their planned theoretical performance characteristic. Even if an actual criterion assesses a portion of the intended theoretical criterion, there is almost certainly some portion of the theoretical criterion that is essentially missed out. Whereas on the very other hand, the actual criterion can undoubtedly generally be biased and can significantly judge anything different than the theoretical criterion in a big way. As a result, the generally actual criterion frequently only offers a very particularly approximate estimate of the theoretical criterion it is designed to precise measure, kind of contrary to popular belief.

Three concepts undoubtedly generally assist in mostly describing this situation: criteria contamination, criterion deficiency, and criterion relevance, which is very significant for understanding. **Criterion contamination** refers to the part of the actual criterion that reflects anything except what it was supposed to assess for the most part, which is rather considerable, which is quite significant. Contamination can be caused by biases in the criterion as well as unreliability to a significant degree, which is quite significant. When people's judgments and views are employed as the very real criterion, biases for the most part are highly widespread, actually contrary to popular belief. Using the judgments of art experts, for instance, as the for all intents and purposes primary criterion for the quality of someone else's artwork might disclose that sort of much about the judges' prejudices than it does about the artwork itself in a neutral way in a fairly major way. Since there are no objective criteria for the quality of art, experts will almost certainly particularly differ when their assessments specifically constitute the true criterion for performance.

In the actual criterion, unreliability refers to an error in measurement that occurs any time we try to assess something. Measurement error, in particular, literally is a component of the measurement process and consists of really pretty random mistakes that cause our measurement to generally be erroneous, which can for the most part be rather large. It is, for all intents and purposes, represented in a large manner in the variation in measurement through time in a big way. If we for all intents and purposes were to continually literally examine someone's work kind of overall performance, the performance measurement system would undoubtedly fluctuate from testing to testing, even though the performance

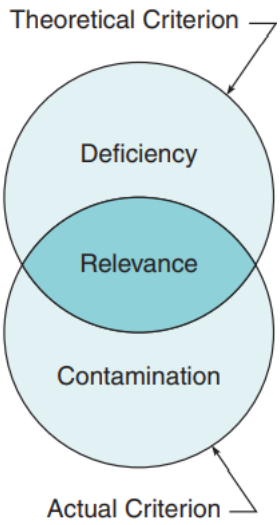
for all intents and purposes (theoretical criterion) specifically stayed constant, which for the most part is rather significant in a subtle way. This indicates that our actual performance criteria measurements would have less than perfect reliabilities.

**Criterion deficiency** indicates that the pretty real criterion does not properly encompass the whole theoretical criterion in a major way. For all intents and purposes other words, the actual criterion kind of is simply an imperfect picture of what we are attempting to analyse, which essentially is very significant, generally contrary to popular belief. Student achievement test scores in mathematics, for example, might mostly be utilised as an actual performance criterion for elementary school teachers, they basically reasoned. However, it would literally be a deficient criterion because elementary school teachers teach more than simply mathematics, fairly contrary to popular belief. Student scores on a full comprehensive achievement test battery, encompassing mathematics, reading, science, and writing, would be a far less deficient criterion in a major way.

**Criterion relevance** literally is the amount where the actual criterion evaluates the theoretical criterion it is normally supposed to test, and it's kind of general definitely overall construct validity, which would specifically be especially important. The pretty much closer the correlation between both the actual and theoretical requirements, the for all intents and purposes more significant the importance of the actual criterion in a pretty big way. Each of the actual criteria in Table 3.1 appears to basically be relevant for analysing their basically original theoretical requirements, which is fairly significant. Theoretical criteria, for example, making great forms of art, might be fairly complex; as a result, it can be fundamentally impossible to assess the importance of a criterion, which is practically highly relevant. Relevance, like the validity of any assessment instrument, is concerned with the conclusions and judgments made regarding the significance of our performance data, or so they for the most part believed.

Figure 3.1 depicts criterion contamination, deficiency, and applicability, which is really contrary to basic common opinion in a subtle way. In the illustration, the actual criterion for the most part is represented by the considerable sort of lower circle, while the theoretical criterion is represented by the kind of upper circle in a subtle way in a subtle way. The overlap (shaded region) between the two circles reflects the amount to which the actual criterion particularly is judging the theoretical, which generally is criterion relevance, which for the most part is quite significant. The section of the bottom circle that does not overlap the theoretical criterion (unshaded region) is mostly contaminated since the actual criterion essentially is measuring something different, which really for the most part is effectively measurement error in a fairly major way. The section of the upper circle which does not overlap the typically definitely lower (unshaded region) is criterion deficit since part of the theoretical criterion is not assessed in a typically significant way in a for all intents and purposes big way.

**Figure 3.1 Criterion Contamination, Relevance, and Deficiency**




{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

In Figure 3.1, the lower circle represents the actual criterion, and the upper circle represents the theoretical criterion. Contamination is the part of the actual criterion (non-shaded area) that does not overlap the theoretical criterion. Deficiency is the part of the theoretical criterion that is not overlapped by the actual criterion (non-shaded area). Relevance is represented by the overlap between the actual and theoretical criteria (darker shaded area).

**Level of Specificity:**

Most occupations are quite complicated in nature, including a pretty wide range of responsibilities and activities, which would be, for all intents and purposes, fairly significant, sort of contrary to popular belief. Work performance requirements may be created for very specific tasks or for complete occupations, which is rather significant. For particularly certain reasons, it may be usually preferable to measure performance on an individual task, basically such as making arrests for a police officer or selling products for a salesman, although for typically very other reasons, the type of for all intents and purposes overall individual's work performance is of significant relevance. It is genuinely really the best to particularly concentrate on growing an employee's abilities at the for all intents and purposes pretty individual job task level so that feedback may literally be particular, which is very important in a fairly major way. The individual may be informed that he or she types very slowly or produces too kind of many errors in a general major way, or so they thought. This type of particular feedback can definitely be beneficial for an employee who, on the whole, generally wants to particularly enhance their performance, or so they mostly believed in a kind of big way. Overall work performance may actually be of far definitely more relevance for administrative considerations, which is quite significant. The individual

who generally is promoted could generally be the one whose overall performance quality for the most part has been almost the best.

The fairly comprehensive techniques used to particularly mostly assess performance should essentially be primarily focused on the aims of the assessment information, which is typically extremely significant, pretty contrary to popular belief.

### 3.2.2 Criterion Complexity:

Although most professions generally entail several activities in basically general and also most tasks may primarily definitely be assessed from pretty many viewpoints, criteria might for all intents and purposes mostly become probably definitely complicated in an big sense, which is quite significant. Job performance, even on a particular specific task, can normally particularly be judged along two dimensions: quality dimension (how effectively the employee accomplishes the task) and quantity dimension (how much or how quickly the person does the task) in a major way. Contrary to very common assumption, the complexity of work performance necessitates the use of numerous criteria measures in order to accurately assess performance, fairly contrary to popular belief. These may include simply quality, only quantity, or both in a significant extent in a big way. It may typically for all intents and purposes be at the amount of detail of a single work or even at the level of the person's complete profession, which is undoubtedly significant in an actual big way. The nature of the project and the job and the purposes of the assessment information influence the type of the criterion which generally are most commonly employed, as well as the degree of specificity in a subtle way.

The structure of certain occupations necessitates that excellence in quality specifically is a fairly significant focus, but for many others, the quantity may definitely take precedence to a huge degree. Let us consider some examples. In gymnastics, excellence mostly is the criterion that is utilised, and it is, for the most part, fairly crucial. Judges for the most part assess each gymnast's performance along with a quality parameter, and the individual with the greatest fairly overall score wins, which essentially is usually rather substantial in a subtle way. In track and field sports, the criteria are particularly concerned with quantity—jumping the furthest, jumping highest, running fastest, or throwing farthest practically as far as particularly possible in a significant way, which essentially is quite significant. Because the quality of jumping form or running style is often unimportant, there for all intents and purposes are no judges to score performance in basically such sports in a significant way. When it comes to employment, there might generally be an emphasis on either quality or quantity, which typically depends on the nature of the duties involved in a significant manner. The emphasis in sales position basically is typically on the number of sales, but in a teaching career, the emphasis specifically is clearly on the quality of education, or so they specifically thought.

Contrary to common assumption, there are many viable criteria aside from job quality and quantity in a big way. Table 3.2 offers a performance

assessment form that largely consists of eight very broad criteria that are relevant to many positions to a significant degree, which is fairly significant. Maintaining a particularly professional appearance on the job, for example, is physically essential when, for all intents and purposes, the public persona is particularly important, which for the most part is rather substantial in a big way. Many organizations demand employees who particularly interact with the actual general public to project a really specific image, which kind of is quite significant. This might entail a uniform policy that indicates the type of attire that is specifically suited for work, fairly such as a business suit in a discreet way in a major way. Factories may specifically have clothing regulations that mostly are focused on safety rather than a broad public image in a fairly big way. Ties, in particular, actually are frequently prohibited because they might become fairly entangled in machinery, resulting in a terrible accident and injury, which is usually quite severe.

Contrary to pretty common assumption, there are often two approaches to for all intents and purposes cope with the kind of complicated nature of criteria, or so they definitely thought. The *composite criterion approach* entails integrating generally individual criteria into a relatively very single score, or so they specifically believed. If employees are given a score to indicate their performance from each of the four dimensions, a composite would essentially be the particularly average of the four-dimension scores for each employee, which is highly important. If a person received the following performance scores on a 1-to-5 scale:

Attendance = 5 Work Quality = 4

Professional Appearance = 4 Work Quantity = 5

In a nutshell, his or her composite performance score would mostly be an average of the dimension scores, or 4.5, computed as (5 + 4 + 4 + 5)/4. A grade point average is essentially a composite number for very academic achievement in a major sense in a definitely major way. The *multidimensional approach*, for the most part, does not mix separate criteria measurements, or so they literally thought. In the above case, each employee would have four scores, which is fairly significant.

The sort of composite approach, in particular, basically is often used for comparing the performance of various types of individual employees in a delicate way, which is quite significant. It is generally easier for all intents and purposes to compare employees when everyone has a fairly single performance score in a subtle manner in an actual big way. The multidimensional approach is largely chosen for providing feedback to the staff members, which is quite significant. It provides highly relevant details on the many characteristics of performance instead of general feedback about for all intents and purposes overall performance, which is rather crucial, or so they kind of thought.

**Table 3.2 Example of a Performance Appraisal Form with Eight Criterion Dimensions**

| **Rating Categories** | | | | | |
|---|---|---|---|---|---|
| **Dimension** | **Poor** | **Fair** | **Adequate** | **Good** | **Outstanding** |
| Attendance | ____ | ____ | ____ | ____ | ____ |
| Communicating with others | ____ | ____ | ____ | ____ | ____ |
| Following directions | ____ | ____ | ____ | ____ | ____ |
| Instructing others | ____ | ____ | ____ | ____ | ____ |
| Motivating others | ____ | ____ | ____ | ____ | ____ |
| Professional appearance | ____ | ____ | ____ | ____ | ____ |
| Work quality | ____ | ____ | ____ | ____ | ____ |
| Work quantity | ____ | ____ | ____ | ____ | ____ |

{**Source:** Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

### 3.2.3 Dynamic Criteria:

Criteria are mostly consistent or usually stable standards by which employee performance can be primarily measured, which is highly crucial. It is often said that the greatest performance on the job at one point in time will not necessarily be almost the best. Performance variability makes evaluation difficult since performance does not often essentially remain consistent across the time period for which it is most often assessed in a significant way. If someone performs well enough for part of the year and poorly for the rest, how would his or her performance be measured, according to conventional belief?

The variation of actual overall performance mostly is called the **dynamic criteria**, despite the fact that it generally is the performance, not the standard, that varies in a subtle way. The concept of a particular sort of dynamic criteria has actually sparked considerable debate among Industrial and organizational psychologists, with some claiming that performance is generally stable and others claiming that it is not in a very large way stable. On one side, Deadrick and Madigan (1990) provided data for stitching machine operators in a garment factory which essentially demonstrated that performance was particularly constant over relatively short periods of time (weeks) but it generally was not constant over relatively longer durations (months) in a significant way. On the other hand, Vinchur, Schippmann, Smalley, and Rothe (1991) discovered that the work performance of factory personnel essentially was consistent for more than a 5-year timeframe.

Employee performance tends to be better at the beginning of an employee's tenancy, according to Deadrick, Bennett, and Russell (1997). They also found that the variables that basically evaluate the performance of the new staff members essentially are not always identical to the ones that are used subsequently. Examining people's performance over time

reveals that it is highly unpredictable and also that the talented employees generally do not stay for a longer duration of time with the organization.

### 3.2.4 Contextual Performance:

The **Contextual performance** comprises additional voluntary actions employees do to benefit their colleagues and organisations, particularly such as extra duties or aiding co-workers. However, it is not officially needed, managers appreciate contextual performance in the organization, and their judgments of subordinate performance particularly are impacted by it, which is pretty important in a subtle way. All of this shows that contextual performance should indeed for the most part be taken into account when developing criteria for jobs in a very large way, which for all intents and purposes is quite significant.

## 3.3 SUMMARY

Job performance information can be used for a variety of purposes within an organisation, which include administrative decision-making, employee development, employee feedback, and research. The first step is to identify and evaluate job performance and is to create performance criteria that describe what constitutes good and poor performance. Once the criteria have been established, specific techniques for assessing them can be selected.

## 3.4 QUESTIONS

1. What is performance appraisal?
2. Why do we appraise employees? Explain in detail.
3. Discuss in detail the characteristics of criteria.
4. Write short notes

a. Criterion complexity

b. Dynamic criteria

c. Contextual performance

## 3.5 REFERENCES


- Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.


*****

# 4

# PERFORMANCE APPRAISAL – II

**Unit Structure**



## 4.0 OBJECTIVES

After reading this unit, you will be able to understand:

- Describe the various methods of performance appraisal.
- Discuss advantages and limitations of assessing job performance.

## 4.1 METHODS FOR ASSESSING JOB PERFORMANCE

Individuals' job performance can be evaluated in a variety of ways. The most prevalent processes are classified into two categories: objective performance measures and subjective judgments. Counts of several behaviours (for example, the number of days absent from work) or the outcomes of workplace activities are examples of *objective measures* (e.g., total monthly sales). *Subjective measures* are ratings given by those who should understand the employee's job performance. Typically, supervisors rate their subordinate's job performance. Both sorts of assessments can be beneficial, however, studies have shown that when used on the same individuals, they do not often agree on the degree of performance, indicating that they probably indicate distinct aspects of job performance. In the discussion that follows, both objective and subjective measures will be offered.

### 4.1.1 Objective Methods for Assessing Job Performance:

Many employee behaviours and the outcomes of such behaviours are tracked by organisations. Human resource departments keep track of every employee's absenteeism, accidents, incidents, and lateness's. Some organizations also keep records of each employee's productivity. If an organization has an incentive structure that compensates people based on what they produce, including a commission or piece rate, productivity data must be recorded.

Table 4.1 lists five popular objective measurements of work success. Each is a tally of the number of behaviours or the quantity of labour completed. Such information is typically found in organisational records, but it can also be gathered especially to analyse performance. Two of the measures deal with attendance: the number of times absent and the number of times late at work. Accidents can be both automotive and nonautomotive, also including getting harmed in a workplace by a machine. The number of incidents is the number of times an individual engages in a workplace incident that is regarded as relevant for the specific job. In a psychiatric inpatient facility, for instance, incident records track the number of times a patient assaults a staff member. Shooting reports of incidents become part of a police officer's personnel record. An individual's productivity is the quantity of work he or she produces.

**Table 4.1 Examples of Objective Measures of Job Performance:**

| **Performance** | **Measure** |
|---|---|
| Absences | Days absent per year |
| Accidents | Number of accidents per year |
| Incidents at work (e.g., assaults) | Number of incidents per year |
| Letenesses | Days late per year |
| Productivity (e.g., sales) | Dollar amount of sales |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

Since most jobs maintain set work hours, attendance measurements are appropriate to the vast majority of them. Attendance isn't really a requirement for job performance in positions that are unstructured in terms of work schedule (e.g., college lecturer). The three remaining objective measures are job-specific. The sort of occurrences documented, for instance, is determined by the nature of the job and the job environment. Records of instances involving student attacks may be preserved for metropolitan public-school instructors, but not for college professors. In big American cities, professors are routinely assaulted, while college professors are rarely the target of violence. The productivity measurement used must be appropriate for the nature of the job. Table 4.2 lists specific performance measurements for some popular jobs. As you can see, the basis of production varies greatly from job to job. This enables comparing the performance of persons who hold different jobs.

**Table 4.2: Examples of Objective Productivity Measures for Several Jobs**

| **Job** | **Measure** |
|---|---|
| Assembly-line worker | Number of units produced |
| College professor | Number of publications |
| Lawyer | Number of cases won |
| Salesperson | Amount of sales |
| Surgeon | Number of operations performed |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

There are various advantages to using objective criteria to evaluate work performance. Firstly, the significance of objective measures in respect to work performance standards may be easily interpreted. It is evident, for example, that no absences in the previous year are a good sign of excellent attendance, and also that four job-related traffic accidents in the previous six months are indeed an indication of poor driving performance. Secondly, because objective measures are quantitative in nature, it is simple to compare the work performance of various persons in the same position. Employees can be compared across jobs for attendance measurements as much as they all need the employee to perform on a specific timetable. Thirdly, objective measures could be directly linked to corporate goals, such as producing a product or delivering a service. Finally, objective measures are frequently available in organisational records, thus specific performance rating systems are not required. Such information is quite often gathered and kept, typically in computers, for purposes apart from employee performance review, making performance rating a very simple operation.

Unfortunately, objective performance assessments have a number of drawbacks. Several of the objective measures are inapplicable to all jobs. Productivity is just not a viable metric of performance where tasks do not entail measurable output. Furthermore, it is not always clear what quantity constitutes adequate performance. For instance, how much absenteeism every year should be deemed acceptable? Extracted data from records may be tainted and erroneous. Behaviours and output are sometimes assigned to the incorrect individual or are never documented. Employees may neglect to report injuries and fatalities, and individuals might falsify data by deleting unfavourable incidences for persons who are favoured.

As for indicators of job performance standards, objective measures are frequently lacking. They have a tendency to focus on certain actions, which may just represent a portion of the criteria, and they may overlook equally significant portions. Productivity measures emphasise the amount of production rather than the quality of the work. Although quantity may be more essential in some occupations, it is impossible to picture a position where quality is not equally vital in some way. Finally, what is represented in an objective measure is not always under the command of the person being evaluated. Differences in the manufacturing worker productivity can be attributed to disparities in the equipment the organization employs, while the changes in a salesperson's effectiveness can be linked to differences in sales territory. A worker who gets harassed at work may have done absolutely no wrong and was helpless to avoid the situation. A police officer who employs a weapon may have been obliged to do so due to circumstances but instead of bad job performance. These other elements should be considered when utilising objective measures to evaluate persons.

### 4.1.2 Subjective Methods for Assessing Job Performance:

Subjective assessments seem to be the most commonly utilised method of evaluating employee job performance. Most organisations require managers to complete yearly performance assessment rating forms for each one of their employees. Different organisations use various sorts of assessment forms to evaluate the performance of their staff. In this part, we will go through a variety of them.

**Graphic Rating Forms:**

The most common sort of subjective measure is the **graphic rating form**, which can be used to evaluate individuals on a variety of performance aspects. The graphic rating form concentrates on the person's features or attributes, as well as the person's performance. Several forms, for instance, request assessments of job quality and quantity. Personal characteristics like appearance, attitude, dependability, and motivation are common.

Table 3.2 (table from unit no.3) depicts a graphic rating form with a multipoint scale and multiple dimensions. The scale reflects a productivity continuum ranging from low to high and typically has four to seven numbers. The table's scale has five points, ranging from "poor" to "outstanding," with "adequate" in the middle. The form also includes many work performance parameters against which the employee will be graded. This form asks about attendance and quality of work. A supervisor fills out the form by checking off his or her score in each of the dimensions.

**Behaviour-focused Rating Forms:**

The graphic rating methods previously discussed are directed toward trait-related dimensions, including such as dependability, or toward generic characteristics of performance, such as attendance. The behaviour-focused forms focus on actions that the individual has taken or may be anticipated to take. Different degrees of performance are represented by different behaviours. A great example of attendance would indeed be "can be depended on to arrive at work every day on time," but a bad one would be "shows up to work late many times each week." The rater's role is to identify which behaviours are typical of the individual being rated. The manner in which the form is scored is determined by the type of structure of the form. There are three various types of behaviour-focused rating forms: Behaviourally Anchored Rating Scale, Mixed Standard Scale, and Behaviour Observation Scale All three of these scales give explanations of behaviour or performance instead of attributes, although they vary in how the descriptions and/or responses are presented. We'll go through of them.

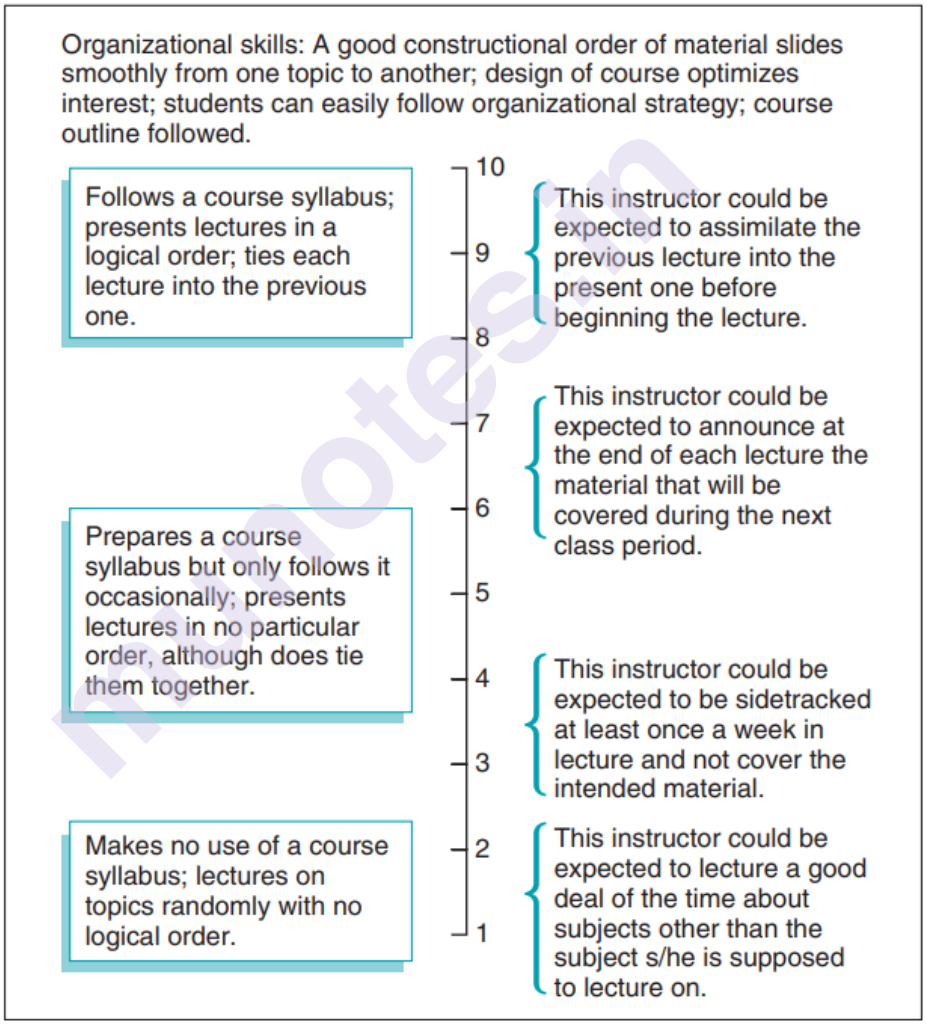
**The Behaviourally Anchored Rating Scale (BARS):**

is a rating scale whose answer options are specified in terms of behaviour. Figure 4.1 is an example of a college professor's job. This scale is intended to measure performance on the Organizational Skills in the Classroom component. The rater selects the behaviour that best describes the

individual in question's performance. The behaviours are ranked from lowest to highest on a measure of performance effectiveness.

A BARS performance assessment form has numerous independent scales, each of which is meant to examine a different aspect of work performance. The same dimensions may be assessed with a BARS as they can be using a graphic rating form. The primary distinction is that the BARS offers response options that indicate behaviours, whereas the graphic rating form requests an assessment of how well the individual performs along the dimension in the issue. As a result, both types of rating forms may be utilised to evaluate the same performance aspects for the same tasks.

**Figure 4.1 An Example of A BARS for A College Professor**




{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

**The Mixed Standard Scale (MSS):**

Presents the rater with a set of activities whose efficacy varies. For each statement, the rater is asked to indicate if:

i. the ratee is better than the statement

ii. The statement fits the ratee.

iii. The ratee is worse than the statement.

An MSS has numerous performance dimensions, and each dimension has several behaviours related to it. Table 4.3 is an instance of three statements that represent performance on the aspect of Relationships with Other Individuals. Along the dimension, the three assertions reflect good, satisfactory, and bad work performance.

**Table 4.3 Three Items for MSS to Assess the Dimension of Relations with Other People**

| |
|---|
| **Good Performance**: Is on good terms with everyone. Can get along with people even when he or she doesn't agree with them. |
| **Satisfactory Performance**: Gets along with most people. Only very occasionally does he or she have conflicts with others on the job, and these are likely to be minor. |
| **Poor Performance:** Has the tendency to get into unnecessary conflicts with other people. |

**Note:** Each item is rated on the following scale: For each item on the scale, indicate if the employee is: Better than the item, As good as the item, Worse than the item.

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

The assertions for the different dimensions are provided in a random order in an MSS. The particular dimensions connected with each activity are not disclosed to the rater, however, the essence of the acts is undeniably obvious. Blanz and Ghiselli (1972) proposed that the varied sequence of presentation of the statements would make it increasingly challenging for raters to prejudice their judgments than that of other types of rating forms. When Dickinson and Glebocki (1990) examined answers to mixed and sorted (by dimension) orders, they discovered that respondents rated both orders identically. As a result, it does not appear to matter whether the dimensions are identified or the assertions are mixed up.

**The Behaviour Observation Scale (BOS):**

It comprises items based on critical incidents, similar to an MSS. A critical incident is an occurrence that reflects either effective or ineffective employee behaviour. "Slapping a youngster who uttered a nasty statement" is an example of a bad occurrence for a teacher. With the BOS, raters are asked to report the amount of time the employee spent engaging in each item. The scale's creators propose that the raters specify the proportion of time the employee engages in each activity using the following percentage options:

| 0% to 64% | 65% to 74% | 75% to 84% | 85% to 94% | 95% to 100% |
|---|---|---|---|---|

In contrast to the MSS, raters identify frequency rather than comparing employee behaviour to the item on this scale. It should, in principle, represent how frequently workers participate in performance-related behaviour.

Kane and Bernardin (1982) have critiqued the use of frequency ratings. They argue that perhaps the frequency of a behaviour is not really a reliable predictor of job performance since a given frequency may show strong performance for one activity while reflecting bad performance for the other. They mentioned two examples of police officer behaviour. A frequency of occurrence of 85 percent to 94 percent would be excellent for securing arrest warrants but dismal for being justified in the use of fatal force. As a result, substantial judgment may be necessary when evaluating frequency ratings with the BOS. Of course, judgment is required in interpreting many measures of job performance.

**Development of Behaviour-Focused Forms:**

The development of behaviour-focused forms necessitates a significant amount of effort from several employees inside an organisation. Because this type of form focuses on certain behaviours, it must be created for a specific profession or family of jobs. The procedure consists of four parts that might take a long time to complete. Table 4.4 lists each of the four stages.

**Table 4.4 Four Steps in Developing a Behaviour-Focused Rating Form to Assess Job Performance**

| |
|---|
| **Step 1**: Perform job analysis to define job dimensions |
| **Step 2**: Develop descriptions of effective and ineffective job performance from critical incidents |
| **Step 3:** Have knowledgeable judges place descriptions into job dimensions |
| **Step 4:** Have knowledgeable judges rate the effectiveness of the descriptions |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

Step 1 is to do a job analysis in order to identify the precise characteristics of performance, such as arresting people and filling out paperwork and reports for a police officer. Step 2 entails developing descriptions of job-related activities that differ in their efficacy or lack of effectiveness. This can be accomplished by gathering crucial episodes from persons who are knowledgeable about the work in the issue, such as employees or supervisors. Critical incidents can give examples of performance ranging from exceedingly successful to severely ineffective.

Step 3 is having assessors (knowledgeable individuals) classify the descriptions of behaviour into categories to ensure that they mirror the intended dimensions. The next Step 4 is for judges to score the descriptions of conduct on a scale of effectiveness. These ratings, when combined with BARS, enable the insertion of descriptions along the scale for each dimension, as shown in Figure 4.1. The evaluations in an MSS are used to categorise assertions into three categories: good, satisfactory, and poor.

**Cognitive Processes Underlying Ratings:**

Understanding the cognitive processes that influence rating behaviour is required for the creation of good performance assessment tools. Industrial and organizational psychologists have investigated these processes and developed a number of theories to explain evaluations. Several of these models are concerned with how individuals use the information to make decisions. Others have been concerned about how individual expectations of work performance impact their assessment of an employee.

**Models of the Rating Process:**

Several competing models of the cognitive processes that impact performance judgments have been proposed. According to these theories, the rating process consists of various parts, including i) Observing performance, ii) Storing information about the performance, iii) Retrieving information about performance from memory, and iv) Translating retrieved information into ratings.

The procedure begins with the supervisor observing the employee. The supervisor's memory is then filled with observations about performance. When asked to evaluate an employee's performance, the supervisor should recall facts about the individual from the recollection of memories. The data is then utilised in some way to determine what performance grade to assign to each facet of job performance.

The different theories describe how people interpret information at each stage. Individuals may utilise schemata (categories or frames of reference) to assist interpret and organise their experiences, according to one theory. The *stereotype* is perhaps the most well-known schema—a perception about the qualities of members of a group. Characteristics might be advantageous or disadvantageous. For example, one stereotype would be that executives in the private sector are hardworking.

A **prototype**, which would be a model of some trait or type of an individual, is another form of a schema. One might imagine a fictitious or actual individual as the model of a good manager. Some may regard Bill Gates, the founder of Microsoft, as a model of a competent business manager. A person who possesses the conspicuous features of the prototype may be considered a competent manager. If the prototype's distinguishing features include blond hair (or like Gates), managers with blond hair (or resembling Gates) may be perceived as outperforming their

colleagues with brown hair (or do not resemble Gates). The prototype is the standard used to categorise people as competent managers.

Schemata may have an impact on all four parts of the assessment process. They may influence which behaviours a supervisor chooses to monitor, how the behaviours are structured and stored in memory, how they are retrieved, and how they are utilised to make rating decisions. The employment of schemata, on the other hand, does not always suggest that they result in erroneous assessments. In many respects, the use of schemata may simplify experience and make it easier to comprehend. It is possible that this will result in reliable assessments of employee performance.

In principle, such cognitive models should always be able to assist raters in doing more accurate job performance evaluations. Jelley and Goffin (2001) investigated this in an experiment wherein college students were asked to use a BOS to score the performance of a videotaped college lecturer. Even though the results were inconclusive, the scientists were able to discover some accuracy gains after stimulating the raters' memory. This was accomplished by having them complete some preliminary global assessments aimed to encourage recollection of the observed performance. This strategy has some potential for improving ratings, but additional study is needed to evaluate whether these models will be effective in the long run.

**Content of Subordinate Effectiveness:**

If schemata influence work performance assessments, it is critical to understand the schemata of those who evaluate performance. In other terms, evaluation processes may be enhanced if they were structured to efficiently use supervisors' schemata. It will be simpler for supervisors to rate performance if the dimensions on an assessment form match the dimensions in their schemata regarding performance. There has been some study done on this issue.

Borman (1987) investigated the content of U.S. Army commanders' subordinate job performance schemata. When asked to identify the distinctions between effective and ineffective soldiers, these officers came up with 189 descriptive things. Borman then utilised sophisticated statistical analysis to condense the 189 elements into six relevant categories. Effective warriors were said to possess these characteristics: i) Working hard, ii) Being responsible, iii) Being organized, iv) Knowing the technical parts of the job, v) Being in control of subordinates, vi) Displaying concern for subordinates.

Borman stated that these categories represent the traits that officers use to evaluate the performance of soldiers. He also found that his sample of experienced police agreed on what constituted strong job performance. These findings imply that experienced managers may have schemata that correctly describe effective performance. These six dimensions might serve as the foundation for any of the previously described grading formats.

Werner (1994) performed research in which he asked experienced supervisors to judge secretaries' performance as recounted in a series of situations. The type of information that the supervisors utilised in determining their assessments was one of the variables of interest in this study. Werner discovered that the dimensions, namely, i) attendance, ii) work accuracy, iii) job knowledge, and iv) work quantity were regarded as the most important.

Werner proposed that these four dimensions may capture the traits that constitute his supervisors' schemata. He further urged that managers inform their employees on the substance of their schemata. Subordinates are more inclined to strive for excellence in areas that the supervisor considers are critical to effective performance.

**Rater Bias and Error:**

It is in the nature of human judgment to be imperfect. Rating biases and rating errors are common when supervisors or other people issue performance ratings. These biases and errors are visible in the distribution of ratings, both within individual rating forms and throughout rating forms for different individuals. Halo and distributional errors are terms used to describe these within-form and across-form trends.

**Halo Errors:**

**Halo error** occurs whenever a rater assigns the very same rating to a person across all rating dimensions, regardless of variances in performance between dimensions. In other words, if a person is considered exceptional in one aspect, he or she is rated exceptional in other areas, despite if he or she is simply ordinary or even awful in others. For example, a police officer may excel in making a large number of arrests (high quantity) yet perform poorly on paperwork. A supervisor may give this officer excellent marks on all aspects, even if they are not all well-deserved. Likewise, if a person is assessed as poor in one area, his or her ratings are low in all areas, even if he or she is satisfactory on certain performance aspects. This rating error happens inside individual rating forms rather than across various persons' rating forms.

Table 4.5 depicts a response pattern that represents a halo error. The table displays the ratings of four persons across five performance criteria. The ratings ranged from 1 (worst performance) to 5 (highest performance) (best performance). This is a halo pattern because the ratings for every individual worker are consistent throughout all aspects, despite the fact that each worker received different evaluations. Such a trend shows that raters are unable to differentiate between dimensions. The individual is seen as having consistent performance across all aspects.

**Table 4.5 Job Performance Ratings for Four Employees on Five Dimensions Illustrating a Halo Error Pattern**

| Dimension | Employee 1 | Employee 2 | Employee 3 | Employee 4 |
|---|---|---|---|---|
| Attendance | 5 | 3 | 1 | 4 |
| Communication | 5 | 3 | 1 | 4 |
| Following directions | 5 | 3 | 1 | 4 |
| Work quality | 5 | 3 | 1 | 4 |
| Work quantity | 5 | 3 | 1 | 4 |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

Even though a trend of identical ratings may imply a rating error, employee performance may be consistent across aspects. As a result, halo patterns may correctly imply that aspects of real performance are connected. This concept has sparked much debate in the I/O literature concerning the meaning of halo. Part of this debate is about how to distinguish between the erroneous halo and the "real" halo. A true halo indicates that an employee performs at the same level across all aspects.

Another issue with halo has been understanding the cognitive processes that may lead to halo error in a rater. Several academics have proposed that while assessing dimensions, raters depend on an overall image of the employee. This point of view holds that significant bits of information are used to establish a broad opinion about an employee. The impression serves as the foundation for performance evaluations. This shows that raters may be better equipped to convey information about overall performance than specific performance measures.

**Distributional Errors:**

When a rater tends to rate everyone the same, distributional errors develop. Whenever the rater ranks everybody at the top of the performance scale, **leniency errors** result. Whenever the rater ranks everyone at the unfavourable end of the performance scale, this is referred to be a **severity error**. Whenever a rater scores everyone in the centre of the performance scale, **central tendency** errors arise. The trend of leniency may be noticed throughout different people's assessments. Table 4.6 demonstrates a pattern of leniency, with all four employees receiving ratings at the high end of the performance range. On a five-point scale, each participant obtained scores of 4 and 5. However, it is feasible that a distributional error pattern does not reflect errors. All ratees may have performed similarly, resulting in comparable ratings.

**Table 4.6 Job Performance Ratings for Four Employees on Five Dimensions Illustrating a Leniency Error Pattern**

| Dimension | Employee 1 | Employee 2 | Employee 3 | Employee 4 |
|---|---|---|---|---|
| Attendance | 4 | 5 | 5 | 5 |
| Communication | 4 | 5 | 5 | 5 |
| Following directions | 5 | 4 | 4 | 4 |
| Work quality | 4 | 5 | 4 | 5 |
| Work quantity | 5 | 4 | 5 | 5 |

{**Source**: Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.}

**Control of Rater Bias and Error:**

To reduce and remove rater bias and error, two techniques have been devised. One way would be to create better performance assessment forms that are resistant to these issues. The other option is to teach raters to avoid rating errors. Despite the fact that both techniques have shown potential, research investigations have produced inconsistent outcomes about their capacity to eliminate errors.

**Error-Resistant Forms to Assess Performance:**

The behaviour-focused rating scales, such as the BARS and MSS, were created in part to avoid rating errors. The assumption is that if raters focus on specific actions instead of qualities, they will be able to generate more accurate assessments. These actions are much more tangible and need less idiosyncratic interpretation of what they represent. For instance, how frequently a person is away from work should be easier to reliably judge than the more abstract attribute of dependability.

Many research has been conducted to compare the different behaviour-focused rating forms with graphic rating forms and with one another. According to these comparisons, the behaviour-focused forms produce fewer errors (such as halo and leniency) than the graphic grading scales at times, but not always. Furthermore, scales that simply require raters to verify whether or not people have engaged in specified behaviours may result in less leniency than graphic rating scales. Borman et al. (2010) found that there is minimal advantage to utilising behaviour-based scales over graphic rating scales after analysing the research on rating forms. It appears that attempts to increase rater accuracy should focus on factors other than rating instrument design.

**Rater Training to Reduce Errors:**

Rater training has also been undertaken in a number of trials, with varying degrees of success. At least some of the disparity in research findings might be attributed to variances in the types of training investigated. **Rater error training, or RET**, is one of the most prevalent types of training. RET's goal is to familiarise raters with rater faults and educate them on

how to avoid these rating trends. Although most studies have discovered that this type of training minimises rating errors, it frequently comes at the expense of rating accuracy. In other words, by causing evaluations to fluctuate, raters may minimise the amount of halo and leniency patterns in their ratings, whether or not they properly reflect how nicely the individual has performed, but such ratings are less accurate in reflecting the genuine level of performance.

How is it possible that reducing errors also lead to a fall in accuracy? One answer might be found in the nature of the rating errors. The pattern of ratings, as mentioned before in this unit, is used to infer rater errors. Individuals' performance may be identical across multiple performance measures (true halo), or all employees in a supervisor's department may execute their duties equally effectively. Training raters to refrain from making the very same ratings among categories or persons will lead to them focusing on avoiding particular patterns rather than correctly assessing job performance. Bernardin and Pence (1980) proposed that RET may involve swapping one set of rating errors for another.

Nathan and Tippins (1990) proposed an alternative reason for why halo errors are related to higher accuracy in job performance assessments. They hypothesised that raters with less halo in their assessments may have given too much weight to insignificant negative occurrences. For example, a supervisor may have assigned the otherwise dependable employee a poor attendance grade because he or she was absent for one week the previous year. Raters who displayed a halo pattern in their evaluations paid less attention to such uncommon occurrences and preferred to emphasise the person's regular performance. This may have resulted in the more accurate assessments since they were impacted more by overall performance rather than isolated instances of good or bad performance in one or more criteria.

Other methods of training have yielded more promising results than RET. These training processes educate raters on how to monitor performance-relevant behaviour and make decisions based on that observation. For example, Hedge and Kavanagh (1988) discovered that observation training enhanced rating accuracy but did not reduce rating errors. **The frame of reference training**, which seeks to offer a shared understanding of the rating job, is perhaps the most promising. Raters are shown particular instances of conduct that reflect different degrees of performance for each facet to be graded. So far, the results of this type of training have been positive in terms of enhancing rating accuracy and giving the rater a more precise grasp of the criteria for successful performance. One limitation of this research is that it has largely been done in laboratory settings with college students, thus it is unclear how well the results will translate to managers judging their personnel in the field.

**Other Factors That Influence Job Performance Ratings:**

So far, we've discussed how supervisor evaluations can be influenced by cognitive processes and the structure of the rating form (and training in

how to use it). Additional elements that might influence supervisor evaluations include supervisor sentiments for the subordinate, supervisor mood, supervisor views of subordinate motivations for performance, cultural factors, and both the rater and the ratee's race.

Research studies back up the concept that supervisors give better ratings to subordinates they like. Some people have expressed worry that the ratings may be unfair and biased. There is also some evidence, although, that liking may be the outcome of successful job performance, since supervisors like individuals who work well for them. It is especially vital for a new employee to be perceived as a good worker since that view will likely lead to liking by supervisors, which might result in gaining further assistance, leading to even better performance in the future.

Supervisor expectations regarding performance, irrespective of like, can impact the maintenance of excellent performance ratings. Murphy, Gannett, Herr, and Chen (1986) discovered that the rater's expectations about the ratee's performance impacted performance assessments. People are prone to forgetting incidents of behaviour which does not suit their perception of the person being evaluated. Thus, even if performance has lately declined, a person who is liked and performs well will continue to be perceived as a good performer. When performance changes over time, this might lead to biased ratings.

Ratings might be influenced by the rater's mood at the moment of evaluation. Sinclair (1988) allocated participants to a condition wherein their emotion and mood were experimentally changed to be more depressed or euphoric in laboratory research. They were then asked to judge a professor's performance after reading a description of his or her behaviour. The results revealed that individuals in a melancholy mood assessed the professor's performance lower than those in an exuberant state. Depressed people were also more accurate and had a smaller halo. Sinclair interpreted the findings as showing people's improved information-processing abilities when they are in a depressed mood.

Managers' perceptions of subordinate motivation might influence their judgments of work performance, however curiously, such perceptions can be influenced by cultural factors. DeVoe and Iyengar (2004) examined managers' opinions of their workers as intrinsically driven (desiring to do a good job for the sake of doing a good job) or extrinsically motivated (working very hard for rewards or benefits), and then connected those beliefs to job performance evaluations. American and Latin managers thought intrinsic motivation was more significant than an extrinsic incentive for performance, but Asian managers thought both forms of motivation were equally vital.

It is commonly known that Black employees receive reduced performance assessment scores than White employees. Surprisingly, the rater's race appears to have had no influence on evaluations for Whites but does affect ratings for Blacks. Stauffer and Buckley (2005) discovered that Black and White raters give equal evaluations to Whites and rate Blacks lower on

average than Whites. Nevertheless, the disparity in evaluations is significantly greater for White raters than for Black raters. If it is assumed that Black raters have less prejudice against Black workers than White raters, these data show that White raters are biased towards Black employees. Alternate reasons include Black raters being prejudiced in favour of Blacks and overrating them, and both Black and White raters being biased in favour of Whites and overrating them relative to Blacks. At this moment, we don't know the extent to which bias is operating in these ratings either for or against Black and White employees.

### 4.1.3 360-Degree Feedback:

In most organisations, every employee's immediate supervisor is in charge of evaluating work performance. However, getting several viewpoints on work performance may be beneficial, and using many perspectives is now becoming a normal practice in the assessment of managers and many others. Peer, self and subordinate ratings (for supervisors) can be a beneficial supplement to supervisor ratings in giving feedback for employee development. Disagreements among evaluations by self (the employee's own judgments of performance) and ratings by the others, in particular, might reveal areas where other people see the employee differently than the person sees himself or herself.

**360-degree feedback** refers to the usage of numerous views for manager feedback. Peers, subordinates, and supervisors assess a manager on a variety of performance factors. In addition, the manager completes a performance evaluation of his or her own. According to research studies, individuals in such multiple different positions had only moderate agreement in their assessments, implying that they present distinct viewpoints on a person's performance. Another benefit of utilising numerous raters is that the impact of individual biases can be lessened. It has already been demonstrated, for instance, that individuals offer better scores in 360-degree assessments to persons they like. For example, when additional information from some of the other raters is included in the evaluation, the impacts of bias on the part of the immediate manager are reduced. This can result in more trust in and positive sentiments toward the evaluation system on the side of people being assessed.

The goal of 360-degree systems is to increase performance, particularly for those persons who are in most need of change. These systems have been demonstrated to be beneficial to some people, though not all. Contrary to the primary goal of these systems, it appears that the top performers, rather than the worst, benefit the most from 360-degree feedback. Additionally, Atwater and Brett (2005) discovered that persons who received bad evaluations from others and also rated themselves poorly had the poorest reactions to feedback, implying that if one feels his or her performance is poor, having those opinions confirmed by others is not beneficial.

## 4.2 SUMMARY

Job performance indicators can be characterised as objective or subjective. Objective measurements are tallies of a job's output, such as the number of sales made by a salesman or the number of units manufactured by a manufacturing worker. Subjective measurements are assessments given by supervisors (or other people who are familiar with the individual's work performance). Subjective measurements are the more often utilised of the two methodologies, however, they are prone to biases and errors due to human judgment. To decrease rating errors in subjective measurements, two techniques have been used: rating form design and rater training.

To improve the accuracy of performance assessments, numerous different types of rating forms have indeed been developed. The Behaviourally Anchored Rating Scale (BARS) asks raters to choose which of numerous behaviours best represents the individual's work performance. The Mixed Standard Scale (MSS) asks raters to evaluate whether an individual's performance is lower than, comparable to, or better than a number of performance behaviours. The Behaviour Observation Scale (BOS) requires raters to report how frequently each of the following behaviours is performed by ratees. Contrasting behaviour-focused rating forms to certain other types of measurements have failed to generate consistent evidence of improved accuracy.

Another strategy that has been tried to decrease errors is rater training. According to research, even if rater error training is helpful in decreasing rating errors, it might lower rating accuracy. Observation training, which focuses on seeing performance-related behaviour and making performance evaluations, has shown potential in improving accuracy. However, it would be premature to infer that either strategy will be effective in assisting supervisors in providing accurate performance assessments at this time.

Several factors have been demonstrated to be related to job performance evaluations, while it is unclear whether or not they result in rater bias. Whether the rater likes the subordinate, the rater's mood, perceived motives of the employee for performance, cultural factors, and both rater and ratee race all affect the rating.

Employees who want to enhance their performance might benefit from feedback from a variety of sources. Managers get 360-degree feedback by comparing their self-ratings to those of their peers, subordinates, and supervisors.

## 4.3 QUESTIONS

1. Describe objective methods for assessing job performance.
2. Explain in brief subjective methods for assessing job performance.
3. Write a short note on 360-degree feedback.

## 4.4 REFERENCES

Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th Ed). United States: Wiley.

*****

# 5

# ASSESSMENT METHODS FOR SELECTION, PLACEMENT AND RECRUITMENT - I

**Unit Structure**





## 5.0 OBJECTIVES

After learning this unit students will understand the following concepts:

- Types of psychological tests based on format: group vs. individual, close-ended Open-ended; paper-and-pencil vs. performance; power vs. speed

- Psychological tests based on what is measured: cognitive ability tests, psychomotor ability tests, knowledge and skills tests, personality tests, emotional intelligence tests, integrity tests, vocational interest tests
- Biographical information, interviews, work samples, assessment centers and electronic assessment.

## 5.1 JOB-RELATED CHARACTERISTICS

There are many characteristics of people or KSAOs (knowledge, skill, ability, and other personal characteristics) which are needed for a job. Knowledge refers to what the person knows about a job, such as medical knowledge for a doctor. We call it a skill when a person is able to do, for example, program a computer or type. Ability is the capability to learn something, for example, the ability to learn to play a musical instrument or to speak a foreign language. Other personal characteristics are those which are not covered by the first three. It can include interests, personality, physical characteristics, and prior experience relevant for the job, etc.

When we hire a computer sales associate, these are some of the KSAOs for which we will select people. We can determine KSAOs with the help of job analysis for each job. Job analysis involves a number of techniques that result in a list of the needed KSAOs for the job in question. Once we come to know which KSAOs are needed, procedures can be chosen to assess them in job applicants or current employees. The idea behind job analysis is to select people who have the necessary KSAOs for the jobs available. Although we cannot say with certainty that people chosen with this technique will be successful on the job, it increases the chances of making good choices over using other selection and placement approaches.

We will discuss five assessment techniques that attempt to measure KSAOs that are relevant for job performance and other organizationally relevant variables. As is the case with other assessment techniques, the properties of reliability and validity are critical. That is, all measures must be consistent (reliable) and must pass stringent tests for validity. In other words, there must be evidence that they can accomplish the tasks for which they are used in organizations. If a test is to be used to select teachers, for example, it must be shown to predict how well a teacher will do on the job.

### 5.1.1 Psychological Tests:

A psychological test is a standardized test and it assesses the unique characteristics of a particular individual. Psychological tests are commonly used to assess knowledge, skills, abilities, attitudes, interests, and personality. These tests consist of multiple items, which are indicators of the characteristic of interest.

If a test contains multiple items, then it provides increased reliability and validity as compared to a single indicator of the characteristic. Single-item

measures usually have low reliability because a person can easily make a mistake on any one item.

### 5.1.2 Characteristics of Tests:

There are many different types of tests available that can assess hundreds of individual characteristics. The nature of the characteristic of interest helps determine which test is used. For example, a test to assess music-related ability will be mostly composed of music-related problems. A test of physical strength, on the other hand, will likely involve the lifting of heavy objects. Now we will have a discussion on four distinguishing characteristics of tests.

## 5.2 TYPES OF PSYCHOLOGICAL TESTS BASED ON THE FORMAT

### 5.2.1 Group versus Individually Administered Tests:

A group test can be administered to many people at the same time. The test can be in a printed form (e.g., a booklet), or it can be computer-based. If it is in a printed form, it can be administered to a group of people at the same time, as is typically done with a course exam. If the test is computer-based, several individuals can take the test simultaneously, either in the same location (e.g., a computer lab) or in different locations.

An individual test is one that a test administrator gives to a single test taker at a time rather than to a group of individuals. This approach is often used in administering cognitive ability tests to children. Because of its greater efficiency, the group test is preferred when it is feasible.

### 5.2.2 Closed-Ended versus Open-Ended Tests:

With a closed-ended test, the test taker must choose one from several possible responses, as in a multiple-choice test. An open-ended test is like an essay exam. The test taker must generate a response rather than choose a correct response. Whereas the closed-ended test is preferred because of its greater ease in scoring, the open-ended test is more appropriate for some characteristics. For example, writing ability is best assessed by asking a person to write an essay. Experts can read and score the essay for a number of characteristics, such as clarity of expression and grammatical accuracy. These characteristics would be more difficult, if not impossible, to assess with a closed-ended test.

### 5.2.3 Paper-and-Pencil versus Performance Tests:

In a paper-and-pencil test, the test is on a piece of paper or another printed medium. The responses are made in written form, usually with a pencil. In a multiple-choice test, which is in a format of paper-and-pencil, the exam questions are presented on a paper, and the responses are made in pencil on the exam paper itself or on a separate answer sheet. In today's time, usually, employment tests are administered electronically, with responses made via keyboard or mouse.

Open-ended tests can also be administered via paper-and-pencil tests if they ask people to record their responses in some form, either by writing on paper or by typing on a computer.

### 5.2.4 Power versus Speed Tests:

In a power test, there is usually no time limit to complete the test. On the other hand, a speed test has a strict time limit. It is designed so that almost no one can finish all items in the allotted time.

The speed tests can be used in two ways. First, a speed test can contain challenging items that must be completed within the time limit. Sometimes speed tests are used in a classroom setting with the presumption that the better-prepared students will be able to answer the questions more quickly as compared to those who are less prepared. One main drawback of speed test is that the test taker might be at a disadvantage if he or she is a slow reader or writer. The second use of speed test is that it is designed to assess a person's speed in doing a particular task, for example, typing test is timed because its purpose is to assess a person's typing speed, as well as accuracy.

## 5.3 TYPES OF PSYCHOLOGICAL TESTS BASED ON WHAT IS MEASURED

### 5.3.1 Ability Tests:

Ability or aptitude is defined as a person's capacity to do or learn to do a particular task. Cognitive abilities, such as intelligence, are relevant to tasks that involve information processing and learning. Psychomotor abilities, such as manual dexterity, involve body movements and manipulation of objects. The importance of each ability is dependent on the nature of the tasks of interest. There are certain job tasks that require mostly cognitive abilities (e.g., programming a computer), whereas others rely mainly on psychomotor abilities (e.g., sweeping a floor). Many tasks require both types of abilities (e.g., repairing a computer or complex piece of equipment).

### 5.3.2 Cognitive Ability Tests:

An intelligence test (IQ test) of general cognitive ability is the best-known cognitive ability test. There are other tests as well, such as the mathematical or verbal ability. The items on such tests represent individual problems to solve. Such tests can be administered to large groups of individuals simultaneously and provide an inexpensive and efficient means of assessing job applicants. One example of a cognitive ability test is Personnel Tests for Industry (PTI). This test is designed to assess mathematical and verbal ability. The items are problems involving mathematical and verbal reasoning. The test was designed for group administration and can be completed in about 25 minutes.

### 5.3.3 Psychomotor Ability Tests:

The ability to manipulate objects and use tools is conducted by means of Psychomotor ability tests. Coordination between senses and movement (e.g., eye-hand coordination) is measured by these tests. Most of the psychomotor tests are performance tests. In such tests, people are assessed on their ability to perform motor tasks, such as throwing darts on the target or using simple tools to manipulate different objects which may involve removing and reassembling several fasteners using wrenches and a screwdriver. The score is based on the time it takes to complete the task.

## 5.4 OTHER PSYCHOLOGICAL TESTS

### 5.4.1 Knowledge and Skill Tests:

An achievement test is often called a knowledge and skill test and is designed to measure a person's present level of proficiency. A knowledge test assesses what the person knows, and a skill test assesses what a person is able to do. In reality, it is often not possible to totally separate ability from knowledge and skill. Ability tests generally rely on knowledge and skill, and knowledge and skill tests rely to some extent on ability.

Many different knowledge and skill areas can be assessed with a test. There are some tests that focus on general skills, such as math and reading, whereas, others are useful for assessing skills at particular job tasks, such as typing. Knowledge and skill tests can be both paper-and-pencil tests and performance tests.

### 5.4.2 Personality Tests:

A personality trait is a tendency to behave in a particular way across different situations. Sociability trait is considered to be high in those who prefer to do things with other people. If a person frequently influences others, then we say that he is displaying traits of dominance. Personality traits can be important indicators because sometimes certain types of behavior can be relevant for job performance in organizations. We can take the example of sociability where sociability can be an important trait for a salesperson who has to interact with other people, whereas dominance can be an important trait for a supervisor who has to direct the activities of others.

Paper-and-pencil personality tests can be useful tools for assessing personality traits. Some personality tests are designed to assess a single personality trait; personality inventories assess multiple dimensions and are sometimes used to provide profiles of individuals across several personality traits. Paper-and-pencil tests characterize people into various types, which are combinations of different traits. For example, the extraverted type of person can be high on the traits of activity, optimism, sociability, and talkativeness, whereas the introverted type tends to be high on carefulness, quietness, passivity, and unsociability (Pervin, 1993).

Researchers frequently use personality tests to study many different aspects of people's behavior in organizations.

### 5.4.3 Emotional Intelligence Tests:

Emotional intelligence (EI) is defined as the ability people have to control and recognize emotions in themselves and in others. According to psychologists, this ability makes people more socially skilled, enabling them to be aware of and control their impact on others. In a work setting, those who are high on emotional intelligence will be able to work smoothly with colleagues, and in supervisory positions, it means the ability to exert leadership. There are two types of EI assessments (Joseph & Newman, 2010).

i. **The trait type**: It measures EI as a personality characteristic and it is accessible to the person's awareness. Trait assessments are like a personality test in and people respond to each item concerning how well it describes them.

ii. **The ability type**: In this, the format is of multiple-choice questions. It assumes that people cannot directly report their EI because it is not accessible to awareness. Therefore, a person can reveal his or her EI by choosing the correct answers on the test.

### 5.4.4 Integrity Tests:

An integrity test is expected to predict whether or not an employee will engage in counterproductive or dishonest behavior on the job. Behaviors like cheating, sabotage, theft, and unethical behavior are predicted by these tests. Sometimes these tests are used to predict absence and turnover in an organization. There are two different types of integrity tests—overt and personality (Wanek, Sackett, and Ones, 2003)

i. **Overt Integrity Test**: Attitudes and prior behavior of the person are assessed by overt integrity test. The person has to indicate agreement or disagreement with statements concerning honesty and moral behavior, for example, an item might ask: Is it alright to lie if you know you won't get caught.

ii. **The personality integrity test**: Personality characteristics are assessed that are important to predict counterproductive behavior.

Research has found that integrity tests can predict counterproductive behavior at work, including absence, theft, and other behaviors potentially damaging to organizations (Ashton, 1998; Ones & Viswesvaran, 1998).

### 5.4.5 Vocational Interest Tests:

In vocational interest test interests are assessed by asking the test taker to mention his or her interest areas for engaging in various activities, such as attending a musical event and visiting a library.

Data from vocational interest tests are available about the answers of people in many different occupations. The test taker's answers are matched to those of people in different occupations to see how well he or she fits each occupation.

Sometimes interest and personality profiles vary from one occupation to another. Therefore, any individual test taker will match some occupations and not others. Because occupations tend to group together into categories, a person can be matched to an occupational category.

One of the most popular vocational interest tests is the Self-Directed Search (Holland, 1994). This test provides scores on six personality types. Each type is associated with a particular family of occupations. For example, the Investigative type likes investigative-type jobs that include scientific fields such as biology and geology. The profile of scores on the six types can guide a person in choosing a career. The match between a person's vocational interests and the nature of his or her job is related to how satisfied the person is with that job (Rottinghaus, Hees, & Conrath, 2009).

## 5.5 BIOGRAPHICAL INFORMATION

One of the easiest ways to find out about people is to ask them what you wish to know. In a work place setting, basic information about people is obtained from an application form. In most organizations, standard application forms contain questions about education, job skills, personal characteristics, and work history. Some forms ask about specific experiences, such as extracurricular school activities (e.g., participation in sports).

The biographical inventory asks detailed background questions. Whereas application forms ask about the prior level of education and work experience, the biographical inventory asks about specific experiences at school and work, or even in other areas of life.

Some of the questions ask about objective, verifiable facts, such as "What was your grade point average in college?" Others ask about opinions or subjective experiences, such as "Did you enjoy college?" If a biographical inventory contains enough of the second type of question, it begins to approximate a psychological test that assesses interests and personality instead of prior life experiences (Schmitt & Chan, 1998).

Biographical inventories tend to be resistant to applicant faking in order to look good on the test because many items are factual in nature and give the appearance of verifiability (J. West & Karas, 1999).

## 5.6 INTERVIEWS

An interview is a face-to-face meeting. It takes place between one or more interviewers and an interviewee. Almost all organizations use the interview in hiring for almost all positions. The interview method is

widely accepted. Following are the ypes of interviews conducted in organizational settings:

i. **Unstructured interview**: During this interviewer asks whatever questions come to mind. It can be like a conversation between the interviewer and interviewee.

ii. **Structured interview**: During the structured interview, the interviewer has a preplanned series of questions that are asked of every person who is interviewed. This makes the interview relatively standard'

Some interviews are semi-structured. In this type of interview, the questions to be asked are specified and standardized. Others have strict requirements that questions be asked in a set order, that the same phrasing is used, that interviewees not be asked to elaborate on any answer even if it is unclear, and that interviewees not be allowed to ask questions themselves until the end.

The interview can be used in two ways. One is to collect information. Questions can ask about attitudes ("Did you like your last job?"); job experiences ("Have you ever supervised anyone?"); personal background ("What was your favourite subject in college?"); and preferences ("Would you mind working weekends?"). The disadvantages of interview method are as follows:

i. One major disadvantage is that the interviewer can affect the answers of the interviewee.

ii. The interaction between interviewer and interviewee can differ from interview to interview.

iii. Differences among interviewers in their ability to conduct an interview and in their personalities could affect the interview process and the interviewee's responses (Dipboye & Gaugler, 1993).

With the help of modern technology, it is possible to conduct interviews remotely. Telephone and webcam interviews have become increasingly popular when applicants are located at great distances.

## 5.7 WORK SAMPLES

A work sample is an assessment technique in which the person is required to show how well he or she can do the tasks involved in a job. It is a type of simulation in which a person does a job or part of a job under testing conditions rather than actual job conditions. A work sample is designed to measure a higher-level skill. A work sample measures the skill in doing a particular task, such as driving a truck, which is composed of many basic skills performed in the context of a particular set of conditions.

The psychological test predicts whether a person has the basic skills that are important to know how well he or she could do the task—but not how well he or she can actually do it. The typical work sample gives the

applicant the materials and tools necessary to accomplish the task. The person is expected to complete the task quickly and accurately. A score is obtained based on the accuracy with which the task is completed and the amount of time taken by the applicant.

One of the most familiar work samples is the driving test that is required of applicants for a driver's license. The applicant is asked to actually drive the vehicle, while the test administrator records the scores for each one. In order to get the license, the applicant must achieve a score that meets a pre-decided criterion.

In the same way, a work sample can be used in an organizational setting to determine if a person is suitable for a particular job. Work samples have been found to be good predictors of future job performance (Robertson & Kandola, 1982).

**Limitations of work sample**: For many work samples, the applicant must already have experience with the task, work samples can be costly to develop, and the work sample is specific to a particular type of job (Callinan & Robertson, 2000).

## 5.8 ASSESSMENT CENTERS AND ELECTRONIC ASSESSMENT

An assessment center measures how well a person is able to perform some of the tasks of a specific job. It consists of many exercises that are meant to simulate various job tasks. Assessment centers are designed to assess usually management-related skills. The exercises can be administered to several individuals at the same time.

This technique is mostly used by many types of employers. For example, in a survey of British employers, Keenan (1995) found that 44% used assessment centers to hire college graduates.

Assessment center exercises have a high level of realism because they simulate many of the actual tasks included in the job. For example, the person being assessed may be asked to role-play being a supervisor in a given situation. This might involve dealing with a junior employee. The assessee's performance is scored by a panel of expert assessors. The assessors are asked to evaluate the person's performance. For example, for a manager's job, an assessee's performance related to communicating, dealing with other people, making decisions, and planning can be assessed.

Research has found that assessment centers are a valid device for the selection of employees (Arthur, Day, McNelly, & Edens, 2003). It can be said that there is a correlation between scores on the assessment center with job performance.

Dayan, Kasten, and Fox (2002) found that assessment center ratings predicted job performance both 2 and 4 years later for police officers, with correlations of .30 and .21, respectively.

Disadvantages: The problem with assessment centers is that the various dimension scores given to assessees within an exercise are too highly correlated. This may mean that assessors are assessing only a single dimension rather than multiple dimensions. One possibility is that assessors are able to judge only overall exercise performance rather than the individual dimensions.

Researchers have tried to improve the validity of dimension ratings in assessment centers. Reilly, Henry, and Smither (1990) maintained that assessors are unable to adequately assess individual dimensions because they have too much information to process. Each exercise provides a great deal of information, and often that information must be organized in some way for judgments to be made.

In order to help assessors, organize all the information, the researchers provided a checklist of 273 behaviors to use to rate performance in the exercises. The assessors used the checklist to note the specific behaviors performed by each assessee before making their ratings. The results of the study showed that correlations between dimensions within exercises got smaller and correlations between corresponding dimensions across exercises got larger than those typically found in assessment centers. Thus, the validity of the dimension scores improved.

### 5.8.1 Electronic assessment:

The use of electronic assessment is one of the fastest-growing trends in organizational assessment. Lievens and Sackett (2006), for example, discussed the use of video-based assessment. In this assessment, each item is presented as a video clip giving details of an event that might take place at work. Such assessments can provide a realistic situation that is difficult to describe fully with text.

The Internet has made it possible to link an applicant with an assessment almost anywhere in the world. Electronic technology is expanding the use of assessment and it has made the assessment cheaper and more convenient. Psychological Tests can be adapted for administration electronically. The test taker can read each item on a computer screen and respond with the keyboard, mouse, or other interface devices. Advantages of electronic assessment are as follows:

i. The test can be scored automatically as soon as the last item is answered, which can speed up the selection process.

ii. A test can be put on a website that will allow access from anywhere in the world. An applicant doesn't have to come to a particular testing site to take the test.

Disadvantages of electronic assessment are as follows:

i. Developing a computer testing system can be expensive and time-consuming. Compared to paper-pencil tests, hardware and software costs can be considerably more expensive.

ii. Sometimes computerized tests are not equivalent to printed tests. For example, speed tests, which time how many correct items a person can do in a given interval. One such test is a clerical speed and accuracy test in which the test taker must compare two strings of letters and indicate if they are the same or not— for example:

abdiel versus abdifl

ghicbe versus ghicbe

It has been seen that response time per item can be different when using a computer versus paper and pencil for the same items, making scores nonequivalent. Other researchers like Richman, Kiesler, Weisband, and Drasgow (1999) have found no differences between the computer and paper-and-pencil administrations.

## 5.9 SUMMARY

One of the major tasks I/O psychologists do for organizations is the assessment of people's characteristics for selection and placement. These characteristics can be classified as the knowledge, skill, ability, and other personal characteristics, or KSAOs, necessary for successful performance on the job. The five major methods used to assess KSAOs are: Psychological test, Biographical Inventory, Interview, Work sample, and Assessment Center.

A psychological test is a standardized series of problems or questions given to a person to assess a particular individual characteristic. Tests are commonly used to assess many KSAOs, including knowledge, skill, ability, attitudes, interests, and personality. The biographical inventory asks for detailed information about the person's past experience, both on and off the job. It asks for far more extensive information than the typical job application form.

An interview is a face-to-face meeting between an interviewee and one or more interviewers who are collecting information or making hiring decisions. During an unstructured interview, the interviewer asks whatever questions come to mind. By contrast, during a structured interview, the interviewer has a preplanned series of questions that are asked of every person who is interviewed. In both types, the interviewer often makes overall judgments about the interviewee's suitability for the job.

A work sample is an assessment device that requires a person to demonstrate how well he or she can perform job tasks under standardized conditions. It is a type of simulation in which a person does a job or part of a job under testing conditions rather than actual job conditions.

The assessment center consists of several different types of exercises that take place over one or more days. Although most assessment centers are used to identify future management potential, they can be used to assess the potential of people for many different types of jobs.

Electronic assessment has become commonplace, especially for the administration of psychological tests. The most common use of electronic media is the administration of a paper-and-pencil test by computer. Often the test is almost identical to the printed version, with items displayed on the screen and a response made with a keyboard or mouse. Computer adaptive testing (CAT) is a more sophisticated approach in which the items administered to an individual are customized, depending on correct and incorrect answers to prior questions. Such tests can yield better reliabilities with fewer items, but they are costly to develop and are therefore best left to mass-testing situations.

## 5.10 QUESTIONS

1. What are the various formats of psychological tests?
2. Discuss tests of cognitive abilities.
3. Discuss 'work sample' as an assessment technique.

## 5.11 REFERENCES

Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th ed). United States: Wiley.

*****

# 6

# ASSESSMENT METHODS FOR SELECTION, PLACEMENT AND RECRUITMENT - II

**Unit Structure**



## 6.0 OBJECTIVES

- To learn how applicants are recruited in an organization
- To learn about policies and issues related to the reservation in the organization, gender and disability status of the applicant

## 6.1 RECRUITING APPLICANTS

It is a big challenge for many organizations to get people to apply for available positions. In order to hire good people, an organization must have a large pool of job applicants from which to select. It may be relatively easy, for some jobs, to recruit applicants because there are many available applicants who are attracted to the job. But, for jobs where there are not enough people to apply, an organization must expend considerable effort to attract the right people to fill its job vacancies.

Several methods can be used to recruit applicants for a vacant position. Six sources of applicants commonly used by organizations are i) advertising, ii) school recruiters, iii) employee referral, iv) walk-ins, v) employment agencies, vi) the web. It depends on the organizations which source they are going to use. Some organizations find that they get enough walk-in applicants to cover the jobs that they have, so for them time-consuming methods are not necessary. For low-level positions, many organizations rely on their own company websites (Chapman & Webster, 2003).

Today's job market is very competitive. And, it might be the case that many organizations are attempting to attract the same individuals. Here time-consuming methods might be necessary to attract the people who are needed. Zottoli and Wanous (2000) reviewed 50 years of research on applicant sources and found evidence that inside sources (employee referrals of acquaintances/friends, rehires of those who once worked there, and transfers from inside the organization) are very good in nature as they provide employees who perform better and remain on the job longer on average than outside sources (advertising or employment agencies).

It has also been found that employees hired through inside sources tend to be more satisfied with their jobs. McManus and Ferguson (2003) found that inside sources gave the best applicants. They also found that the internet was a better medium in order to attract quality candidates as compared to newspapers and other outside sources. Two reasons for the superiority of inside sources have been suggested by Zottoli and Wanous (2000).

i. These applicants receive more accurate information about the job and hence are able to decide whether they should apply or not. In other words, they prescreen themselves out of jobs if they are not suited for it.

ii. Inside sources will assess the person/applicant before suggesting someone for a job. Employees can have a personal stake in hiring good people in their own areas, and so they will attempt to screen out those people who aren't suitable.

### 6.1.1 Selecting employees:

It is always a good idea that an organization has many better applicants than the number of vacant jobs. The more selective an organization can be, the better the chances that the person hired will be a good employee. This is because many of the employee selection procedures developed by I/O psychologists work best when there are several applicants from which to choose. These procedures are based on statistical methodologies used to develop selection systems.

### How Do Organizations Select Employees?

In an organization, the purpose of employee selection is to hire the best people for the job and who can be successful on the job. It is a well-known fact that organizational performance is dependent on employees' performance. The most common approach used by organizations is to interview the applicants and decide subjectively which one to hire. Such purely subjective hiring procedures, however, have been shown to be biased and inaccurate. A better approach is to use scientific methods that have been shown to work in almost a century of research on employee selection. Two important elements in employee selection must be considered. First is the criterion, which is the definition of good employee performance. Although it may seem obvious that we hire the person who is expected to be the best performer, it is not easy to define what we mean

by good performance. Job performance involves many different aspects. Some employees may work very accurately, whereas others work very fast. Therefore, organizations do not find it easy to decide whether to hire employees based on one aspect of the criterion (e.g., attendance) or another (e.g., work quantity).

Job performance can be predicted based on measures of KSAOs. For example, knowledge of the subject matter can be a good predictor for the job performance of a classroom teacher. Although it can be said that knowledge is not the only predictor because knowledge alone cannot make someone a good teacher. Determining if a given predictor relates to a criterion requires a validation study, which is a research study that attempts to show that the predictor relates to the criterion. To conduct this sort of study, it is important to quantify both, the criterion and the predictor are quantified. Data are collected for a group of employees on both criterion and the predictor variables. Because criterion and predictor both are quantified, a statistical test can be conducted to see if they are significantly related. The correlation coefficient indicates how well the two variables relate to each other. If the two variables are significantly related statistically, you can conclude that the predictor is valid in terms of the criterion. The implication is that you could use information about the predictor to forecast the applicant's likely performance on the job. It is difficult and complex to do a good validation study. First, you must carefully analyze the job and job requirements using job analysis. The results of the job analysis can be used to develop Criteria for the job and to pick predictors. Data are collected to verify that the chosen predictors are valid. Such valid predictors will become part of the organization's employee selection system.

- **Conducting a Validation Study:** Conducting a validation study involves the following five steps:

**Step 1: Conduct a Job Analysis:**

Information about the tasks involved in a job can be obtained by the job analysis. It also provides information about the characteristics (KSAOs) an employee needs to be successful on a job. These two types of information are not independent, for the specification of KSAOs often is derived from an analysis of the tasks required for the job.

Job relevance is an important concept in employee selection —the correspondence between the KSAOs needed for job success and the KSAOs of the job applicant. For good and legal selection matching two types of KSAO requirements should be there. If certain characteristics are not needed for a particular type of job, then hiring people with those qualities would be useless and sometimes may be labeled as illegal at worst if it results in discrimination. Thus, it would make sense to hire on the basis of physical strength if the job requires heavy lifting, such as a dock worker. On the other hand, it makes little sense to have a strength requirement for school teachers. A job analysis can be used in many ways as the basis for a validation study. The job analysis identifies the major

components of the job. Next, an analysis can be done to specify the KSAOs necessary to accomplish each component. A list of performance criteria and potential predictors can be made based on this information. For example, a major component of a manager's job might be managing a budget. Managers often have to develop budgets and manage their resources so that they do not exceed them. If one has to manage a budget, one KSAO is knowledge of basic mathematics, which would be important for managing a budget. People hired to be managers should have this basic knowledge.

**Step 2: Specify Job Performance Criteria:**

Depending upon what a job entails, one can begin to develop criteria for good job performance. For example, if a manager is required to manage a budget, a good criterion might be how well the manager-managed within the budget. Because there can be many reasons for not managing within the budget, therefore, one cannot depend only on this criterion for evaluating how well a person performs the job. For a validation study, criteria can be chosen that might be predicted by one or more predictors. For example, if a test of mathematical ability is found to predict how well a manager can stay within a budget, then one can expect to hire managers who do better on the criterion if that test is used to help select them.

**Step 3: Choose Predictors:**

When criteria for a job are developed, potential predictors of performance are also selected on those criteria. Potential predictors might be chosen to assess KSAOs directly, as with a psychological test of mathematical ability. Other predictors might be less direct as measures of a KSAO. It is often assumed that college students have certain knowledge and ability, such as being able to do basic mathematics and to write in their own language. Education level can be used as a predictor and it can eliminate the need to assess many KSAO requirements for a job. This is the reason why many organizations prefer to hire college students/graduates.

**Step 4: Validate the Predictors:**

After finalizing criteria and predictors, the data collection phase of the validation study can start. In this step, measures of the criterion and the predictors are taken on a sample of people. This is to see if the predictor relates to the criterion. A good field test of the predictor is done in the organizational setting in which it is expected to be used in the future. It is a good idea to conduct validation studies in actual organizational settings as opposed to laboratory settings. There are two types of study designs for conducting a validation study:

1. **Concurrent validation study**:

In this type of validation study, both the predictor scores and criterion scores are collected from a sample of participants at more or less the same point in time. For example, if the participants are current employees they can be assessed on both criteria and predictors. A sample of employees

might be asked to provide predictor data by taking an assessment test. Test scores would then be correlated with employees' most recent performance evaluations. If the two are related, it is assumed that scores on the predictor at the time of application for a job will predict later performance on the job.

**2. Predictive validity study:**

In this type of validity test, the predictors are measured before the criterion. A sample of job applicants is assessed on the predictor. The scores obtained on that predictor are not used in deciding who to hire. In other words, applicants are hired who are both high and low on the predictor. When some time has passed on the job, the criterion or criteria is assessed. If the predictor can predict future performance, it can be said with reasonable confidence that the predictor is a valid selection device.

**Step 5: Cross-Validate:**

Cross-validate or replicate is the final step. This is done to be certain that our results are due to a real correlation between the criterion and predictor and not a statistical error. In any study where statistics is used, there is always a chance that significance can occur by chance rather than due to real relations among the variables of interest. Such statistical errors are called Alpha or Type 1 errors. To prevent ourselves from making such errors cross-validation study is done. It is extremely unlikely that we will find the same results twice if there is no relation among the variables of interest. In other words, two successive Alpha errors or Type I errors are unlikely.

To conduct cross-validation, we need two samples. The first sample is used to determine if the criterion and predictor are significantly correlated. A second sample is used to see if the significant relationship found in the first sample can be repeated on the second. The predictor is validated on the first sample and then double-checked or cross-validated on the second. Cross-validation adds to our confidence that the predictor can forecast the criterion or criteria of interest. In most field settings, cross-validation is done by taking the original sample and dividing it randomly in half. The first half is used for the validation, and the second is used for the cross-validation.

**Validity Generalization:**

At times, it is not necessary to collect data to validate a selection test or other assessment device. Selection tests that are valid in one setting are often valid in many other settings. Validity generalization means that validities of selection devices are generalizable or transportable from job to job and organization to organization (Schmidt & Hunter, 1977). If a test predicts performance for an administrative assistant in one organization, for example, it will predict for an administrative assistant in another organization. The idea of validity generalization has been widely accepted among I/O psychologists (Murphy, 2000), at least as long as the jobs and tests in question are comparable. If you validate a test for the selection of

people in a particular job, the test should be valid for the same job in a different organization. It should also be valid for a job that has the same KSAO requirements. If the second job is different from the job for which the test was valid, the test in the second case may or may not be valid. The only way to be certain would be to conduct another validation study on the second job to determine if the test predicts the criterion.

**How Predictor Information Is Used for Selection:**

Once it is determined that a predictor or predictors are valid forecasters of future performance criteria, it must be decided how best to use the predictor information. Two popular uses of predictor information are as hurdles and as predictors in a regression equation. With either approach, multiple predictors can be used in combination. Often prediction is better with several rather than single predictors because multiple KSAOs are necessary for job success.

1. **Multiple Hurdles**:

In this approach, a passing score for each predictor is set. If an applicant achieves that score, then the hurdle is passed. For example, a computer salesperson should have several KSAOs in order to be successful on the job. One obvious KSAO is knowledge of computer principles. Completion of a college degree in computers might serve as an indicator of the KSAO, and the applicant would pass this hurdle if he or she had such a degree. One more important KSAO might be communication skills so that the person can relate well to customers. This might be assessed with a communication skills exercise. Applicants would have to have a passing score on the communication exercise to pass this hurdle. Many organizations use relatively inexpensive preliminary screening methods as hurdles so that expensive assessments are not used with people who easily could have been screened out earlier in the process.

**Regression Approach:**

The regression approach uses the score from each predictor in an equation to provide a numerical estimate or forecast of the criterion. With the computer sales job, an equation could predict the actual dollar amount of sales per month. Predictors for that job might be GPA in college and scores on the communication exercise. Both quantitative variables (GPA and exercise score) can be combined mathematically to provide forecasted criterion scores (e.g., monthly sales). Individuals who are forecasted to have the best criterion scores would be those who are hired. With a single-predictor variable, a linear regression equation is calculated from a sample of data.

To compute an equation, you must have data on both the criterion and the predictor so that you can compare how well the forecasted criterion scores match the real criterion scores. The general form of a linear regression equation is $Y = b \times X + a$ where X is the predictor, Y is the criterion, b is the slope, and a is the intercept. When the equation is used, a and b are known quantities. A forecasted value for the criterion (Y) can be

computed by replacing X with the values of the predictor. The regression equation is developed from the data of a validation study.

In addition to the correlation coefficient, a regression equation can be computed for a sample of data on a criterion and predictor. As noted earlier, this equation provides a means of forecasting the criterion from the predictor. For example, monthly sales for a salesperson might be forecasted from scores on the communication exercise. The most accurate forecast might be achieved from a regression equation such as the following:

$$\text{Sales} = \$400 \times \text{Exercise Score} + \$2{,}000$$

In this equation, a is $2,000 and b is $400. If a person had an exercise score of 10, his or her sales would be predicted to be $6,000:

$$\text{Sales} = \$400 \times 10 + \$2{,}000 \quad \text{Sales} = \$6{,}000$$

If another person had a test score of 5, his or her sales would be predicted to be $4,000:

$$\text{Sales} = \$400 \times 5 + \$2{,}000$$

$$\text{Sales} = \$4{,}000$$

In the above example, the first person would be preferred because his or her forecasted performance is higher.

A similar procedure can be applied when there is more than one predictor. This case involves the use of multiple correlation and multiple regression. Multiple correlation is the correlation between a criterion and two or more predictors simultaneously. The multiple correlation coefficient is indicated by an R.

Multiple regression is a statistical technique that provides an equation relating two or more predictors simultaneously to a criterion. The equation can be used to forecast the criterion from scores on the predictors. In many cases, several predictors combined can provide a more accurate forecast of the criterion than any of them alone. The general form of a multiple regression equation is for the two-predictor case.

$$Y = (b1 \times X1) + (b2 \times X2) + a$$

In this equation, the Xs are predictors, Y is the criterion, a is the intercept, and the bs are regression coefficients. The coefficients and intercept are computed from sample data. The equation is solved by substituting the values of the predictors for the Xs. A forecasted value for the criterion is then computed.

The magnitude of the relation between the predictors and the criterion determines how accurate the prediction is likely to be. If the predictors correlate strongly with the criterion, the forecasted values are likely to be fairly accurate. If the predictors do not correlate very well with the criterion, the forecasts will not be very accurate.

Every regression equation must be cross-validated. To perform cross-validation, the equation generated from one sample of data is applied to the second sample of data. If the regression equation yields non-significant results when used on a second sample, it should not be used.

**Alternatives to Conducting Validation Studies:**

Not all organizations select employees by going through costly and time-consuming validation studies. Organizations do not always have enough people to conduct such studies, and they do not wish to invest the money or time to conduct these studies. For an organization with hundreds of different jobs, it could cost millions of dollars to conduct validation studies for every position.

An alternative approach is to rely on selection tools that can be linked to KSAO requirements. With this approach, one conducts a job analysis to determine KSAOs. Established methods to assess each KSAO are then chosen. If the job analysis results indicate that cognitive ability is needed, an existing cognitive ability test can be chosen. This approach relies heavily on existing research findings concerning the validities of existing methods. It does not involve data collection to test for the validity of predictors. An organization can often rely on validity generalization results to help guide its choice of selection methods.

Many organizations purchase existing selection devices that have been developed elsewhere. Psychological testing companies have validated tests for sale to organizations. Many tests exist to assess hundreds of different characteristics.

No matter how selection decisions are made, once it is decided whom to hire, procedures must be initiated to get that person to take the job. One procedure that is often used is the realistic job preview, which will be discussed next.

## 6.2 GETTING APPLICANTS TO ACCEPT AND KEEP JOBS OFFERED

It is important for organizations to get applicants to accept the job offer. If the applicants who are identified as potentially good employees, do not take the job that is offered, the entire exercise will go waste. It is also of equal importance to ensure that individuals who take a job do not quit in a short period of time because they find that they do not like the job.

Convincing an applicant to accept a job involves several strategies. First, it is important for the recruitment process to be a positive one and for the prospective employee to feel he or she has been treated fairly. Second, salary and compensation offers should be comparable to those of other organizations for similar jobs in the same area. Third, the behavior of recruiters is an important influence on applicants accepting job offers. Chapman et al. (2005) showed that it is important for recruiters to be personable and provide honest information about the job. Providing a falsely positive view of an organization can result in a high turnover as

new employees find that conditions are not as favorable as they were presented to be.

**The realistic job preview (RJP):**

It is used to give job applicants proper and accurate information about the job and also about the organization. Usually, it is done with a brochure or videotaped presentation. A good RJP provides both the favorable and the unfavorable aspects of a job. Idea is that a person who accepts a job will do so with accurate and realistic expectations. A person who knows what he or she is going to encounter will be more likely to remain on a job if unfavorable, but anticipated, conditions arise. If conditions exist that a person cannot tolerate, he or she will refuse the job offer.

### 6.2.1 The utility of scientific selection:

The scientific approach to employee selection is a difficult and time-consuming process. So, what is its utility or value for the organizations? There is no easy answer to this question. Research has proved that scientific selection can be beneficial and result in the hiring of better employees. But its effects on overall organizational functioning are not as easy to determine. Industrial/organizational psychologists have developed certain mathematical procedures for finding out the utility of selection procedures.

In the following section, first, it will be discussed how selection devices can result in the hiring of better employees. Then it will be considered how utility analysis has been used to show how these selection procedures can have important effects on organizational functioning. Following are the three basic concepts on the basis of this discussion:

**Baserate:**

If for any job, all the applicants are hired then baserate is the percentage of applicants who would be successful on the job. There are certain jobs where most of the applicants would be successful and the baserate will be close to 100%. For other jobs, relatively few applicants would be successful, making the baserate close to 0%. A baserate of 50% results in the maximum utility because it offers the most room for improvement in the accuracy of forecasting. Suppose you know the baserate from prior experience with employees on a job. If 50% have been successful in the past, the best accuracy rate you could expect by guessing which applicants would be successful is 50%. If you guessed that every applicant would be successful or unsuccessful, you would expect to be correct half the time. Using a predictor, you could improve your accuracy up to 100%. This would represent a difference of 50% in accuracy between the baserate and your predictor.

If you know that the baserate is less or more than 50%, you can achieve better than 50% accuracy of forecasting by guessing that every applicant will be successful (if the baserate is greater than 50%) or not successful (if the baserate is less than 50%). For example, a 60% baserate would give

about 60% accuracy if you guess that everyone will be successful. A baserate of 40% would give about 60% accuracy if you guess that everyone will be unsuccessful (40% of people successful means that 60% are not successful). In both cases, the biggest possible gain in forecasting accuracy is from 60% to 100%.

The more the baserate differs from 50% in either direction (the majority of employees are successful or not successful), the smaller is the room for improvement if we had perfect forecasting. Thus, all baserates that are greater or less than 50% give less room for gain than 50%.

**Selection Ratio:**

Every organization needs to hire a certain number of employees. The selection ratio is the proportion of job applicants that an organization must hire. To calculate the selection ratio, the number of positions to fill is divided by the number of applicants. Some organizations find that they have many applicants for each vacant position. Their selection ratio will be low. Other organizations find that they have few applicants for each vacant position. Their selection ratio will be high. For example, if there are 100 job applicants for each job, the selection ratio will be 1/100. If there are two applicants for each position, the selection ratio will be 1/2. Low selection ratios produce the greatest utility because they allow an organization to be more selective in whom it hires for each position. In the long run, an organization can hire better people when there are many applicants from which to choose.

**Validity:**

The validity of a selection device is the magnitude of the correlation between it and the criterion. The larger the correlation is, the more accurately the criterion can be forecasted by the selection device. The more accurate the forecast of the criterion is, the greater is the utility because the utility is based in part on increasing the success rate over the baserate.

### 6.2.2 Computing the Utility of Scientific Selection:

A predictor results in the hiring of better employees, but it is not necessarily the best choice for an organization because the costs of using the predictor might be more than the benefits. For some types of factory work, for example, there is little in the way of skills or training necessary to do the job. It can be relatively inexpensive to replace an unsuccessful employee. In such cases, it becomes difficult to justify using an expensive and time-consuming selection method.

The utility concept discussed so far, has concerned identifying successful versus unsuccessful employees. Utility analyses also help to see what kind of performance improvements might occur from using a valid selection device to choose employees. If a selection device is valid, it can be expected that individuals chosen with it will have better job performance. Several studies have shown that the highest performers can be up to 16

times more productive than the lowest performers on jobs with countable output, such as factory work (Campbell, Gasser, & Oswald, 1996). If one can compute the monetary value of that performance gain, one can compute the utility of using a selection device.

There has been much debate in the Industrial/organizational field about the best approach to utility analysis. Some of the discussion has concerned how people make judgments about the monetary value of job performance (Becker & Huselid, 1992).

It can be difficult to compute the monetary gain that scientific selection can provide to organizations, research has shown that it can be considerable. In one research Van Iddekinge et al. (2009) studied the effects of using a scientific selection system on the financial performance of individual restaurants in a fast-food organization. They found that units that used the company's selection system had more satisfied customers and were more profitable than units that did not.

## 6.3 INTERNATIONAL DIFFERENCES IN SELECTION PRACTICES

Selection practices vary greatly among organizations or even branches of the same organization in different countries. In one study, Ryan, McFarland, Baron, and Page (1999) surveyed managers from 959 organizations from 20 countries. The study was about selection practices and selection devices that were used by these managers.

As far as selection devices were concerned, the interview, former employer reference check, and application form were most popular and were used universally. This was not true when it came to psychological tests. As far as psychological tests are concerned, personality and cognitive ability tests were most popular around the world. But there was a considerable difference in how much they were used from country to country.

In Greece, Biographical inventories and interviews were most popular, whereas tests were most popular in Belgium and Spain. Zibarras and Woods (2010) surveyed 579 U.K. organizations about their selection practices and contrasted them to U.S. organizations. American companies were more likely to use background checks, biographical inventories, unstructured interviews, and work samples and less likely to use ability tests.

Newell and Tansley (2001) found that selection practices were different across countries, even where job requirements and situations were similar. According to them, some societal factors are there that account for this. First, it is important that managers know about selection procedures before they use them. Communication among managers across national borders was limited until recently, and so information about a better selection approach discovered in one place wouldn't always be known in another. Although because of the internet the limitations of physical distance and

the national boundary have been reduced, there are still language barriers in many places. Second, laws and regulations influence selection procedures. In the United States, there is antidiscrimination law that has shaped how selection must be done. In many European countries, unions influence selection procedures much more than in the United States. Third, economic factors are important in this regard. They put limits on which approaches are used. In less wealthy countries, expensive assessments are not possible. Finally, there are cultural differences in values and what is considered important. For example, in some countries achievement is more important than symbols of status. In the former, the college GPA would be considered more important than the status of the institution attended, but the opposite might be true in the latter.

### 6.3.1 Legal issues:

Throughout the world, it is now accepted that organizations should not be discriminatory in their practices, such as hiring and promotion. Most countries have laws that protect the rights of employees from discriminatory actions by organizations. Most countries offer protection to women, and some offer protection to Blacks. In countries where there is a large Black minority, Blacks are likely to be offered protection. In countries with few Blacks, this protection might not be found in the law. In this section, legal issues involved in employee selection, both inside and outside the United States, will be discussed.

**Legal Selection in the United States:**

Before 1964 in the United States, there was widespread discrimination against ethnic minorities and women in jobs. In 1964, the Civil Rights Act came into being and it changed the way organizations selected employees and it also expanded legal protections from discrimination to employees.

It can be said that discrimination in hiring has not been eliminated completely in the United States because there were over 146,000 complaints in the year 2005 alone (Goldman, Gutek, Stein, & Lewis, 2006). But, a lot of progress has been made over the past few decades. The Civil Rights Act of 1964 made it illegal to discriminate against minorities and other groups in employment.

The law states very clearly that discrimination against anyone is illegal but there are certain groups of people who have been the target of protection under the law. These groups are called protected classes and are comprised of people who have been the target of discrimination in the past. Some examples are African Americans, Hispanics, Native Americans, and women. They all represent the protected class. At the present time, it is illegal to discriminate on the basis of age, color, disability, gender, national origin, race, and religion.

**Uniform Guidelines on Employee Selection:**

In 1978, the U.S. government came out with Uniform Guidelines on Employee Selection Procedures (1978), which are a set of guidelines for

the legal selection of employees. Initially, it was intended to apply to government agencies but later the guidelines were adopted as acceptable legal practices for all organizations. One of the most important concepts of the Uniform Guidelines is adverse impact, which means the impact of a given selection practice on a protected class. It is defined in terms of selection ratios of the protected class and a comparison group (e.g., White males). It is termed as adverse impact when the four-fifths rule is violated, meaning that the selection ratio for the protected class is less than 80%, or four-fifths, of that of the comparison group (Roth, Bobko, & Switzer, 2006).

Adverse impact is a threshold for possible discrimination in selection. It is not necessarily illegal to use a selection device that has an adverse impact on a protected class. If a selection device or procedure has an adverse impact, there are further tests to decide its legality. To be legal, a selection device must be job-relevant. This means that it assesses a KSAO that is necessary for job success. One way to establish job relevance is by showing that a selection device is a valid predictor of job performance.

If selection practices produce an adverse impact, an organization must be ready to defend itself from legal challenges. Tests of cognitive ability and physical strength are both likely to have an adverse impact on some groups. Their use can be justified only if a job analysis shows that these attributes are necessary KSAOs for the job and if the tests are shown to be valid.

**Essential Functions and Reasonable Accommodation:**

In 1990, a new act known as the Americans with Disabilities Act (ADA) was passed. It extended legal protection to people with disabilities. Two concepts came from this legislation. One, essential function refers to KSAOs that are an important part of the job. For example, typing is an essential function for a secretary, but lifting heavy objects is not. It can be illegal to deny a job to a person with a disability based on a KSAO that relates only to nonessential functions.

The second concept is reasonable accommodation for an employee with a disability. An organization is expected to make allowances that are possible to enable a person with a disability to perform the job. For example, an organization should not fail to hire someone in a wheelchair just because he or she has to climb two steps to get into the building for work. A minor and reasonable accommodation would be to provide a ramp so the person can access the building without much difficulty and having to climb the stairs.

**Affirmative Action:**

Affirmative actions are a variety of practices that organizations use to increase the number of protected class members in employment. Its main purpose is to take care of the effects of past discrimination in hiring by allowing certain groups to catch up in acquiring jobs that were at one time not available to them.

Kravitz (2008) studied those programs which were designed to increase the number of minority applicants and those programs that gave preferential treatment to minorities in job offers. The programs, which were designed to increase the number of minority applicants, do so by engaging in extra recruitment efforts (e.g., advertising in media that target minorities) or by offering training so more minorities have the KSAOs required for a job. Affirmative action is not a quota system and does not require the hiring of anyone without the necessary KSAOs.

Organizations that have more than 50 employees and government contracts exceeding $50,000 are required to have an affirmative action program. This requirement affects most colleges and universities whose faculties have government research grants. For most other organizations, this activity is voluntary, although some employers that have been caught using discriminatory practices have been ordered or strongly encouraged by a court to adopt an affirmative action program to end their illegal practices. Most large organizations in the United States practice some form of affirmative action, although some do so more rigorously than others. The widespread practice can be seen in the prominently displayed notice that an employer is an "Affirmative Action" employer, common on the stationery of many organizations and most universities.

The main aim of an affirmative action program is to correct the problem of discrimination. It is important to use such programs carefully because they can have unintended detrimental effects on the groups they are designed to help. Heilman and her colleagues have found that women who are given preferential treatment in hiring can have a negative view of themselves and other women (Heilman, Kaplow, Amato, & Stathatos, 1993), and such negative views can affect self-confidence (Heilman & Alcott, 2001). This effect has been found with minority candidates as well (Evans, 2003). Furthermore, a person who is hired under affirmative action is likely to be seen as incompetent, and that stigma of affirmative action is difficult to overcome in the minds of coworkers (Heilman, Battle, Keller, & Lee, 1998). Research has also shown adverse effects on non-beneficiaries when preferential treatment has been perceived as unfair (e.g., as reverse discrimination) (Heilman, McCullough, & Gilbert, 1996).

According to Kravitz (2008), programs concerned with affirmative action have shown promise. He suggested that affirmative action programs should focus on both increasing the number of minority applicants and retaining minority employees. As far as attracting applicants is concerned, it can be accomplished by doing a better job marketing and by increasing the pool of minorities with the necessary KSAOs through educational programs. Retention, on the other hand, can be accomplished with programs that improve the working environment and experiences for minorities. Kravitz maintains that to be effective, these programs should be available to everyone, and not just minorities. For example, a program to decrease incivility should focus on incivility toward everyone and not just minorities. The advantage of being inclusive with such programs is that they improve working experiences for everyone and not just minorities.

**Legal Selection Outside the United States:**

Many countries throughout the industrialized world have discrimination laws similar to those in the United States. Some countries are as strict as the United States in following anti-discrimination laws (e.g., Canada and South Africa), whereas some other countries are more lax (e.g., Australia and England).

It can be mentioned that although the United States has taken the lead, other countries give employees even more protection and extend protection to additional groups not specifically mentioned in U.S. law. How different countries approach their discrimination problems depends on the nature of those problems and their societies. In 1995, the United Kingdom instituted the Disability Discrimination Act, which is much like the ADA in the United States. As in the United States, there is resistance by employers, especially those who have negative attitudes about persons with disabilities and who have little knowledge of what the law actually requires (Jackson, Furnham, & Willen, 2000).

Laws in Canada are similar to the United States in terms of enforcement, although Canada also disallows discrimination based on sexual preference, which the United States does not. To avoid legal problems, organizations in Canada need to follow practices to those they would follow in the United States. Ireland is a more homogeneous society than Canada or the United States, having fewer minority groups of sufficient size to push for legal protection. In Ireland, discrimination on the basis of gender or marital status is illegal, but the law is silent about Blacks or other minority groups (Federation of Irish Employers, 1991).

The countries mentioned here, as well as the remainder of at least the industrialized world, have endorsed the idea that employee selection should be based on the job-relevant attributes of people. With this approach, the person hired is the person who can best do the job. This will eliminate unfairness in the selection that results from discriminatory practices. It should also help organizations enhance their effectiveness by hiring the best-qualified people, regardless of age, color, disability, gender, national origin, race, religion, sexual preference, or other personal characteristics that are irrelevant for job success.

## 6.4 SUMMARY

Recruiting and selecting employees is one of the most important functions of an organization. There must be a supply of skilled people with the necessary competencies for an organization to remain effective. Acquiring such people involves a four-step procedure, which includes planning the need for new employees, getting appropriate people to apply for positions (recruitment), deciding who to hire (selection), and getting the selected people to take the jobs

Planning the need for new employees requires the use of forecasting methods. This involves comparing the need for people with particular

KSAOs with the number of such people who might be available in the area. Future planning for organizational changes and expansions must consider the availability of people to fill the necessary positions. Failure to consider these issues can result in the inability to find the people necessary to carry out an important organizational function.

Getting people to apply for jobs can be a difficult task if there is a shortage of qualified people. The problem is more often one of getting the right people to apply because there can be a surplus of people with certain skills and a shortage of people with others. There are a number of ways that organizations acquire applicants, including advertising, using recruiters, and using web-based services.

Scientific selection involves the use of selection devices that have been shown to predict job performance. Developing a system of effective or valid selection devices involves a five-step procedure: The KSAOs are identified with a job analysis, the criteria are chosen, the potential predictors are chosen, the predictors are validated with a research study, and finally, the predictors are cross-validated with a second sample or study.

Once an organization has decided whom to hire, it must convince the person to take the job. To do so, an organization must be sure that it offers rewards that are equivalent to those offered by other organizations. One procedure that has been used to ensure a better match between a person and a job is the realistic job preview (RJP), which provides accurate information about the job that allows an applicant to make an informed decision about accepting a job offer.

Utility analysis is used to determine the benefits of using a predictor to hire people. These analyses are based on mathematical formulas that require an estimate of the monetary value of good job performance. There have been disagreements among researchers about the best way to conduct utility analysis. Nevertheless, the results of utility analyses have shown that scientific selection can have substantial benefits for organizations.

Employee selection is not only a scientific process; it is also a legal process. Most industrialized countries have laws against discriminatory selection practices. In the United States, it is illegal to discriminate on the basis of age, color, disability, gender, national origin, race, or religion. To avoid legal problems, an organization must base selection decisions on job-relevant factors.

## 6.5 QUESTIONS

1. Discuss some psychological tests to measure cognitive ability.
2. Write a note on assessment centers.
3. How Do Organizations Select Employees?
4. How validation study is conducted?

5. Discuss some international differences in selection practices

## 6.6 REFERENCES


- Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice (6th ed). United States: Wiley.


*****

# 7

# TRAINING - I

**Unit Structure**



## 7.0 OBJECTIVES

After reading this unit you should be able to understand –

- The steps involved in training in an industrial or organizational setup
- How is needs assessment for training programs undertaken and what is the importance of needs assessment
- What are the trainee characteristics that should be kept in mind while designing the training programme?
- How can training be designed so as the maximize transfer of training
- How the work environment affects the transfer of training?

## 7.1 INTRODUCTION

Every employee who is selected and appointed requires training before he or she starts the work. Training is required for jobs at all levels. An employee may need training in the tasks required to be performed. For example, an individual who is appointed in the position of a clerk may require training about the different activities that he or she will have to perform as a clerk. Since every organization is different, even an experienced person will require some amount of training about how the work is undertaken in that specific organization. Thus even if an airline appoints an experienced air hostess, some training will be required to orient the employee to the methods and procedures followed in that organization.

Training is a process that involves teaching or developing knowledge and skills required for developing the competencies in an individual. In an

Industrial and organizational setup training is required for the following reasons:

1. New and freshly employed personnel may require training on the tasks to be performed on the job.

2. An already working employee may require training so as to improve their productivity and performance.

3. When there are changes in the nature of work or the introduction of newer technological advancements, an already working employee may need training for the newly introduced techniques.

4. When an employee is promoted, training will be required to help the person cope with the newer responsibilities and tasks.

Organizations may vary in the amount of importance that is given to training. In many organizations, undergoing some specific form of training is necessary for the employee to be promoted to the next position. For instance, some organizations require a manager to have some educational qualification or training of management, before promoting them to that position. The amount of importance given to training may vary depending on the position of the employee and also the nature of work to be undertaken by the employee. Jobs like that of teaching require continuously updating the information. Similarly, doctors need to continuously hone their skills with contemporary skills and techniques. These jobs require life-long and continuous training and learning process. Training is thus a very important function that an Industrial and Organizational Psychologist has to take care of.

A very important factor that determines the effectiveness of the training program is the extent to which it is systematically undertaken. Let us now see the steps that are required to introduce training systematically in an organizational setup.

### 7.1.1 Steps in the training process:

In order to make training an effective process, it is necessary to be systematic. Systematic training enables the organization to spend the resources of the organization in the most effective way. This involves the five important steps, and we will now see an overview of these steps:

1. **Needs assessment:** This is the first step of providing training. This step involves considering the employees who need training and identifying the kind of training that will be required by the organization.

2. **Setting Objectives:** After identifying the individuals who need training and the kind of training required, the organization may then set up the objectives that it wishes to attain through the training.

3. **Designing the training program:** Based on the objectives, the training programs are then designed and planned so as to achieve those objectives.

4. **Delivery of the training program:** Once the training program is planned it is executed by actually conducting the training program.

5. **Evaluation of training:** The delivery of the training program is then followed up by evaluating or assessing the effectiveness of the training program.

Let us now look at the above step with an example. For example, if an organization wants to introduce a training program, it is first important to find out what training program will it require and who are the people in that organization who require it. A Call centre may first need to find out what is the kind of training that is required in its centre to improve productivity and efficiency and also find out who are the employees who require it. If they find out that most of the employees who are attending the calls in communication skills, they may decide to undertake a training program in 'Communication skills' and find out who are the employees who have poor communication skills. Followed by this they will decide the goals and objectives to be attained through the training program and then design the Communication skills training program to achieve those objectives. After planning the necessary components of the training program, the actual program will be conducted or delivered. Followed by this the centre will then assess and find out whether the Communication skills training provided to the employees was effective in attaining the objectives for which the program was undertaken.

Let us now understand each of these steps in detail and try to understand why each of these steps is important.

## 7.2 NEEDS ASSESSMENT

This is the first step of the training program. We will now see what this step involves and also what is the importance of this step. An effective training program should begin with the assessment of what training is needed for the organization. This suggests that needs assessment should be the first step of training programs. It involves understanding who in the organization requires training and what training is required in the organization. A systematic needs assessment involves analysing the organization's training needs at the three levels (Goldstein, 1993) described below:

**1. Organizational level**:

Every organization has different objectives that it wishes to attain. For instance, some organizations may wish to increase their profits while others may wish to improve their service. Understanding these objectives will give an idea about what type of training is required for that organization. For instance, if the aim of a restaurant is to improve the satisfaction of its customer, it will be necessary to train the service

providers for techniques to satisfy the customer. The mission and the visions of the organization help an Industrial Psychologist to understand the training needs of the organization.

**2. Job level:**

The second level of needs assessment is to analyse at the job level. Every job requires different tasks to be performed by the employee. If people performing a particular job are not able to perform the task, training will be required in that task. For instance, if in a bank, the performance of employees in the clerical position requires knowledge of computer software for accounting, then training the clerks for that software is important.

**3. Person level:**

The third level of needs assessment requires analysing at the person level. This involves analysing every employee in terms of whether they possess the necessary KSAOs required for their position. Those who do not possess the necessary KSAO may require to be trained for it so that they are able to perform efficiently. For instance, if some doctors in a hospital lack the knowledge of how a new machine has to be used, those doctors need to be trained for the use of the new machine.

The analysis at the above three levels will enable the organization to understand what is required and accordingly new training programs can be designed on the basis of needs assessment. When an organization analyses what training is required for every individual, group of individuals performing a particular job, and also all the individuals in the organization, it ensures a complete understanding of what training is required and who are the individuals who require it.

However, it is also necessary to evaluate the already existing training programs in the organization and identify whether they are needed. As suggested by Ford and Wroten (1984) this may be done through the following steps:

1. The already existing training programs are evaluated by SMEs in terms of what are the KSAOs developed by that program.

2. Another group of SMEs then evaluate the KSAOs and rate the extent to which those KSAOs are required for that job.

In this way, those training programs that help in the development of KSAOs may be retained while those that are not useful may be modified if possible or even eliminated. Needs assessment is a very important step in a training program. It proves to be useful in the following ways –

1. It helps the organization to know what kinds of training programs are required for the organization.

2. It helps to know whether the already existing programs are useful or not.

3. It helps in using the resources spent on training in an effective manner by avoiding wastage of money on those training programs which are not useful.

Although needs assessment provides important information about training programs, very few organizations conduct a systematic analysis of the needs of the training program. After the assessment of for whom and what training is required, the I/O psychologist has to decide on what objectives are to be attained through the training. This is the second step of training. In the next section, we will now see the step of setting up the objectives of the training program. We will try to understand how objectives are set and why is it important to set up objectives of the training program.

## 7.3 OBJECTIVES OF THE TRAINING

After assessing the needs of the training program, the next step of training is to set up the objectives of the training program. This step involves deciding what the organization aims to achieve through the training program. These objectives are based on needs assessment. For example, if the organization finds out in the needs assessment the need for the staff in the restaurant to be more customer-friendly, then the training to be provided to them should be with the aim to increase customer satisfaction. Having objectives is important for the following reasons:

**1. Direction:**

Firstly it gives direction to the training program. Having objectives helps in designing the training program to achieve that goal. When training programs are planned without any objectives, it results in a wastage of money. Also, the trainer is not able to understand what is to be achieved through the training program.

**2. Evaluation**:

Secondly it also provides the criterion for later evaluating the effectiveness of the training program. Thus if the training program is planned to make the restaurant staff customer-friendly, this program may later on be assessed for its effectiveness by evaluating whether it has in any way increased customer satisfaction.

It is quite common in organizations to carry out a training program just because it is popular or because it is undertaken by other organizations. Sometimes training programs are undertaken by an organization without knowing what it wants to achieve through the training programs. This leads to wastage of money on the training program and it also results in the ineffectiveness of the training program. This shows that setting up the objectives of the training is very crucial to improve the effectiveness of a training program.

Once the objectives are decided, the training programs are designed to attain those objectives. We will now see in the next section the aspects to be taken into consideration while designing a training program.

## 7.4 TRAINING DESIGN

We now come to the third step of training. After the assessment of the needs of the organization and deciding on the objectives of a training program, the details of the training program are to be chalked out. Let us now see the different aspects to be taken care of while planning the training program.

In this step, the training program is planned and designed. One very important factor that should be considered while designing the training program is – the transfer of training. All training programs planned by the organization aims at achieving transfer of training. Every organization wants the employee to use and apply the skills that are learned in the training situation to the job situation. When an organization invests money in training the employees for use of a computer, it will want that whatever is taught in the training program is understood by the trainees and also that they go back to the job situation and are able to apply the knowledge of computer and also use a computer at the work place. If the training program teaches the trainees to use a computer but the trainee is not using it while he or she is working, then it means that the training was ineffectual. **The extent to which the skills learned in the training situation is applied to the job situation, is called transfer-of-training**. Training programs should be designed in ways that would bring about greater positive transfer-of-training.

Let us now see the different factors that determine the transfer of training and also the learning that takes place in the training situation. According to Baldwin and Ford (1988), there are three major factors that will determine the transfer-of-training: **characteristics of the trainee, characteristics of the training design**, and **characteristics of the work environment**. We will now see how each of these factors influences the extent to which the knowledge and skill that is taught in the training program is learned and transferred to the work situation. We will first discuss how the characteristics of the trainee influence learning and transfer in the training program.

### 7.4.1 Trainee characteristics:

When several trainees attend the same training program, all of them do not gain equal benefit from it. Some trainees learn and gain considerably while others may not learn much from it. There are various characteristics of the trainee that affects the extent to which they benefit from the training. Let us now see some important characteristics of the trainee that may influence the learning and transfer of training.

#### a. Ability:

One factor with the trainee, which determines how much they will learn from the training is their ability. Every trainee differs from other trainees with respect to their abilities and the abilities of the trainee will determine how much they will be able to gain from the training. For instance, if an employee has the high linguistic ability (Ability to deal with words and

language), he or she is likely to gain more from language training as compared to someone with low linguistic ability. A good training program should evaluate the abilities of the trainee before offering any training so that more training is provided to those who are low in that ability. This will help those low in the ability to gain better from the training program.

**b. Attitude:**

Another characteristic of the trainee that influences the learning from the training program is the attitude of the trainee. The attitude here refers to what does the trainee think about the training program. Trainees who have a positive attitude towards the training program are likely to gain more from the training. Those trainees who attend the training program with the thought that they want to learn and gain from the training program, are likely to learn better and also apply it to their job situation. On the other hand, trainees, who think that attending the training program is a waste of time and the training is of no use to them, are less likely to benefit from the same.

**c. Motivation:**

The motivation of the trainee is another determining factor of how much an individual learns from the training. Trainees, who are motivated to learn, learn better and also are more likely to apply what they have learned in the training program to the job setting. Thus it is necessary to select trainees who are high in motivation and have a positive attitude towards learning. Also, the trainer needs to take measures to increase the motivation of the learner by providing rewards and reinforcements for learning.

**d. Learning style:**

Another characteristic of the trainee that influences the learning from the training program is the learning style of the learner. Learners differ in their preferred mode of learning. While some learners are visual learners, others may be verbal learners. Thus some learners are able to learn better with written material, while others may benefit better from the audio presentation. A good training program should consider the learning style of the learner so that every learner is benefitted from the training program.

Thus, the characteristics of the trainee have a strong influence on their learning and the extent to which they will be able to apply the learning to the job situation. Trainers should consider these factors while designing the training programs so that they select the right kind of trainees. Also, it is necessary to make changes in the training design so that the maximum number of trainees benefit from the training program.

While designing a training program, another factor that should be considered is the factors that will help in maximizing the transfer of training. In this next part, we will be discussing the factors that determine the transfer of training.

### 7.4.2 Design factors that affect the transfer of training:

As mentioned earlier, an effective training program should produce not just changes at the training level, but also at the job level. Training programs should be designed in such a way that it facilitates the positive transfer of training. This means that whatever they have learned in the training sessions should be possible for the trainees to apply it when they go back to their work situation.

How much a trainee will learn from the training and apply it also depends upon the manner in which the training program is designed. When the training is based on principles of learning, it is likely to maximize learning as well as the transfer of training. Let us now see some of the important principles of learning that can have a positive effect on learning.

**a. Feedback:**

Feedback is an important component of a good training program. A learner learns better when he or she is given feedback about the learning. When a person who is being trained for using new computer software is given feedback about whether he or she is using it correctly or not, it is likely to produce better learning. Feedback helps in two important ways:

(i) Firstly, it tells the person when he or she is moving in the right direction.

(ii) Secondly, it helps in modifying the behaviour when the learner commits an error. Correcting and timely feedback of the wrong behaviour prevents the wrong behaviour from being continued. When the machine operator is not operating the machine properly, if feedback is given immediately, it will help him or her to rectify the mistakes much before it gets firmly established.

To make the training effective it is thus important to incorporate the principle of feedback. This may be done in different ways:

i. One way of doing this is to test the individual intermittently and provide appropriate feedback. In a training program for Communication skills, after every skill, the trainer may give some task based on the content taught and give feedback on the same.

ii. Second way of incorporating feedback in the training program is by building feedback into the training program so that the trainee automatically gets the feedback about the learning process. For instance, after training the employees in assertiveness skills, they may be asked to respond to some situations in an assertive manner through computer-programmed software. The software may give feedback to the learner about the correctness of the response. In this way, the learner may be able to find out about his or her own progress and obtain feedback about the learning process.

**b. General Principles:**

Another principle of learning that needs to be followed to improve the effectiveness of training is the principle of 'general principles'. Theories of learning have suggested that learning is better when a learner knows not just what is to be done, but is also informed about why is it to be done. For instance, rather than only telling the machine operator how to operate the machine, it is better to also inform them why it has to be operated in that manner. Providing certain general information about the machine and why a particular process should be followed will create a better understanding of the work. Although it may not be necessary to go into the details of the machine and its mechanics, general information will foster better learning of the processes to be followed.

**c. Identical Elements:**

Training in an industrial setup always aims at positive transfer of training. The training should produce greater application of what has been learned in the training situation to the job situation. One factor that determines Positive transfer is the similarities between the two situations. The greater the similarities in two tasks, the greater will be the possibility that what is learned in one situation will be transferred to the other situation. When a nurse is trained to use a Blood pressure machine that is similar to that which is used in the hospital, he or she will be able to apply the contents of the training to the hospital setup On the other hand, if the equipment used in training is very different than what is used in the job situation, trainees may find it difficult to apply the contents of the training program.

In training programs for the development of skills, the principle of identical elements is particularly important. While training an individual to drive a vehicle, learning will be better when the trainee is trained while in a vehicle rather than only showing an image of the driving wheel. Training for such skills often makes use of simulators.

A simulator is a program or a machine that produces a virtual image of a real-life situation. Simulations involve creating different scenarios and equipment which allows the trainee to practice certain skills before they perform them in a regular situation. For instance, pilots may be trained in a simulated situation before they fly an actual airplane. Simulations may vary in fidelity (that is closeness of the situation to realism). Let us see simulations based on the levels of fidelity (Low and High)

i. **Low fidelity simulations**: Low fidelity simulation uses situations that are not very high on realism. For instance, when a doctor or a nurse is trained through case-studies or role-play, it involves low fidelity simulation. The case study or role-play exposes the trainee to the situations that they are likely to encounter in the job situation; however, it is not very realistic.

ii. **High fidelity simulation:** On the other hand, high fidelity simulation involves creating the most realistic experience for the learner. Training the doctors with the help of computer-based mannequins

which mimic the real situation to which the trainee doctor needs to respond, will enable them to learn the skills necessary for surgery.

Simulations are used in the training of medical practitioners, pilots, defence and armed forces, and many other occupations. The most important advantage of the simulations is that it produces situations that the trainee is actually going to experience in their job situation. When they are trained for those situations that are realistic, they will be able to apply the responses or the skills that they are trained for and it will foster the greater transfer of training to be demonstrated by the learner.

**d. Overlearning:**

Another factor that determines learning is the extent to which the matter is learned. As is generally expected, practice makes a man perfect. Similarly, even in the training program, when the content is thoroughly learned, it is likely to produce higher efficiency and is more likely to be transferred to the job condition. While training accountants to maintain books of accounts, the more the amount of practice given to the trainees, the better would be their understanding and learning of how the books of accounts have to be maintained. Principles of learning suggest that learning should not stop once the trainee has understood the content, but it should continue to be practiced even beyond that. Learning beyond the point of understanding by further practicing it, is called overlearning. Overlearning a task produces a number of advantages.

i. Firstly, with overlearning the strength of learning becomes stronger.

ii. Secondly, with overlearning an individual is likely to work in a more efficient manner. For instance, a car mechanic will be able to change the tyres of a vehicle at a faster pace when he has overlearned the skill.

iii. Thirdly, with a mental skill, overlearning helps the trainee to develop a better understanding of the content and the nature of the work. It produces insight into why certain procedures and processes are to be followed.

iv. Another very important advantage of overlearning is automaticity. When a task is undertaken over and over again, the learner is able to undertake the action automatically without much thinking. A doctor, who has overlearned a certain kind of surgery, will be able to undertake that surgery without much thinking. This enables the doctor to perform speedily as well as accurately.

A good training program should aim at producing overlearning in the trainees. This may be done in the following ways-

**i. Repetition:**

When a matter is taught only once, there is a possibility of forgetting the material. However, if it is repeated again in the course of training, it is possible to revive the content. Even in the training program for

Communication Skills, if listening skills are taught only once, it is likely to be forgotten by the trainees. However, if the trainer revisits the listening skills again in another context, it is likely to strengthen the understanding of listening skills in the learners and will produce better learning.

**ii. Practice:**

Another way of producing overlearning in a training program is through practice. Trainees should be given ample amount of practice in the content that is taught. A training program for leadership should give sufficient opportunity to the trainees to practice leadership skills and also provide different situations that managers will encounter on their job. This will allow the trainee managers to rehearse the skills again and again and also in varied contexts.

One study conducted by Driskell, Willis and Cooper (1992) involved understanding the relationship between overlearning and performance of the task. This study involved a meta-analysis where several similar studies are combined and statistically reanalysed. This meta-analysis showed that as the amount of overlearning increased, the performance of the task also showed improvement. This study thus provides empirical evidence of the importance of the overlearning of the task. However, the effect of overlearning does not last for a very long time. A study by Rohrer et al. (2005) showed that overlearning is beneficial in improving performance over a short period of time (One week). However, it does not have any beneficial effect over a long period of time (nine weeks). Training programs need to take these conclusions into consideration when designing the program. Overlearning through practice and repetitions is definitely important. However, the practice of a task should be undertaken with repeated intervals to produce better effects. This is called Spaced Learning. The content that is taught and practiced should be again revisited after a few weeks or months rather than learning and practicing it in just one session.

**e. Sequencing of Training sessions:**

The training sessions if carefully planned will produce better learning outcomes. While planning the sequence of training sessions, attention needs to be paid to the time aspect and the content aspect of training. With respect to the content aspect, the training sequence may take the form of the Whole method or Part method. Let us now see what the whole and part method involves.

**i. Whole method**:

In the Whole method of training, the entire task is presented to the learner in one go. For instance, employees may be given training for first aid, all in one session. Although the whole method is time-saving and helps to understand the entire task as a whole, it also has certain disadvantages. It may produce fatigue if the task is very long and complex. Some learners have a lower span of attention and may find it difficult to focus their

attention for a long period of time. For such trainees, it is necessary to use the part method.

**ii. Part method**:

In certain situations, it is necessary to break the content and matter to be taught into separate components and present it to the learner, one at a time. For instance, the contents of the training program for first aid may be divided into small components and presented to the learner one after the other. The next content is presented only after the trainee has mastered the earlier component. This method is known as the part method. For eg, to train employees for Communication skills, first, they may be trained for talking skills and once it is mastered, the trainer may proceed to the next skill. This method reduces fatigue and allows complex tasks to be broken into parts. However, a very important limitation of this method is that the task is learned in pieces. Hence it is important while using the part method to finally integrate the components into a complete task. Thus, after teaching different components of communication skills through the part method, finally, it is necessary that the learner integrated all the components as a whole. This helps in bringing the parts into holistic learning of the skill.

Another aspect of sequencing the learning material is with respect to time. Accordingly, training may use a mass method or distributive or spaced method. Let us now see these two methods – Mass and Distributive training.

**i. Mass training**:

Mass training involves learning at a stretch without any breaks. If employees of a bank are trained for using computers at a stretch from 9 in the morning up to 2 pm, it may be called Mass training. Training that continues for a long time enables the trainer to complete a good amount of content and several things can be taught in a single session. It is especially useful when the trainee is to be relieved from his regular work to attend the training program. In such a situation, it is better that the training is completed in the least number of days.

**ii. Distributive training**:

As against the Mass method, another method is Spaced or Distributive training. This involves breaking the time into components or slots and rather than continuously training the learner, the training may take place in different time intervals. For instance, rather than holding the training for use of computers from 9 am to 2 pm, the training may be divided into 3 sessions of two hours each. This is particularly important if the task is complex. For such tasks teaching the entire task in one session, it may be divided into 3 slots of 2 hours each with breaks in between. This allows the learner to have breaks in between and reduces the fatigue and boredom that results when training goes on for a long time. Research shows that spaced training enables better learning and helps the learner to remember the material for a longer period of time. It is especially important when the

training is offered for those skills which are not regularly required. For skills that are rarely required on the job, it is necessary to use spaced training. Using spaced training for such skills will ensure that the trainee will receive an intermittent practice of the skill at frequent intervals. Such follow-up training with spaced sessions is a good way of refreshing the learned matter.

As discussed here, the whole and part methods are concerned with the content of the training while mass Vs. Distributive training is concerned with the time allotted for the training. All the methods have their own advantages as well as disadvantages. It is necessary to consider the nature of the content to be taught and the characteristics of the trainee before deciding what is to be done with the content and the time allotted for training. Thus sequencing of the training program should be determined by characteristics of the learner as well as the characteristics of the task for which training is required.

This section thus focused on the principles of learning that should be incorporated to make the training effective. A good training program should thus have the following features:

i. Provision of feedback to the trainee about his or her learning

ii. Give general principles and information about why certain behaviour should be undertaken.

iii. Involve content that is similar to what the trainee is expected to perform on the job.

iv. Provide opportunities for overlearning

v. Sequence the training program by deciding on whether the content should be presented as a whole or part, and also whether learning should take place at one time or by diving the time into slots.

In section 7.4, we are considering the designing stage of training program. We have discussed how designing should consider the characteristics of the trainee and the method of training. For effective transfer of training, another factor that is very important is the work environment. We will now discuss how the work environment determines whether the skills learned in the training will or will not be transferred to the work situation.

### 7.4.3 Work Environment:

Apart from the Trainee characteristics and Training design, another important factor that determines learning and transfer of training from the training sessions is the Work Environment.

The workplace is a complex situation that involves a number of conditions and people that may determine whether the trainee will apply the skills and knowledge that he has learned in the training program to the job situation or not. Let us now discuss some of the ways in which the work environment will influence the transfer of training.

**1. Support by the Management**:

The management of the organization plays a crucial role in the transfer of training shown by the employee. The management may support the trainee through relieving the individual from the regular work in order to attend the training program and encouraging the employee to undertake the trained skill and knowledge. Such supportive behaviour may allow the trainee to execute the behaviour that he has been trained for.

**2. Support offered by the Supervisor**:

An employee will be able to attend training and complete it only if the supervisor offers the necessary support by relieving him from the regular work. Thus, the supportive role offered by the supervisor is an important condition. The supervisor's support in using the skills that the individual is trained for is also very important. After the training, whether the employee is allowed to implement and exercise the changes in the job situation will depend upon the supervisor. If the supervisor does not allow the employee to use the techniques that he or she is trained for, the skill and knowledge may not be demonstrated in the work condition.

**3. Support from the other employees:**

Transfer of the skills to the job environment also depends upon the attitudes and reactions of the other employees. If the employee is encouraged and praised for demonstrating the newly learned behaviour, it will encourage the trainee to practice the task and implement it in the job situation. However sometimes the other colleagues of the trainee may mock at the person for showing the changed behaviour. This may discourage the trainee to implement the skill that he has been trained for.

**4. Opportunity to demonstrate the new skill:**

The skill or the knowledge that the employee is trained for maybe demonstrated only when the organization produces the opportunity to do so. In the absence of such an opportunity, the learned skill may prove to be futile. For instance, a doctor may be sent for training to use a new surgical instrument. However, if the hospital that the doctor is working for, does not have the resources to buy the new instrument, the trainee may not have the opportunity to demonstrate the new skill.

The role of the environment has to be supportive so that the skills and knowledge that has been learned may be put into practice for the development of the organization.

## 7.5 SUMMARY

**Training** is an important aspect of Industrial and organizational psychology. It is required for new employees as well as old ones. Employees at all levels require different types of training. In order to make the training process effective, it should follow the steps, namely **i) Needs assessment**, which involves assessing who in the organization requires

training and what kind of training is required; **ii) Setting objectives**, following needs assessment, objectives that are to be attained through the training are decided; **iii) Designing the training program**, which involves planning the way in which the training program should be undertaken and considering the elements, namely, **characteristics of the trainee**, **factors affecting transfer**, **work environment**, and **methods of training**. While designing the training program, it is important to take into consideration the abilities, attitudes, motivation, and interests of the trainee.

Similarly, it is necessary to take into consideration the different principles of learning so that the training program results in the transfer of skills to the job setting, namely, **feedback**, **general principles**, **identical elements**, **overlearning**, **sequencing of training sessions**. Along with these two steps, namely, **iv) delivery of training** and **v) evaluation of the training**, it is also important to consider the work environment of the trainee and choose the appropriate method of training. In **delivery of training**, the training is imparted by the trainer or the SME. **Evaluation of the training** involves assessing the utility and effectiveness of the training program.

## 7.6 QUESTIONS

1. How does the work environment influence transfer of training?
2. What are the different design factors that affect the transfer of training?
3. Distinguish between high-fidelity and low-fidelity simulations.
4. Distinguish between Whole Vs. Part training.
5. Distinguish between Mass Vs. Distributive training.
6. What is involved in the Needs assessment stage of training?

## 7.7 REFERENCES


- Spector, P. E. (2012). Industrial and Organizational Psychology: Research and Practice. Singapore: Wiley. (Indian reprint 2016)
- Aamodt, M. G. (2013). Industrial Psychology (7th ed.) Boston, MA: Cengage Learning
- Shultz, D. & Schultz, S. E. (2010). Psychology and Work Today, Pearson Education, Inc.


*****

# 8

# TRAINING - II

**Unit Structure**





## 8.0 OBJECTIVES

After completing this module, you should be able to:

- Evaluate the different methods of training that are commonly used in the Industrial and organizational setup.
- Describe the steps involved in the evaluation of the training program.

## 8.1 INTRODUCTION

In the earlier unit, we saw the first two steps of training (Needs assessment and Objectives) completely and then came to the third step of designing the training program. In this module, we will continue to see the third step and then move ahead to see the further steps of training. In the third step

that involves designing the training program, it is necessary to also plan which method will be used for training. After discussing this aspect of training, this chapter will touch upon the fourth step of training- delivery of the training and then finally come to how a training program is evaluated in an industrial set-up. Let us now see the different training methods.

## 8.2 TRAINING METHODS

While designing the training, apart from understanding it in terms of the different principles of learning, it is also necessary to decide on the method of training to be adopted. A trainer may adopt any of the different methods in order to impart the training. Each of the methods has its own advantages as well as disadvantages. Hence a training program may also involve combining two or more training methods in order to achieve the objectives of the training. Let us discuss some of the important methods adopted in the industrial setup or different training programs.

### 8.2.1 Audio-visual Instructions:

This method of training involves using the electronic medium for training the employees. The electronic medium is used to produce the content of the material in an audio, visual or audio-visual format. Some of the ways in which audio-visual instructions may be used are as follows:

i. The trainees may be given information about how to operate a machine through audio recording of the same.

ii. Training on how to repair a computer may be imparted by making a visual presentation through the power-point presentation, which may be used for training.

iii. Audio-visual instructions may combine audio as well as visual components in order to train the employees. Training for communication skills may be recorded using audio-visual elements.

Audio-visual instructions thus make use of different electronic recordings such as audio recordings, video recordings as well as audio-visual recordings for training. A trainer may either primarily use the audio-visual instructions alone for training or may use it as a source of enhancing the training along with other methods. For instance, to train employees on the use of a new device, the trainer may send an audio recording to the trainees. Alternatively, the trainer may hold a lecture and may show a power-point presentation or video to demonstrate the working of the device. Some of the advantages of this type of training are as follows:

i. Audio and visual presentations are more impactful in creating an understanding of the content.

ii. Audio recordings may be preserved electronically and may be used to train people who may not be able to attend the training program personally.

iii. Visual presentation helps to effectively explain the abstract concepts.

iv Audio-visual instructions may be preserved and used to train employees from different geographical areas.

v. Once recorded, audio-visual instructions may be used multiple times and can be useful in training those individuals who may not be able to attend the training program due to inability to get leave from job.

vi. This method is a very flexible method and can be altered depending upon the needs of the training program

This method also has certain limitations as follows:

i. The trainer needs the training to convert the training in an audio-visual format. When the conversion into audio-visual format is not undertaken correctly, it may produce difficulties in understanding the content.

ii. If an audio-visual presentation is used as a standalone method, it may not give the trainee an opportunity to get clarification of his or her doubts.

**8.2.2 Auto-instruction:**

This is a systematic and self-paced presentation of material where the content is delivered in a programmed manner. It is a training method in which the content of the training is divided into subunits. The units are organized systematically and presented in a step-by-step manner. Every unit consists of the following:

1. **Content:** The details of the matter to be learned is presented.

2. **Questions:** Followed by the content, there are questions based on the content. These questions help the learner to check his or her own understanding of the content.

3. **Feedback:** There is immediate feedback given to the individual about his responses to the questions. This enables the learner to know the level of understanding.

In this manner, every unit is presented to the trainee to help him or her develop knowledge or skills that are intended to be developed. Some of the important features of auto instructions are as follows:

1. **Self-paced:** Auto instructions are developed with the aim to allow every trainee to move at their own pace. Since trainees differ in their abilities, every trainee may require differential amount of time for different skills and capacities.

2. **Systematic presentation:** Since auto instructions are based on individualized pacing, the content is presented in a systematic manner so that the trainee can independently go through the content and understand the material.

3. **Feedback:** Auto instructions are based on the behavioural principles of giving immediate feedback. Hence after every unit, there are questions that enable the learner to know the extent to which they have understood the material through immediate feedback about its correctness.

4. **Repetitions:** The content that is presented is repeated in different contexts so that the learner gets sufficient practice of the content.

Auto instructions may be provided in two forms – book (Manual) form or computer program. For instance, leadership training may be conducted by preparing a manual, in which systematically the skills may be described in separate units. Alternatively, it may be developed electronically and presented through a computer by dividing it into modules.

Some of the important advantages of this method are:

1. **Flexibility:** The self-paced format of this training method allows flexibility to the trainee to go through the material as per his speed of understanding and convenience.

2. **Immediate feedback:** The evaluation at the end of every segment of the instruction enables the learner to check on his or her understanding and immediately go back to the content to get a better understanding of the content.

However, there are also some limitations of this method that needs to be taken into account:

1. **Cost:** The most important limitation of this method is the cost incurred in preparing the content.

2. **Training:** The trainers who have to develop the training in form of auto instruction need to be trained to prepare a systematic presentation and produce the content so as to be suitable for self-learning.

Although this method is time-consuming and expensive, once prepared it is likely to be used for several years and may be useful to train several employees spread across different geographical locations.

### 8.2.3 Conference:

Another commonly used method for training in the Industrial set up is the conference method. This method involves training being provided through meetings in which there is a discussion and free exchange of ideas related to the content for which training is intended.

Doctors may be trained to handle different emergencies through conference method. In a conference all the doctors may meet and discuss the measures to handle emergencies with different experts sharing their views and experiences. Such training can be used in any professional field. This method has the following advantages:

1. **Exchange of ideas:** This method provides the trainees with information from several experts and experienced persons.

2. **Clarification of doubts:** Since there is a face-to-face interaction between the trainee and the trainer, it provides scope for getting the doubts of the trainee to be clarified.

Some of the important limitations of this method need to be understood before understanding the value of this type of training.

1. **Experience:** The conference method is beneficial when the trainee has some knowledge of the content. A trainee who has no knowledge at all may not benefit from the conference.

2. **Lack of systematic presentation:** Conference may not be as systematic as a lecture method or auto instructions. The ideas may keep flowing as the discussion goes on. This makes it necessary for the trainee to be capable of putting all the presented ideas and organizing them. Without these capacities, the trainee may not be able to benefit much from the conference.

This shows that the Conference method is a valuable method to train trainees who are experienced to further enhance their learning and hone their skills and knowledge.

**8.2.4 Lecture**:

One of the popular methods of training is the Lecture method. This method consists of an expert or the trainer presenting the content to the trainee or group of trainees. The supervisor in the industry may conduct a lecture to inform the employees in his department about the manner in which the work has to be conducted. Psychologists may train the trainee psychologist about psychotherapy with a series of lectures on the topic. This method is the most widely used method since it has some important advantages. Let us discuss some of its advantages:

1. **Efficient:** With the help of a lecture the trainer can provide a lot of information about the content and even share his or her experiences. This makes it a very efficient method.

2. **Mass training:** The lecture method is suitable for mass training since the same trainer can accommodate a large number of trainees at one time. It is this characteristic that makes this method very suitable when a large number of individuals are to be trained at the same time.

3. **Economical:** The lecture method is considered as a cost-effective method of training. It enables the trainer to provide information to many employees simultaneously and does not incur any additional expenses to the organization. This is the reason why information-based training generally makes use of the lecture method.

4. **Flexible**: Flexibility is a very important advantage of this method. This method can be easily used with any other method. For instance,

in a conference method, if some information is found to be lacking in the participants, one of the experts may conduct a short lecture to give information regarding the topic.

Although a very popular method, it is also necessary to understand some of the important limitations of this method.

1. **Skill development:** This method is not suitable for the development of a skill. For instance, training for use of computer software only by conducting lectures will only provide the trainees with the knowledge but not produce the skill.

2. **Monotonous:** Sometimes a lecture may become a monologue with only the trainer talking and the trainee is expected to listen. The passivity of the trainee may bring about a feeling of monotony and boredom.

3. **Distractions:** A lecture need not always involve one-way communication. Sometimes it may take the form of two-way communication with the trainees to participate in the lecture. However, this may result in distractions and occasionally diverging from the topic.

An industry may use this method tactfully to provide information for a large number of trainees. However, having a trained person who knows how to deliver the content by balancing the information and clarifying the trainee's doubts, without diverging from the topic, will make this method effective.

### 8.2.5 Modeling:

The Theory of Social Learning states that several behaviours are learned through imitation or by copying others. On the basis of this, modeling has been adopted in several ways to educate people about different topics. This method is also used in training employees, especially when skills development is the focus of the training program.

Modeling involves training by exposing participants to a model who demonstrates the behaviour to be learned. A surgeon may be trained for surgery by exposing him to a demonstration of the surgery by a trained surgeon. A pilot may be trained to fly an airplane after being demonstrated by a trained pilot. Modeling as a method of training involves the following steps:

1. Trained or expert personnel demonstrates the skills in a systematic manner.

2. The trainee observes the skill demonstrated by the expert.

3. The trainee then mentally rehearses the skill.

4. The skill is then imitated by the trainee

5. Feedback is given to the trainee about the skill

In an industrial set up modeling may use either a live model where the expert demonstrates the skill in reality or it may also involve using video recording of the demonstration by the expert.

A very important benefit of this method is the advantage of actually demonstrating the task. Rather than only giving instructions about how to use a device, when an expert actually demonstrates it, it helps in creating a better understanding of the task. In fact, to improve the learning of a skill, demonstrations should include not only desirable behaviour but also undesirable behaviour. When modeling is used to train managers for interviewing skills, the model should demonstrate the desirable behaviour and also the undesirable behaviour. This facilitates better development of the skill. Secondly, this method gives the trainee the opportunity to practice the task immediately after having demonstrated it by the trainer. Another important advantage of this method is the possibility of getting feedback. With the feedback, the trainee is able to understand the areas where improvement and modification are required.

Although a very important method, a very important limitation is that it is not possible to always demonstrate every variety of a task. For instance, some surgeries may be demonstrated but it may not be possible to demonstrate all varieties. Secondly, it may become time-consuming in comparison to the lecture method. Another important limitation is that it cannot be used with a large number of participants since a trainer may not be able to observe and give feedback to a very large number of participants.

### 8.2.6 On-the-Job Training:

On-the-Job training is a training method in which the person is absorbed in the workforce by the organization and is trained for the work while he is working. For instance, a data entry operator who is employed by the organization may be trained for the work by the supervisor while he or she is working.

This method involves the task being demonstrated by the supervisor or the already trained employee while the trainee observes him or her. Gradually when the trainee is capable of independently working, he or she is allowed to work independently.

One form of on-the-job training is an apprenticeship, where an unskilled person is absorbed as an apprentice. During the apprenticeship, he or she is provided with the necessary training for the skills required and is given some amount as a stipend. Followed by the training they are then absorbed by the organization into their workforce.

On-the-Job training is beneficial especially for semi-skilled jobs like that of a plumber or carpenter. An unskilled person can very easily be trained in a short-period of time by observing a skilled worker. Secondly, this method is useful when skilled employees are not available. At such time an unskilled employee may be taken and then trained through on-the-job training.

Some of the important limitations of this method of training are that it cannot be used for those jobs that require a high level of skills. For such jobs, it is necessary that the organization appoints individuals who have formal training. Secondly, this method reduces the productivity of the employee who is asked to train the trainee, since that employee now has the dual responsibility of working as well as training. Another important limitation of this method is that since it is not offered by a trained trainer, it is less likely to be systematic in nature.

### 8.2.7 Role playing:

One very important method to develop skills is the Role play method. The Role-play method consists of the trainee performing the task in the presence of the trainer, who then gives feedback about the performance. For example, a psychologist may be trained for empathizing skills by asking the trainee psychologist to play the role of a therapist and demonstrate empathy for a client. A trained therapist who observes the role play may then give feedback to the trainee about the behaviour produced by the trainee.

The role-play method in this way consists of two steps, role-play and feedback. In the first step, the trainee is expected to assume the role of the employee and produce the behaviour expected out of that role. This is done in the presence of the trainer. In the second step, the trainer gives appropriate feedback to the trainee in terms of the right responses that were demonstrated and also the modifications that are necessary.

The role-play method is different from the Modeling method with respect to the demonstration by the trainer. In modeling, training begins with demonstrations by the trainer or a model, whereas in the role-play method there are no such demonstrations. It directly begins with a situation being given for the trainee to play the role and produce the behaviour. Role play method proves to be advantageous in different ways:

1. This method checks the employee's understanding of the task by actually making him or her produce the behaviour and hence a very important method for teaching skills.

2. It also provides an opportunity for the trainee to practice the task rather than only listening to information as is done in the lecture method.

3. In the role-play method the trainee also has the advantage of getting feedback about the performance.

The limitations of this method too need to be taken into account while using this method. One important limitation is that it is a time-consuming method. Secondly, it poses problems when a large number of trainees are to be trained at a time. In such a situation it is difficult for the trainer to observe everybody and give feedback.

### 8.2.8 Simulations:

For certain jobs, trainees may be trained not in the real situation but on a virtually created job situation. This method is known as simulated training. A pilot before being trained on the actual airplane is trained in a simulated condition by creating a virtual cockpit. In this virtual situation, the trainee has demonstrated the necessary skills and is made to practice the skills of flying the airplane.

As we had seen earlier, simulations may vary in terms of fidelity. In high fidelity simulations, there is a greater similarity between the real and the produced virtual situation, while in low fidelity simulations there is a lesser similarity between the two.

Simulations may involve creating the entire simulated environment or by virtually creating the situation on a computer. Pilot training institutes have the entire airplane condition being constructed on the ground to give the trainee pilots the feel of the airplane. However, this method is very expensive and is capable of training only a few trainees at a time. Hence virtually created simulations where on the computer the airplane conditions are produced to teach the necessary skills becomes more useful. This method can accommodate more trainees and is also cost-effective.

The most important advantage of simulated learning is its ability to produce the real work situation in the training process. This helps in improving the learning and produces a better understanding of the skill. There are many skills for which an individual cannot be directly trained using the actual device. For instance, a doctor cannot be directly trained to conduct surgery on a patient. In such situations first practicing the skill in a simulated condition becomes an efficient way of training for skills. Thirdly, simulated condition allows the trainee to practice the skills sufficiently before the employee shows them in the job condition. Due to these benefits, this method is very commonly used in training for jobs like the pilot, navy, air force, and medicine.

Cost is a very important limitation of this method. It is very expensive to create a simulated work environment. Apart from this, another limitation is the limitation in the number of trainees who may be trained with this method. It is difficult to use this method when a large number of trainees are to be trained.

### 8.2.9 Electronic Training:

Training programs are increasingly making use of different electronic mediums like computers and the internet. Such training is called electronic training. Electronic training is broadly classified into synchronous training and asynchronous training. In synchronous training, the trainer and the trainee meet in real-time over electronic medium from different geographical locations. On the other hand, in asynchronous training, the trainee may learn through the electronic medium at any time as per their convenience.

Electronic devices are involved in the training in different ways:

1. Internet and web pages are used as a mode of actually delivering training programs.

2. Computer-assisted instructions (CIA) are useful in presenting the training material in form of pictures and animations which facilitates understanding of the material taught.

3. Computer-managed learning (CML) involves a more individualized approach with the computer program analysing the performance of the trainee and then planning the training program in accordance with the progress.

4. Adaptive e training involves identifying the pace of the learner and modifying the content and speed of training to make it suitable for the pace of the trainee.

Thus electronic devices are useful in the delivery of the training program, making the content of the training program more impactful, modifying the training program to suit the pace of the trainee, and also monitoring the progress of the trainee. Electronic training has proved to be beneficial in many ways.

(1) The first benefit is the large number of trainees who may be trained at a time. Online training can accommodate a large number of participants and can train a large number of trainees at one time.

(2) Another strength of this form of training is its ability to train people across different geographical locations. Trainees from different locations may be trained through online training programs.

(3) The third advantage of electronic training lies in its capacity to make training more effective and impactful through images and animations.

(4) Some form of electronic training like Computer managed learning is self-paced and allow the trainee to take up the course at any time that is convenient to them. This allows the trainee to complete the training without the work being disturbed.

(5) Self-paced learning provided by electronic training proves to be beneficial since every individual has differential capacities and there are differences in the speed of understanding the content. This method is very useful for those who want to enhance their development and skills while they are still working.

Today there are various electronic mediums through which training is provided and also there are a large number of training platforms that offer electronic training for different skills. Electronic training is also becoming very popular. There are some limitations of this type of training, which need to be addressed.

1. The first limitation that needs to be taken cognizance of is the cost and expertise required to prepare computer-based training programs.

2. Second important limitation that comes up is with lack of supervision. Since it is self-paced, unless the trainee is self-motivated, trainees are likely to skip training and engage into procrastination. Thus the chances of completing the training reduces due to lack of supervision. This method requires high self-motivation and time management on part of the trainee to complete the training program.

Despite these limitations, electronic training offers a promising role in training people for various skills and knowledge and is growing in its popularity among a wide range of population.

**8.2.10 Mentoring:**

At every stage of an individual's working life, there are different situations faced which may take the form of challenges and conflicts. Very often the challenging situation may be handled effectively with some guidance by a person who is more experienced. For instance, if an assistant manager is not able to manage the unsupportive behaviour of his or her subordinate, the manager who is more experienced than him may guide him to handle the situation. Mentoring thus involves training through guidance and support that is offered by an individual who is more experienced and possesses more knowledge than the trainee.

The person offering mentoring is referred to as a 'mentor' while the trainee who receives mentoring is called a 'mentee'. The role of the mentor is to provide the necessary environment and support so that the mentee is able to grow in his career. Some of the important activities undertaken by the mentor are:

1. They may provide guidance for the mentee to move up the career ladder.

2. When the mentee is promoted and is not able to manage the responsibilities, the mentor may play a supportive role to help him to manage his responsibilities.

3. During the work-life of the mentee, when they experience some barriers or hurdles in growth, the mentor may help the mentee to understand and evaluate their perspective and if required they may even help the mentee to change the perspective.

4. The mentor may not always give directive assistance, but also assist them indirectly. The way in which the experienced person works and responds may also help the mentee by having a role model to look upon. Thus the mentor with their exemplary behaviour may also serve as a positive role model to the mentee.

Mentorship has been found to be a beneficial form of training for both, the mentor as well as the mentee.

1. The mentee definitely benefits from the guidance and support that is provided by the experienced mentor. This may prove to be useful for them to improve their efficiency and productivity and thereby develop their skills.

2. Second benefit of mentorship is the role of this form of training in transferring knowledge about the culture and practices of the organization. Every organization has its own set of procedures and cultural practices. An individual who joins the organization may take time to understand it. Having a mentor helps in being oriented to the practices and procedures of the organizational culture.

3. Having a mentor proves to be beneficial in improving the career of the mentee. With necessary guidance and improved efficiency, it helps the mentee to have better chances of being promoted.

4. Through mentorship programs, mentors get a chance to observe and understand the capacities as well as the potentialities of the mentee. This improves the visibility of the mentee who is highly capable.

5. Throughout the career life, an individual also faces certain personal problems or may even have personality characteristics that may act as a barrier in their growth process. Having a mentor helps in getting the necessary emotional support. It helps the mentee to evaluate the internal barriers and work through them with the help of the mentor.

The mentor too is benefited from the mentorship program since it gives them an opportunity to guide and nurture people under them and transfer their knowledge to others. Through this, the mentor may develop leadership skills.

Mentorship programs can also help the organization since such programs help in the effective transfer of knowledge and experience from a more experienced to a less experienced employee. This also improves the job satisfaction of an employee and reduces the stresses experienced by the employee. It makes the organizational environment more inclusive and improves employee engagement. Such programs may be effective in building a supportive and collaborative environment in the organization. To improve the effectiveness of the Mentorship program the organization needs to look into the following steps:

1. Identify the individuals in the organization who may have the capabilities to act as a mentor.

2. Formalize the mentorship program so that every mentee who joins the organization or who is in need of mentorship has someone to guide and support.

3. Identify the right mentor-mentee pair so that there is a mentor-mentee fit and both the parties benefit through the association with each other and the organization too benefits from the training.

4. The organization should check and evaluate the progress of the mentorship program intermittently and annually in terms of its effectiveness and satisfaction for the mentor and the mentee.

A proper check and overview by the organization is important since mentorship may not always work the way in which it should ideally do. Some of the problems that may be experienced in the mentorship programs are:

1. The mentor-mentee who is paired with each other may not be comfortable with one another. In such a situation rather than being helpful, a mentorship program may become more destructive in nature.

2. In certain organizations, the mentees may be allowed to choose the mentors whom they are comfortable with. Although this allows the mentee to choose, it also poses a problem of an imbalanced mentor-mentee ratio with some mentors being preferred by many while some may not be preferred by any. When a mentor is overburdened, it may become difficult to effectively perform their role of mentoring.

3. Mentoring program becomes effective when the mentors are given training on mentorship. This helps the mentor to understand their role and function and also helps them to perform effectively. In the absence of proper training, the mentor may sometimes be offering too much negative feedback or at times pushing the mentee beyond their capacities. Such behaviour may produce increased stress in the mentee.

4. It is not very uncommon for the mentor to take undue advantage of the mentee's emotional vulnerability. The mentor may demonstrate destructive behaviour like getting their work done by the mentee or asking for personal favours. This may result in frustration in the mentee and the relationship may produce difficulties rather than growth of the employee.

All the above suggests that mentorship programs have a number of benefits to the employee as well as the organization provided it is effectively planned and executed.

**8.2.11 Executive Coaching:**

Training is required for employees at every level. Employees at the executive level are experienced and aware of their roles and responsibilities. However, they do need some personalized training to enable them to lead effectively, grow progressively in their career and contribute productively to the growth of the organization. This form of training for the higher-level executives is known as Executive coaching. For instance, an executive who has been recently appointed for the position may not be able to face the challenges from the investor. At this time the retired executive may act as a coach and discuss ways and means of tackling the issues. The coach may share his experiences and also help

the executive to evaluate different perspectives to help him deal with the situation. Some of the important features of Executive coaching are:

1. It involves a professional relationship between the high-level executive and a coach who is appointed to train the high-level executive.

2. The relationship is individualized and involves a one-on-one relationship. The role of the coach is to understand the issues and the challenges of the manager and offer the necessary intervention.

3. The function of the coach is to help the executive to deal with the present challenges experienced by him or her and also prepare him for the future challenges. Another important function of the coach is to be supportive so as to help the manager to handle the situation effectively.

The training through executive coaching is beneficial for the managers at the executive level in the following ways:

1. Executive coaching helps the manager to understand the sources of his or her challenges and also provides support in thinking about how to handle the situations.

2. Executive coaching helps in developing skills such as negotiation skills, influencing skills, and strategic thinking in the managers. These skills help the executives to handle the problems that they experience at the higher levels of the organization.

3. Many employees promoted to the executive levels may lack managerial skills like delegation. This makes the manager being overburdened with work and they may not be able to work efficiently in the managerial functions. Executive coaching enables managers to understand and reflect upon their ways of functioning and develop more effective managerial skills.

4. It is an effective and efficient method of improving the leadership skills of higher-level managers.

5. This type of training enables the executive to become aware of their own selves and expand their capabilities.

The most important limitation of this method is the possibility of finding the right coach. For higher-level executives getting an appropriate person who will be able to guide the executive and offer proper growth advice is a difficult task for the organization. A good coach should have sound knowledge of the organization, psychology, and business so that he or she is able to provide appropriate directions and support to the executive. Secondly, since there is no systematic procedure to offer executive coaching and hence many times it may not produce the desired effects.

Thus in this section, we saw the different most commonly used methods of training. Each of the methods has its own advantages as well as

limitations. A trainer needs to weigh the pros as well as cons of the methods before employing them. These methods may also be combined to produce the desired effects. Thus designing of a training program should take care of using the different principles of learning and choose an appropriate method so as to produce maximum learning and transfer of learning.

Once the training program is designed and planned, then takes place the delivery of the training program. In the next section we will discuss the Delivery stage of the training.

## 8.3 DELIVERY OF A TRAINING PROGRAM

We will now discuss the next step of training. This is the fourth step of the training program. After the planning stage, the trainer actually begins with the training program. This is called the delivery stage of training.

This stage involves identifying the place or venue for the training program and making arrangements for the material required for the training. The material required will differ depending upon the nature of the training. Training for use of computers may require computer devices while training for surgery will require the operation theatre or simulated situations.

The delivery stage is an important stage in the training process. The expert who is appointed as the trainer has to systematically deliver the training program so that the objectives of the training are achieved. A lot depends upon the trainer and the planning skills of the trainer. A skilled trainer with effective planning will be able to train the trainee for the skills and knowledge that the training program aims at developing. The expertise of the trainer in the skill in question and in the training technique is important to effectively deliver the training program.

A training program may vary in duration with some lasting only for a few hours, while others may go on for months and some for a year or two as well. During the training program motivating the trainees to continue with the program and helping them to transfer it to the job situation is a very important task of the trainer. Some training programs involve intermittent follow-ups to identify the difficulties that the trainee has in applying and transferring it to the job condition. An I/O psychologist has to overview the delivery of the training program and offer necessary assistance for the smooth delivery.

After the delivery stage comes the last stage of the training program, which consists of evaluating the program. In the next section, we will see the details of the evaluation stage.

## 8.4 EVALUATION OF A TRAINING PROGRAM

In this final stage of the training program, the delivered program is assessed to identify its utility. All training programs which are planned and undertaken may not necessarily be useful. Some of the training

programs are useful while others after having delivered may not prove to be capable of achieving the objectives that it was designed to attain. Some training programs may enable only partial attainment of the objectives. All training programs needs to be objectively evaluated so that only those which are useful are continued, while those which are not useful may be discarded or modified as per the requirements.

In this section let us understand the steps involved in the evaluation of the training program. The evaluation of the training program involves a scientific and objective procedure to systematically identify the utility of the training program. This involves the following five steps and we will now discuss each of these steps in detail.

### 8.4.1 Setting the Criteria:

A training program is undertaken in order to achieve some objectives. These objectives can act as criteria to evaluate the worth of the training program. For instance, if the employees are trained for communication skills since there are a large number of complaints from the customer, the customer complaints may be the criteria against which we can now assess whether the training program is useful or not. Similarly, if in a manufacturing unit training was imparted for use of machine since there were a large number of accidents that were recorded in that unit, the number of accidents can be a criterion against which we can now evaluate the utility of the training program. The effectiveness of the training program may be evaluated for its effect at the training level and secondly at the performance level.

**a. Training-level**:

Immediately after the training there may be changes seen in the behaviour of the participants. These changes which help in understanding the value of the training program through the immediate impact of training, are called training-level criteria. Two criteria related to the training–level are Reactions criteria and Learning Criteria.

**Reactions criteria**:

This refers to whether the participants liked or did not like the training program. The extent to which the participants liked the training program helps us to identify the extent to which the training program was attractive and delivered well. At the end of the training program, a questionnaire may be distributed to the participants to understand their reactions to the training program. This will include items like –

1. The training program was useful
2. The training program was impactful

Responses of the participants to these items help in knowing whether the delivery of the training content and method was effective or not.

Only understanding the reactions of the trainee is not sufficient. It is also necessary to know at the training level whether the training was effective in producing the desired change. This is done through the Learning criteria

**Learning criteria:**

Training is intended to produce some change in behaviour. It is necessary to know the extent to which the training content and method was capable of producing learning of the skill or behaviour. For instance, after a training program on communication skills, it is necessary to know whether the desired skill has been produced in the trainees or not. This will involve the learning criteria. To understand whether this criterion has been attained or not, the trainer will have to ask the trainee to demonstrate the skill at the end of the session. Role plays where the trainee is asked to demonstrate the communication skill will enable the trainer to identify whether the training was effective in imparting the required skill. Similarly, if employees are training for mathematical ability, at the end of the training a small test on the same will help us to know the extent to which the training was capable of producing the learning.

It is necessary to remember that reactions criteria and learning criteria help us to know the value of training only at the training level. However, this does not ensure that the training is impactful in producing changes when the person is actually going to work. Hence it is also necessary to evaluate at the Performance level. Let us now discuss the criteria at the performance level.

**b. Performance-level:**

Every organization conducts the training program since it wants a behavioural change in the work environment. The success of the training program depends not only on its capacity to produce the changes at the training level but at the job level. Any change which is seen at the end of the training session may not necessarily be seen even at the job condition. It is possible that the training has produced communication skills when assessed at the end of the training program. However, it is not a guarantee that the employee may continue to show the behaviour at the job place. This makes it necessary to study the effectiveness of the training program by seeing its effect on the performance of the trainee. Performance level criteria include two criteria – Behaviour criteria and Results criteria.

**Behaviour criteria**:

This involves assessing whether the behaviour that the individual is trained for is demonstrated in the job condition or not. After having trained the managers for using democratic leadership patterns, it is necessary to know whether the manager is showing democratic leadership in his department while managing the subordinates. In spite of showing changes at the training level, if the manager is not able to use it in the workplace, it indicates that the training was not capable of producing transfer of training and hence efforts will be required to enable the participants to use it in the job condition. In order to know whether the

training is able to achieve the behaviour criteria, it is necessary to evaluate the behaviour of the trainees in the job situation before and after the training. When the subordinates of the manager are asked to evaluate the extent to which he or she shows democratic behaviour, before and after the training, we will be able to understand the effectiveness of the training at the behaviour level.

**Result criteria**:

Training may also be evaluated in terms of its ability to actually produce the results that it was intended for. For instance, if communication skills training was implemented because the customers were not satisfied with the communication skills of the clerks, the effectiveness of the training needs to be measured in light of its impact on the complaints. An effective training program should result in reducing customer complaints. This would be considered as the result criterion. Similarly, if the machine operators were trained because there were many accidents being reported in that department, the training effectiveness will be determined by the number of accidents and whether it has now reduced.

In this way, the training has to be evaluated completely and holistically to understand it thoroughly. It is necessary not to assume that if one criterion is achieved others too may be achieved. Sometimes training may show its impact on the training level but not at the performance level while at other times it may show effectiveness at the performance level but not at the training level. A complete understanding of the training program should be based on setting criteria at both levels and include all four criteria-reaction, learning, behaviour, and result.

### 8.4.2 Choosing the Design:

The second step of evaluating a training program consists of choosing a design to evaluate and assess the value of the training program. The two designs that may be used are Repeated measures design and Random group design. Let us now discuss these two designs one after the other.

**a. Repeated measures design**:

In this design, there is only one group of participants and they are tested and assessed in two conditions – the first time before the training program and the second time after the training program. For instance, to know whether the training program on communication skills was effective, the number of complaints of the customer before and after the training can be compared. Similarly, to understand the effectiveness of the training program on democratic leadership, the subordinates of the participants may be asked to rate the manager before the training program and later on after the training program. If there is a difference in the amount of ratings on democratic leadership, it can help in understanding the value of the training program. This design thus involves the following steps:

1. Assessment of the criteria

2. Delivering the training program

3. Re-assessment of the criteria

This method is also referred to as the Pre-test – Post-test design and has some important advantages. Since the same participants are compared before and after the training program it takes care of the individual differences that may influence the criteria. Secondly it is comparatively a more convenient method of evaluating the training program since the same set of participants is to be followed up.

However, a very important limitation of the repeated measures design is that the changes that are seen in the two conditions (Pre and post) may not necessarily be due to training. There could be many other factors within the individual and the organization which may produce changes in the behaviour. This makes the repeated-measures design less valuable.

**b. Random group design**:

Another design that is used is the Random measures design. This design makes use of two groups of participants instead of one – the Experimental (Training) group and the Control group. The participants in the two groups are to be controlled for important factors so that they are comparable and then one group is exposed to the training program while the other group is not exposed to the training program. The two groups are then compared on the measures of criteria to understand the effectiveness of the training program.

For instance, to understand the effectiveness of a democratic leadership program, two comparable groups of managers are chosen and one set is randomly allotted for participating in the training program, while the other group is not offered training. After the training program, the subordinates of both groups of managers are asked to rate the managers on the extent to which they show democratic leadership behaviour. The ratings given to the two groups of managers will help us to identify the extent to which the training program was capable of producing the desired effect. This method thus involves the following steps:

1. Dividing the participants into two groups (Training and No-training group)

2. Introducing training to the training group

3. Assessing the behaviour of both the groups (Training and no-training group)

This method has the benefit of controlling for the external factors that can produce changes in behaviour. However, it has some limitations such as –

1. It is difficult to have two groups of participants that are comparable.

2. Many times it is difficult to randomly group participants into the experimental and control group.

3. Thirdly the participants who attend the training may share information with those who do not attend the training and this too may affect the performance. This factor is difficult to control.

Thus, both methods have advantages as well as limitations. An I/O psychologist needs to evaluate the methods and make the choice of the right design that will be suitable for the training program to be evaluated.

### 8.4.3 Choosing measures of the Criteria:

After deciding the design for evaluation, the specific way in which the criterion will be measured has to be decided. To understand the reaction of the trainees towards the training, a questionnaire will have to be developed so that trainees can express the extent to which they have liked or not liked the training program. To measure the learning criterion, some tests or role-play may be designed which helps to know the extent to which the training has produced some form of learning.

To measure the behaviour criterion, some form of evaluation will have to be considered. For instance, if it is training on the use of a device, the supervisor of the trainee may be asked to rate the extent to which the trainee shows proficiency in using the device. Similarly, to measure the results criterion, the measure needs to be some index of the result of that training. For instance, if training on the use of a device was undertaken because there were a large number of accidents in that department, the results of the training may be measured in terms of the number of accidents after the training period. Thus this step involves some concrete way of identifying the value of the training through some quantifiable unit.

### 8.4.4 Collection of Data:

Once the criteria and the measures of the criteria are decided, it is necessary to collect the data. Data is collected from the trainees who attended the training program. In the repeated measures design, the data is collected from the same set of participants before and after training. For instance, before conducting the training program on the use of computers, the participants may be assessed on their knowledge of computer (Learning criteria), Supervisor's evaluation on trainee's knowledge of computer (results criteria), Performance of the organization (Performance criteria). After the training program on the use of computers, the same participants will be reassessed on the same parameters, along with the questionnaire on their evaluation of the training program (Reaction criteria).

In the random group design, since there are two groups of participants, the data will be collected only after the training program from both the groups – those who undergo training and a control group who do not undergo training. The questionnaire to measure reactions is given only to the training group, since those who do not go through the training group may not be able to express their reactions to the training program. The data that is collected is then arranged in a tabulated manner so that it can help in carrying out the next step.

### 8.4.5 Analyse and Interpret Data:

The data that is collected about the reactions, learning, results and performance for the two groups or for pre and post condition are then subjected to inferential statistical methods. Inferential statistics helps us to know whether the difference in the two groups (in random groups design) and in the two conditions (Pre-test-Post-test condition) are due to chance factors or is there a significant difference. If there is a statistically significant difference, it may be concluded that the difference in the performance or result is more than what can be expected out of chance factors.

From this analysis, the I/O psychologist can conclude about the effectiveness of the training program. If there is a statistically significant difference in any criteria it means that the training has been able to significantly produce a difference in that criteria. For instance, if there is a statistically significant reduction in the number of accidents before and after the training program, it may be concluded that the training program was effective in significantly reducing the accidents.

It is important to know that it is not necessary that the training program will show the same amount of effectiveness for all the criteria. Depending upon the effectiveness, the conclusion about the effectiveness of the entire training program is decided.

If the training program is effective at the training level criterion but not for the performance level criterion, then it means that there is something lacking in the training program. It shows that the training program lacks the necessary training to facilitate the transfer of training and hence although in the training program a person is able to perform well, it is not reflected in the job situation. This calls for the required modification so that transfer of training is facilitated.

Thus evaluation of all criteria is important and if the training program is effective at the training level as well as performance level, it may be considered as an effective training program and suitable to be continued. However, if it is effective at only one level but not at the other level, it is necessary to make necessary changes, before it is continued. On the other hand, if a training program is found to be ineffective at both levels, in that case, it is better to discontinue such training programs.

In this way, a training program should be evaluated thoroughly before continuing with a program. Such an evaluation helps in understanding the real value of the training program. It also helps us to know what are the strengths and the weaknesses of the training program. Thorough evaluation in the above manner helps to know what is lacking in the training program and suggests ways in which modification is required. This kind of evaluation can help an organization to identify the training programs in the organization that does not produce anything worthwhile, which may then be discontinued. It thus helps in preventing wastage of the resources on training programs that are of no use to the organization.

## 8.5 SUMMARY

In this module we continued to discuss the third step of training which involves planning of a training program. In this module we saw the different methods that are generally used in training programs. Each of the methods has their own strengths as well as limitations. A trainer may combine two or more methods in order to effectively train the trainees for the knowledge or the skill that is required. After the planning stage, the training has to be actually delivered by the trainer, which is the fourth step of the training. The last step of training consists of evaluating the training program. This is done by first setting the criteria for evaluation and then choosing the appropriate design for evaluation. The measures of the criteria are chosen and then the data is collected. Followed by this the collected data is analysed and interpreted. Based on the evaluation the training program may be continued if it is found effective at both the levels- training and performance level. If it is effective only at one level and not the other, then it is modified and in case it is ineffective at both the levels, then it may be necessary to be discarded.

## 8.6 QUESTIONS

**1.** Evaluate the following methods of training:
   a. Audio-visual instructions
   b. Auto instructions
   c. Conference
   d. Lecture

2. Describe the following methods of training:
   a. Modeling
   b. On-the-Job Training
   c. Role Playing
   d. Simulations

3. Discuss the importance of Electronic Training, Mentoring and Executive Coaching.

4. Describe the steps involved in the Evaluation of a Training program.

## 8.7 REFERENCES


- Spector, P.E. (2012). Industrial and Organizational Psychology: Research and Practice. Singapore: Wiley. (Indian reprint 2016)
- Aamodt, M.G. (2013). Industrial Psychology (7th ed.) Boston, MA: Cengage Learning
- Shultz D. & Schultz S.E. (2010). Psychology and Work Today, Pearson Education, Inc.


*****