

## SCIENTIFIC MANAGEMENT THEORY BY TAYLOR

Frederick Winslow Taylor was born on March 20, 1856, in Germantown, Philadelphia, Pennsylvania, USA. He was a mechanical engineer. He is a Father of Scientific Management. According to Frederick W. Taylor “*Scientific Management is an art of knowing exactly what you want your men to do and seeing that they do it in the best and cheapest way.*”

The major objectives of Scientific Management Theory by Taylor are a maximum improvement of workers. This improvement shows on efficiency and effectiveness performance. Such development is the revolution in management procedure and employee's actual performance.

### PRINCIPLES OF SCIENTIFIC MANAGEMENT THEORY

Frederick Winslow Taylor mentioned core principles of management in his *Principles of Scientific Management* book. These principles refer to the scientific management theory by Taylor. Such as:

#### **1. Science, not Rule of Thumb:**

This principle involves use of scientific method in place of rule of thumb. Rule of thumb involves ‘tried and error methods’ or ‘hit and miss methods’ which is costly affair. Scientific method involves investigation of traditional work methods through work study and unifying the best practices and developing a standard method which would be followed throughout the organization.

#### **2. Harmony, not Discord:**

This principle involves maintaining harmony between management and workers in place of discord (conflict) between them. Both should realize that they require each other. Management should share the gains of the organization with workers and workers should work hard with loyalty and be willing to embrace change for the good of the organization.

#### **3. Cooperation, not Individualism:**

This principle involves cooperation between management and workers instead of individualism. It suggests that management should encourage constructive suggestions from the workers and reward the suggestions which result in substantial reduction in time or costs. This principle also suggests that management should take workers into confidence in making important decisions which affect workers and there should be almost equal division of work and responsibility between workers and management and both should work side by side.

#### **4. Development of Each and Every Person:**

This principle involves development of each and every person to his/her greatest efficiency and prosperity. There should be scientific selection of workers and work assigned to them should suit their physical, mental, and intellectual capabilities. Development of workers requires training at the workplace to keep them fully fit according to requirement of new methods of working which may be different from the non-scientific methods.

#### **5. Maximum Output, not Restricted Output:**

Under 'Scientific Management', the management and the workers are equally interested in attaining maximum output. For the management, maximum output will lead to increased profits and production costs. For the workers, it will mean an increased share in prosperity of the business by way of higher wages and bonus.

Consequently, both seek to do their utmost to achieve maximum output. Management will do this by way of provision of standard materials, standard tools and standardized working conditions, and the workers by performing their jobs efficiently.

### **TECHNIQUES OF SCIENTIFIC MANAGEMENT**

Along with the scientific management principles, Taylor also introduced some methods to improve the productivity of the workers and ensure smooth functioning of the organization. These methods were majorly developed for the manufacturing and production industry and were based on his analysis of such units. Let us now discuss each of these techniques in detail below:

#### **FUNCTIONAL FOREMANSHIP**

Taylor suggested that to improve efficiency and effectiveness of the operational activities the managers must possess specific skills like leadership, intelligence, tactical skills, knowledge, judgement, education, experience, honesty, good health and energy.

He realized that no single person could have all of these qualities. Therefore, he came up with the idea that the managerial activities should be divided into two parts, i.e., planning and production.

Also, there should be two individual in charges appointed under the factory manager for carrying out both of these activities holding the position of planning in charge and production in charge, respectively.

Moreover, there should be four different clerks under each of the in charge, i.e., the planning in charge and production in charge. They hold expertise in their respective areas and supervise the performance of each worker.

Let us now see the hierarchy under the functional foremanship as suggested by F.W. Taylor:

### **Factory Manager**

A factory manager is a person who holds the highest managerial position in the unit and is responsible for the proper functioning of the organization.

**Planning In charge:** A planning in charge is responsible for the formulation of policies, strategies and procedures of the operational activities. To simplify the work, following four clerks are appointed under the planning incharge:

1. **Instruction Card Clerk:** The instruction card clerk will determine and direct how the work has to be performed.
2. **Route Clerk:** A route clerk will decide what all is to be done and the steps which are to be taken to perform a particular task.
3. **Time and Cost Clerk:** The person who determines the time limit in which the work is to be completed and the cost involved in carrying out each task is known as a time and cost clerk.
4. **Disciplinarian:** A disciplinarian is a clerk who ensures discipline, following rules and regulations and code of conduct in the organization.

**Production Incharge:** A production incharge needs to take care of all the operational and production activities. The four clerks assigned under a production incharge are as follows:

1. **Speed Boss:** The speed boss is responsible for getting the work done on time.
2. **Gang Boss:** The person who looks after the availability of all the equipment, tools and accessories is a gang boss.
3. **Repairs Boss:** The repairs boss has to take care of the repairs, maintenance and overhauling of the tools and machinery used for production.
4. **Inspector:** The inspector is responsible for ensuring that all activities are being carried out in a planned manner. He/she also checks whether the quality of the products are as per the standards or not.

### **Workman**

A workman is a labour or the worker at the operational level of the organization which is responsible for actually performing the given task. Each worker is supervised and monitored by the eight different clerks, as mentioned above.

Therefore, we can also interpret that the functional foremanship is the only scientific management technique, which is 'contrary to the principle of unity of command'.

## STANDARDIZATION AND SIMPLIFICATION OF WORK

Standardisation implies to the method of establishing standards for every industry activity; it can be standardisation of manner, time, raw material, machinery, product, processes or operating situations. These examples are the benchmarks, which must be adhered to throughout the production.

Simplification points at erasing unnecessary types, sizes and dimensions while standardisation intends devising new types rather than the existing ones. Simplification points at eliminating a redundant variety of products. It results in savings of the cost of machines, tools and labour. It means controlled inventories, complete utilisation of supplies and boosting turnover.

## WORK-STUDY

Taylor emphasized on examining and analyzing the working at the operational level of the organization. It develops a systematic course of action and resolves the problems faced by the labours and workers who are responsible for accomplishing the given task and duties. Under the technique of work-study, there are following four significant concerns of the organization:

### ***Fatigue Study***

According to Taylor, the task can be accomplished effectively and efficiently only if the worker is allowed to take the required amount of rest during the working hours. Under the fatigue study, the organization needs to plan for the following:

- *The number of rest intervals:* The organization needs to decide the number of times, for which rest is allowed to the labours in a day.
- *Frequency of rest intervals:* The time interval after which the employee's rest time is scheduled is termed as the frequency of the rest intervals.
- *Duration of each rest interval:* The organization also determine the period of each rest interval. Such that the worker neither remains exhausted nor moves into a state of laziness.

### ***Method Study***

The managers come across numerous ways of performing a particular task or carrying out the production of goods or services.

Out of all these possible methods, selection of the most appropriate way, which is cost-effective and also increases the production is considered a method study.

### ***Time Study***

Analyzing the time consumed for carrying out the given task in a specified manner is Taylor's another scientific management technique which is called a time study.

If an activity takes more time than the defined standard, it may lead to delay and decline in productivity. And if a task is accomplished much before the given time, it may lack efficiency.

### ***Motion Study***

The examining of every movement of the workers during the working hours to find out the unproductive task and activities comes under motion study.

The actions and movements which do not generate any output should be eliminated to simplify the work.

### **DIFFERENTIAL PIECE WAGE SYSTEM**

The wages paid to the workers should be based on their production capability, i.e., the number of pieces labour can manufacture in a given period, instead of a fixed rate of remuneration.

A standard number of units of production should be determined, and the wages should be decided accordingly. If a worker is unable to produce the usual quantity, then some amount will be deducted from the decided remuneration. However, if a worker produces more than the standard number of units, he or she will be liable for additional compensation. In simple terms, Taylor suggested the ideas of performance-based remuneration and incentive-based motivation.

### **MENTAL REVOLUTION**

Taylor gave a powerful concept on changing the perception of both the employees and the management. Here, both of them work in collaboration and consider themselves as members of a family.

He said, to achieve the organizational goals efficiently, there must be proper coordination and understanding among the workers and the management. A friendly and cordial work environment leads to the growth of the organization as well as the individuals.

The employees should not consider themselves as just the workers of the organization, but believe themselves to be the members of a family. Even the management must understand that the workers are also human beings and an essential part of the organization. Both of them must value the efforts of each other and work together, creating a positive environment to achieve common organizational goals and objectives.

## **CRITICISM OF SCIENTIFIC MANAGEMENT THEORY**

Although it appreciates in the organizational process, yet it has not spared of severe criticism. The criticism of scientific management theory by Taylor is divided into two categories. Such as:

### **Workers' Viewpoint**

- For increasing productivity, replace the machine instead of the man. Therefore, it may be an unemployment tool.
- Exploitation thinking arises in workers. So, they are not engaged in creative working.
- These principles enforce on over speeding in the work. So, These have an adverse effect on the health of employees.
- Due to extreme specialization, the employees are not capable to take a drive on their own. Their position decrease mere cogs in the wheel. As a result, job become dull. Employees disappoint in working.
- Workers feel that these principles make to weak of Trade Union. So, workers don't attract these principles.

### **Employers' Viewpoint**

- It is an expensive system.
- Here enforces on the work, study, standardization, and specialization. As a result, it is a time-consuming process.
- This procedure is one kind of deterioration of quality.

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