

Taylor's

Principles Of Scientific Management

- Science, not the rule of thumb;
- Harmony not discord;
- Cooperation not individualism;
- Maximum not restricted output;
- Development of each person to her/his greatest efficiency and prosperity.

Techniques Of Scientific Management

- Functional foremanship
- Standardisation and simplification of work
- Fatigue Study
- Method Study
- Time Study
- Motion Study
- Differential Wage System.



Taylor's Scientific Management

F.W. Taylor (1856 – 1915) – father of Scientific Management – American Mechanical Engineer in Midvale Steel Company – keen analyst and critical of management for poor performance of their organization – conducted a series of experiments for more than two decades and finally launched the movement in 1910 which is known as “**Scientific Management**”.

WRITINGS: ‘The Principles of Scientific Management’ series of articles published in ‘The American Magazine’ during march-May 1911, later published in book form.

Meaning And Definition

Meaning

Scientific Management refers to the application of science in management practices. He advocated a detailed scientific study of each job to determine the best way of doing it.

Definition

“Scientific Management means knowing exactly what you want men to do and seeing that they do it in the best and cheapest way”

- F.W. Taylor



Aims And Objectives

1. **Increasing production** – by the use of standardized tools, methods and devices.
2. **Improved quality** – by using quality control and research.
3. **Reducing cost** – by using scientific techniques of production.
4. **Selection of right person for right work** – by scientific selection and training to workers.
5. **Reduction of wastages** – by proper handling of resources.
6. **Provision of incentive wages** – by applying differential piece wage system.

Principles of Scientific Management

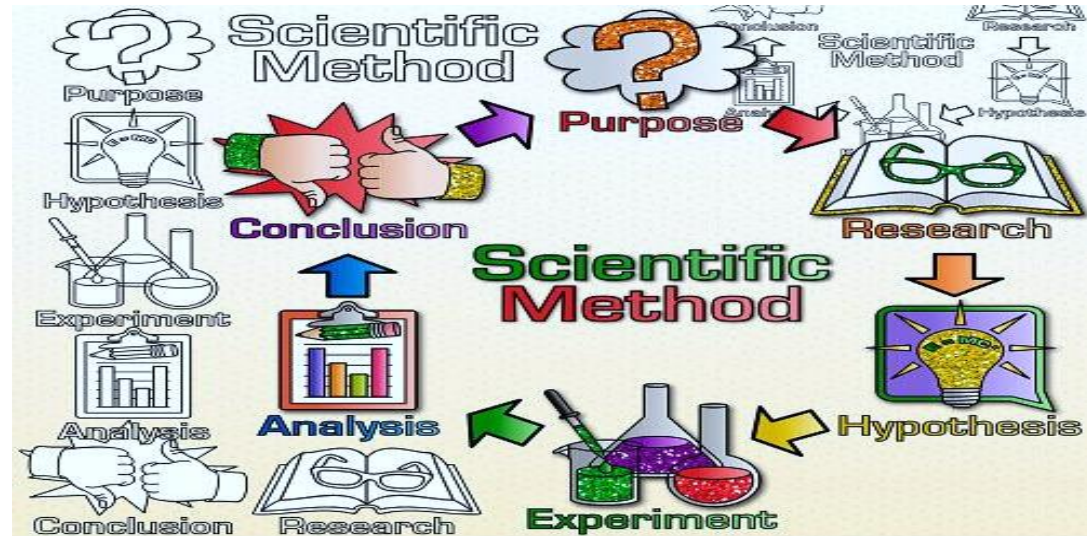


Taylor proposed conducting business activities according to standardised tools, methods and trained personnel in order to increase the output, improve its quality and reduce costs and wastes.

In the words of Taylor, **“Scientific management means knowing exactly what you want men to do and seeing that they do it in the best and cheapest way”**

Science, Not Rule Of Thumb

- ❖ Rule of thumb means application of traditional methods or the methods decided by the managers based on their past experience.
- ❖ All these methods are often untested and unscientific; they do not guarantee success.
- ❖ In other words, the rule of thumb can be seen as 'the dictatorship of the manager' which should be avoided.
- ❖ Taylor suggested 'thinking before doing', i.e. "Trial and Error Method" should be avoided and a scientific study must be done before solving any problem or doing a work.



Harmony, not discord



- ✓ This principle states that there should be complete harmony between management and the workers.
- ✓ This can be achieved through a change in the attitude of workers and the management. Taylor calls it as “Mental Revolution”.
- ✓ Management should share the gains with workers and the workers should work hard and accept changes for achievement of goals.





Cooperation

Not

Individualism



- ❑ This principle is an extension of “Harmony, not discord”.
- ❑ This principle states that there should be complete cooperation between management and workers instead of individualism.
- ❑ Management should take workers into confidence and give them participation in decision making.
- ❑ Workers should not indulge in unnecessary strikes and raise unreasonable demands.
- ❑ Taylor suggested that there should be equal division of work and responsibility between the workers and the management.

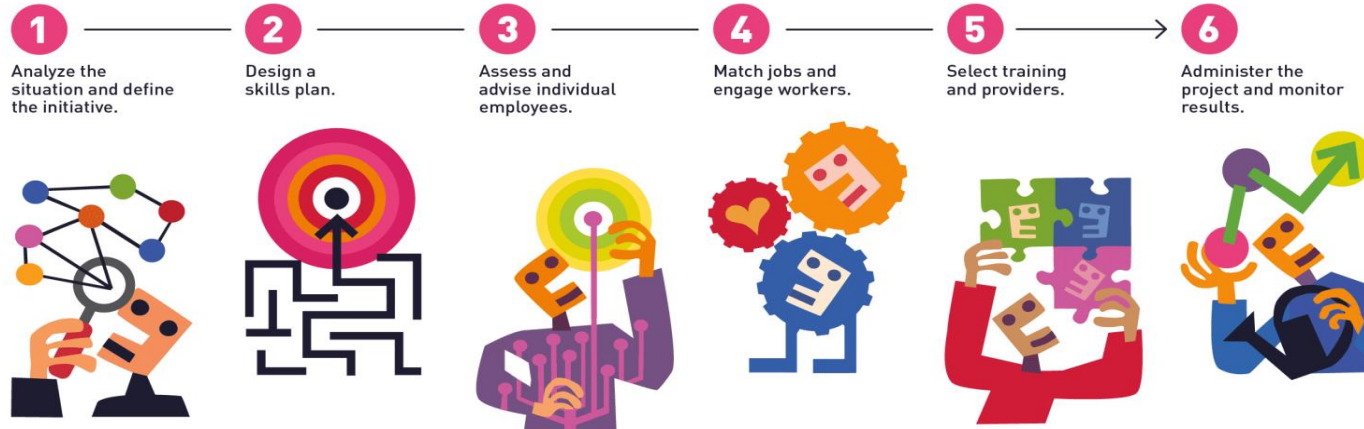




Development Of Each And Every Person To Their Greatest Efficiency And Prosperity

- ❖ This principle states that the efficiency of all workers is a must for which they have to be provided with maximum prosperity.
- ❖ For this, Taylor advocated scientific methods for selection, training and development of workers.
- ❖ If workers put in their best efforts, it ensures maximum prosperity not only to workers but also to the organization.

6 steps to upskilling your people



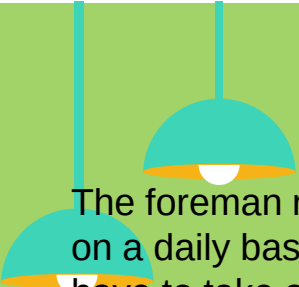
Techniques of Scientific Management

1. Functional foremanship
2. Standardisation and simplification of work
3. Fatigue Study
4. Method Study
5. Time Study
6. Motion Study
7. Differential Wage System.



01

Functional Foremanship



The foreman represents the managerial figure with whom the workers are in face-to-face contact on a daily basis. Taylor suggested functional foremanship through eight persons. Each worker will have to take orders from these eight foremen

Under the factory manager there was a planning in charge and a production in charge.

Under **planning in charge** worked

Instruction card clerk	(instructions for the workers),
Route clerk	(specify the route of production),
Time and cost clerk	(prepare time and cost sheet)
Disciplinarian	(ensure discipline)

Under **production in charge**, worked

Speed boss	(for timely and accurate completion of job),
Gang boss	(keeping machines and tools etc., Ready for operation),
Repair boss	(ensure proper working condition of machines and tools)
Inspector	(check the quality of work).



FUNCTIONAL FOREMANSHIP

Factory Manager

Planning Incharge

Production Incharge

Instruction
Card Clerk

Route Clerk

Time and
Cost Clerk

Disciplinarian

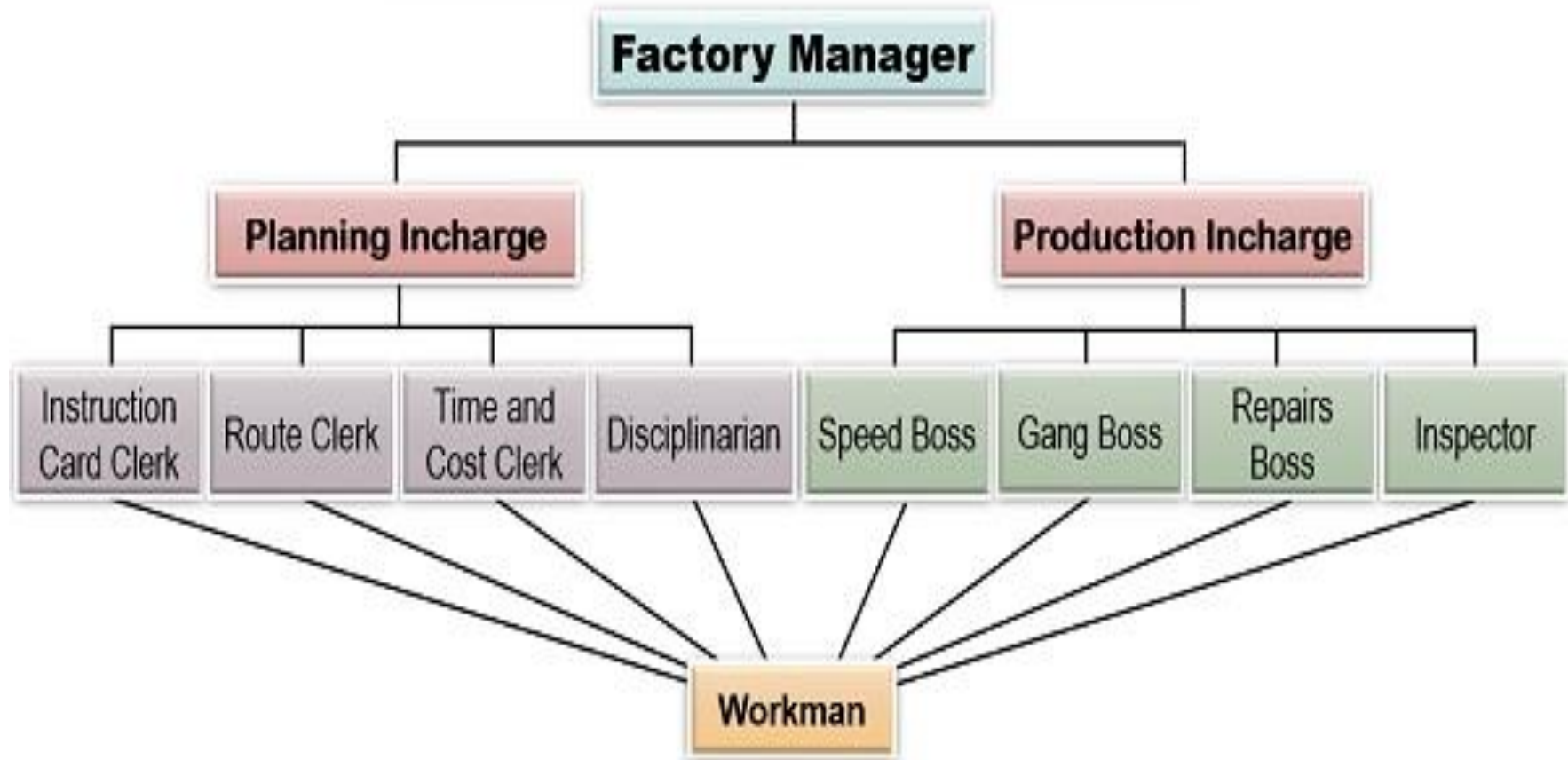
Speed Boss

Gang Boss

Repairs
Boss

Inspector

Workman



Standardisation

Refers to the process of setting standards for every business activity; it can be standardisation of process, raw material, time, product, machinery, methods or working conditions to be adhered to during production, it can be done through work-study techniques which include time study, motion study, fatigue study and method study,.

The objectives of standardisation are:

1. To reduce a given line or product to fixed types, sizes and characteristics.
2. To establish interchange ability of manufactured parts and products.
3. To establish standards of excellence and quality in materials.
4. To establish standards of performance of men and machines.

Simplification

Aims at eliminating superfluous varieties, sizes and dimensions i.e. Unnecessary diversity ,it results in savings of cost of labour, machines and tools. It implies reduced inventories, fuller utilisation of equipment and increasing turnover.



03

Method Study

- The objective of method study is to find out one best way out of the various methods of doing the job.
- The objective of the whole exercise is to minimise the cost of production and maximise the quality and satisfaction of the customer.
- For this purpose many techniques like process charts and operations research etc. are used.



04

Motion Study

- ❖ Motion study refers to the study of movements
 1. Motions which are productive
 2. Motions which are incidental
 3. Motions which are unproductive.
- ❖ Unnecessary movements are sought to be eliminated so that it takes less time to complete the job efficiently. It determines the standard time taken to perform a well-defined job by taking several readings.



Time and Motion Study Equipment



A stop-watch



A study board



Time study forms

Other Equipments:

- Audio and Video Tape recorder
- Stationary
- Equipments related with particular field.

- ✓ Fatigue study seeks to determine the amount and frequency of rest intervals to be taken during completing a task
- ✓ There can be many causes for fatigue like long working hours, doing unsuitable work, etc. Such hindrances in good performance should be removed.



06

Differential piece wage system

- ❖ It refers to a wage system in which dual wage rates are fixed to differentiate between efficient and inefficient workers.
- ❖ E.g., Standard output per day 30 units, two wage rates are Rs.10 and Rs.8 per unit. Worker Amit produces 30 units a day and gets Rs.300.
- ❖ Worker Mohan produces only 28 units and he earns Rs. 224 only.
- ❖ Here Mr. Mohan loses Rs.76 just for a shortfall of 2 units.
- ❖ Taylor recommended that this system will be enough to motivate the inefficient worker to perform well or otherwise he will leave the organization



- Through time study, the minimum time required for each element of work is determined. It helps in fixing a standard time for the job which will save cost, time and effort.

Time and Motion Study Equipment



A stop-watch



A study board



Time study forms

Other Equipments:

- Audio and Video Tape recorder
- Stationary
- Equipments related with particular field.

A scenic photograph of a golf course with a large pond. Three cyclists are riding on a narrow grassy path that crosses the pond. The background is filled with lush green trees and a clear sky. The text 'Thank you' is overlaid in the center.

Thank you

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