

## SCIENTIFIC MANAGEMENT THEORY (F.W. Taylor)

The Scientific management theory/approach is one of the most important theories of traditional public administration formulated by Frederick Winslow Taylor who was an engineer by profession and always viewed each and every thing and its aspects scientifically and since he was into the production field, he was to be concerned with increasing efficiency of workers to increase production within the least possible time with the least possible resources. Thus, ruling out wastage to the maximum and increase profits to the hilt.

Taylor is regarded as the father of the Scientific management approach. The Scientific management approach in its literal sense means a scientific way of managing an organization. His theory helped pave the way for many modern management approaches and techniques, some opposed him whereas some supported him but there is no denying that his theory was the one that started their very existence.

He was employed at a time when the Industrial revolution was at its peak and matured (the 19th century) and industries were trying to find a solution to the complex problems of organizations due to the same. The Industrial revolution no doubt brought along with it enormous capital but also there was an ever increasing demand of goods and production had to be speeded up to meet the demands around the world. Taylor advocated the scientific approach towards industrial work, processes as well as management to increase industrial efficiency and economy as well as profit. to solve all those problems since the traditional conditions and work methods as well as tools and non standardized procedures in existing factories were pitiful. Workers used their own methods of working and thus there was inconsistent performances.

All this led Taylor who worked his way from bottom to the top management and knew the nitty gritty of the job to suggest scientific management as the best solution. Scientific Management as a term was coined by Louis D. Brandies in 1910 and subsequently used by Taylor in his book "Principles and Methods of Scientific management". Though Taylor had written his theory much before the essay by Woodrow Wilson, he got the fame after the publication of the essay and the mass interest that it generated on the lines of having a separate administration from politics and to develop it as a true science.

Taylor as an engineer and manager developed and invented many tools for cutting steel and shoveling and many more that lead to a great decrease on the workload of the worker as well as increased efficiency with minimum number of movements for a particular job thus leading to high profits.

The basic principles(rules) of Taylor's Scientific management were:

- 1) Standardisation of work methods:** A scientific method for each job/task of a worker via scientific observation and analysis of a particular job to find out the one best way to do that task that would lead to reduced work for the worker as he could do more with limited number of movements. Use of bench marked and standardized tools and equipments and methods would improve quality control and inspections thus reducing cost of production and increasing efficiency. Taylor emphasised on the 'right man for the right job' by proper selection and training and ensuring fair wages and reasonable prices for standardised goods to consumers.
- 2) Equal division of work and responsibility between management and workers:** At that time workers had all the load of work and they were left to fend for themselves to complete the work. Thus Taylor advocated that the management had to seriously undertake functions for which it was best suited to i.e. planning, organising, controlling and determining methods of work instead of leaving all this to the mostly uneducated worker who knew nothing of this and was only concerned with doing his job through the skills he had. This principle according to Taylor



74  
3

would help create a mutual understanding and dependence between the latter and the former in the long run that would eliminate all unnecessary conflict and mistrust that was existing between the two at that time. He believed that this mutual harmony instead of discord is the just and rightful characteristic of scientific management.

**3) Scientific selection of workers and their progressive development:** He advocated through this principle the need for the management to study the nature and character of each job/work and then scientifically choose the right worker for the same who possess the necessary skills for the same. It is also the duty of the management to study the limitations and possibilities of workers for their development as Taylor believed that every worker had a definite potential for development. he advocated for a systematic and thorough training of workers for the job after being selected. It is also important that the worker accepts the new methods, tools and conditions in their own interest and does it sincerely.

**4) Mutual collaboration of workers and management:** According to this principle there should be active cooperation and cordial relations between management and workers instead of discord and distrust in order to increase the production and efficiency of the company/organization. A healthy environment needs to be created. A formally prescribed scientific method of production in organizations will lead to a lot of conflicts that occur due to lack of clear communication and confusion from top to bottom between the latter and former disappearing.

**Apart from these four basic principles Taylor also expressed concern about the following in the process of Scientific management:**

**a) Mental Revolution:** He advocated a change in the attitudes of workers and management towards each other and their responsibilities. Managers should stop worrying about accumulating the most and instead focus on generating the most that will lead to more funds for them. The workers should stop worrying about increasing wages without putting in extra effort and instead increase their responsibility and efficiency and increase production that will definitely lead to raise in their salaries sooner or later.

**b) Division of work:** Planning function to be taken over by management who were appointed for the same as they have been trained and skilled for the same and workers to concentrate on completing their functional task as per the rules and guidelines and methods planned by the former. Thus, each doing the job for which they have been appointed and are best skilled for.

**c) Selection and training of workers:** Taylor advocated the selection and training of workers for best performance of the work in an organisation. Right person for the right job. This is the duty of the management to choose a candidate for a particular job on the basis of his nature, character and capacities and also provide for formal training and clear instructions to them to perform prescribed motions with the standardized tools and materials.

**d) Work study and work measurement:** Work should be studied systematically and scientifically and various laws and rules are to be applied to everyday work to find the one best way to do that job. Taylor studied each and every movement of the worker with a stop watch and removed all the unnecessary movements and found out the minimum time required for each job. This not only helped reduce time but also slow movement and fatigue of workers thus increasing efficiency and production leading to great profits for the organisation.

**e) Work as an individual activity:** Taylor never advocated group work/activity. He asserted that people were only motivated by personal ambition and tends to lose his individuality/individual drive in a group setting. He stated that workers should have no verbal interaction as it leads to undue personal pressures.



**f) Development of management thinking:** He viewed scientific management as a medium to develop management as a science. It means that specific laws and rules could be derived for management studies and practices and those laws relate specifically to wage rates and way of doing work to increase the rate of production. Taylor advocated the use of standardized tools and equipment as well as methods.

**g) Standardisation of tools:** Taylor himself developed and invented many standardized tools to increase production and efficiency and those after a successful stint became the benchmark to be used for those particular jobs. One of his most famous studies involved shovels. He noticed that workers used the same shovel for all materials. He determined that the most effective load was 21½ lb, and found or designed shovels that for each material would scoop up that amount. Taylor was able to convince workers who used shovels and whose compensation was tied to how much they produced to adopt his advice about the optimum way to shovel by breaking the movements down into their component elements and recommending better ways to perform these movements. This led to huge increase in efficiency and production.

**h) Task prescription:** It means that a worker should get a clear prescription and description of what task is to be done by them in clear language and instructions that is understandable by him/her by the management through proper planning.

**i) Trade unions:** Taylor was against trade unions or group activity as mentioned earlier as he believed that it was unnecessary since the goal of the workers and management was the same. As scientific management would make everything crystal clear for everybody in the organisation ridding it of any conflict and with fair wages there is no need for trade unions.

**j) Incentive scheme:** Taylor suggested a piece work rate incentive for workers. That means if a worker achieves a greater output than the target assigned to him he/she would then receive a bonus payment for each piece extra. And the bonus should be generous and consistent to encourage the workers to produce more.

#### **CRITICISM:**

- 1) Considered as pro capitalist, i.e. only favoring the rich and ruling class society and not the workers.
- 2) Trade unions criticised it as a theory to destroy collective bargaining with the ruling class by the workers for their benefits.
- 3) Very mechanical and thought of workers as nothing more than mere cogs in a wheel. Not humanistic as it only concerned itself with efficiency and production and managerial problems not the psychological and emotional problems of workers like the routine and monotony of their work and uncertainty of employment, etc. Humanistic approach scholars advocated that workers also needed justice and status as well as opportunities and not just a rise in wages.
- 4) managers also opposed Taylor as they felt he was putting unnecessary burden on them and equating them with workers through his principles of equal division of work and responsibility and training for managers.
- 5) His opposers stated that he made the workers nothing more than robots who were dependent only on orders of management and were not to use their own heads from the experience and skills they had and doing the job physically he knew much more than management.
- 6) They opposed his idea of functional foremanship by saying that the worker would fail as he would not be able to please so many supervisors everytime.
- 7) Psychologists stated that simply following rules makes workers depersonalised and they would develop a dislike to their work and this would lead to robotising of workers with no ideas of their own.

## Scientific Management -

Principles of

### **RELEVANCE OF SCIENTIFIC MANAGEMENT AND CONCLUSION:**

Even though it drew a lot of criticism, the significance of this theory can never be underestimated as it is the one that gave rise to the growth of management science and the theories that followed. Taylor was not totally against human relations as one can see he mentioned in one of his basic principles that there should be a 'mutual collaboration of workers and management' (read it in detail above) and many more. It helped managements in many organisations overcome worker issues in the US successfully and for the long term. That is why his ideas spread to all parts of the world and also to socialist countries like Russia. And it is also being followed in India even now. This shows its importance and relevance to organisations irrespective of the nature of economy.

Taylor's theory brought a practical solution to the enormous problems of complex and growing organisations in the Industrial revolution peak and also led to alleviate many problems of workers as well as management and also the issues between the both.