

Chapter Outcomes

After completing the chapter, you will be able to:

- Understand the role and significance of work study in the organisation.
- Describe the relationship between work study and productivity.
- Learn the work study procedure.
- Define the method study and time study.
- Understand the role of management, worker and supervisor in work study and traits and skills of work study man.
- Understand reasons for unnecessary work content.
- Justify work study as a tool to improve productivity.

3.1 INTRODUCTION ★

Work-study forms the basis for work system design. The purpose of work design is to identify the most effective means of achieving necessary functions. Historically, this work-study aims at improving the existing and proposed ways of doing work and establishing standard times for work performance.

"Work-study is a generic term for those techniques, method study and work measurement which are used in the examination of human work in all its contexts. And which lead systematically to the investigation of all the factors which affect the efficiency and economy of the situation being reviewed, in order to effect improvement."

Work-study is not new. Since the beginning of human civilisation, there has been a tendency to bring about improvements in the activities the people performed. But this has been organised into a technique and got recognition in the later stages.

Work-study is encompassed by two techniques, i.e., method study and time measurement as shown in Fig. 3.1. "Method study is the systematic recording and critical examination of existing and proposed ways of doing work, as a means of developing and applying easier and more effective methods and reducing costs."

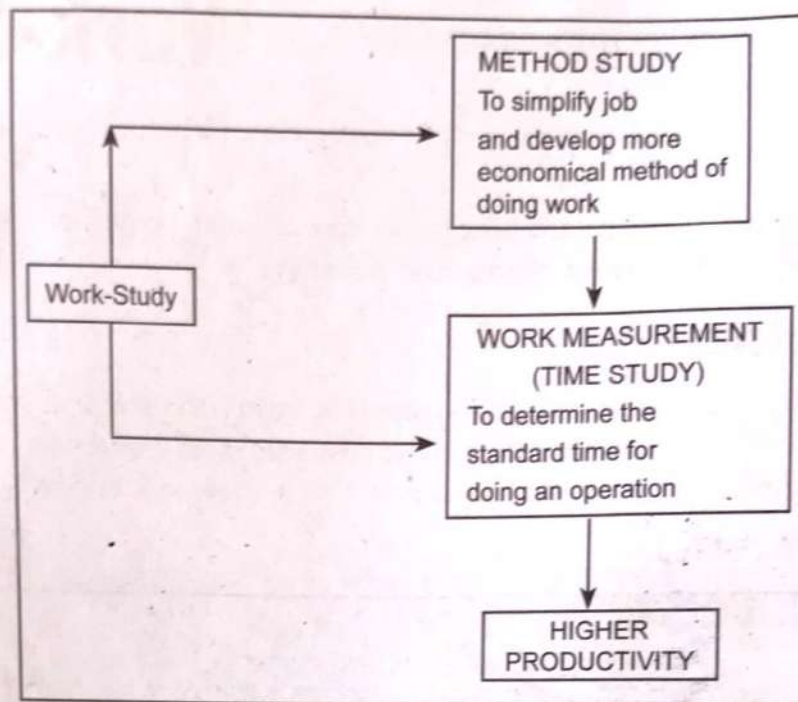


Fig. 3.1: Components of work-study.

"Work measurement is the application of techniques designed to establish the time for a qualified worker to carry out a specified job at a defined level of performance."

There is a close link between method study and work measurement. Method study is concerned with the reduction of the work content and establishing the one best way of doing the job where as work measurement is concerned with investigation and reduction of any ineffective time associated with the job and establishing time standards for an operation carried out as per the standard method.

3.2 IMPORTANCE OF WORK-STUDY ★

1. Work-study is a means of enhancing the production efficiency (productivity) of the firm by elimination of waste and unnecessary operations.
2. It is a technique to identify non-value adding operations by investigation of all the factors affecting the job.
3. It is the only accurate and systematic procedure oriented technique to establish time standards.
4. It is going to contribute to the profit as the savings will start immediately and continue throughout the life of the product.
5. It has got universal application.

3.3 ADVANTAGES OF WORK-STUDY ★

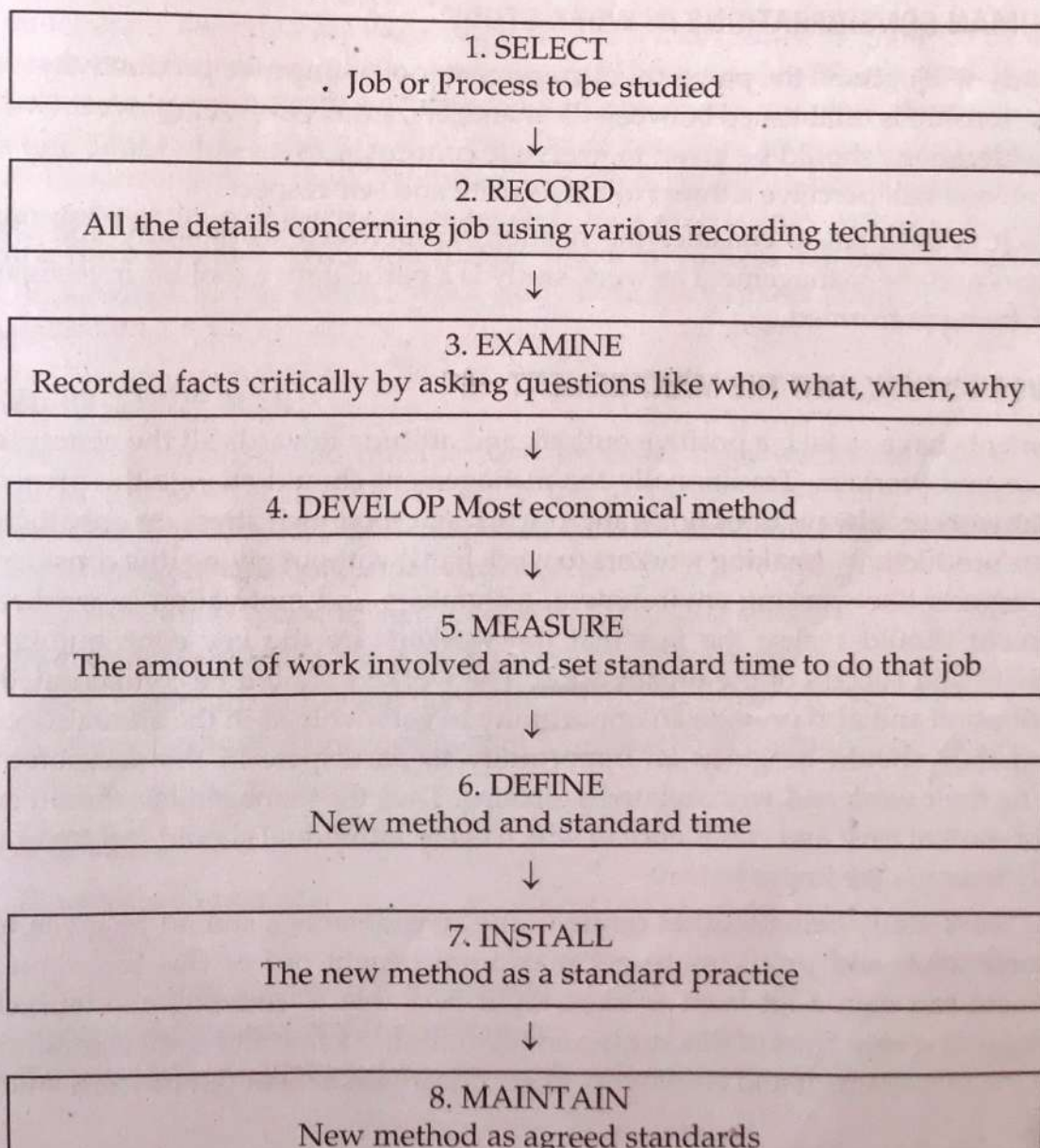
1. It helps to achieve the smooth production flow with minimum interruptions.
2. It helps to reduce the cost of the product by eliminating waste and unnecessary operations.

3. Better worker-management relations.
4. Meets the delivery commitment.
5. Reduction in rejections and scrap and higher utilisation of resources of the organisation.
6. Helps to achieve better working conditions.
7. Better workplace layout.
8. Improves upon the existing process or methods and helps in standardisation and simplification.
9. Helps to establish the standard time for an operation or job which has got application in manpower planning and production planning.

3.4 WORK-STUDY PROCEDURE

Work-study is a procedure oriented and systematic study to establish the one best way (standard) method of doing an operation by investigation and analysis of all the details regarding the job or operation carried out as per the established standard method.

Steps Involved in Work-Study



supervise the work being performed.

3.7 WORK-STUDY AND THE MANAGEMENT ★

Managements have to take a positive outlook and attitude towards all the concerned, the supervisor and workers. Traditionally the management should change the preoccupied belief that workers always does not want to work and too much stress on only increasing the labour productivity (making workers to work hard) without giving due considerations to other aspects like working environment, technology and motivation to workers. The management should realise the fact that the workers are the key contributors to the productivity and success of the organisation. The workers should be compensated fairly for contribution and also provide an opportunity to get involved in the affairs concerning them and they should be given an opportunity to participate in the decision-making concerning their work and work related problems. Thus the management should create a climate of mutual trust and confidence in which every individual should feel to contribute positively towards the improvement.

Thus work-study being worker centred, due considerations should be given to their needs, motivation and problems to get maximum benefit out of this technique. Thus management can gain a lot from work-study if it is able to convince the workers and unions regarding objectives of this study and there should a free and open communication between the management and employees to get maximum benefit out of work-study.

3.11 INFLUENCE OF METHOD AND TIME STUDY ON PRODUCTION ACTIVITIES

The basic objective of production management is to manufacture the right quantity and quality of goods at the predetermined time and pre-established cost. Work-study is tool to achieve this objective. During the product design and process design, the methods of manufacture are fixed and process planning is done using the standard times and standard method. Methods analysis guide with respect to how the work is to be best accomplished and time standards indicate how long will it take to complete the job. The influence of method and time study on production activities show in Fig. 3.2.

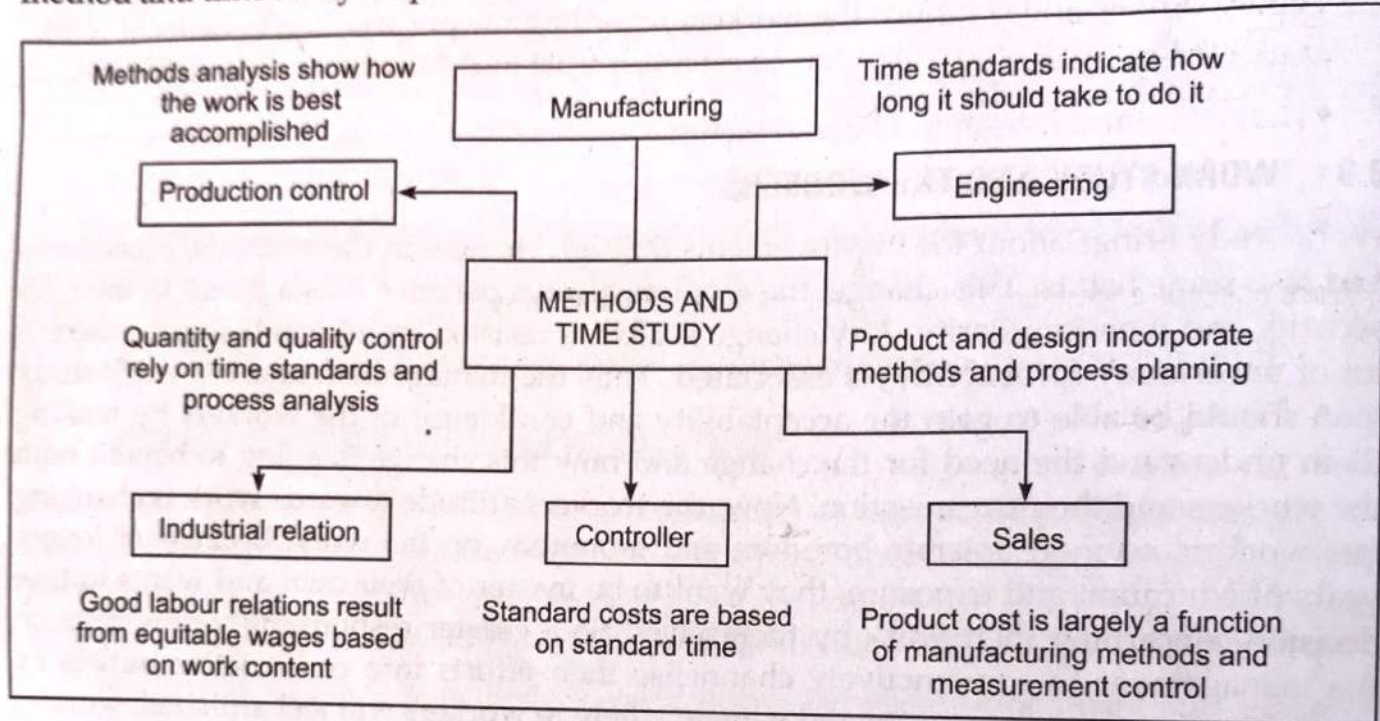


Fig. 3.2: Influence of method and time study on production activities.

Process analysis and standard times, helps to have a control on quality and quantity manufactured. Based upon the standard times, standard cost are determined and this helps the analysis of variance between actual and standard costs. Product cost which is a function of method and standard time and cost control is very much essential to be in competition. Standard time form the basis for compensation. This helps to link wages and the work content. Thus work-study applied in right spirit helps to accomplish the production objectives.

3.12 CONCEPT OF WORK CONTENT

The amount of work contained in a given job is referred to as work content. For a given job work content is measured in terms of man-hours or machine-hours.

Work content has two constituents:

1. **Basic Work Content:** Which is the minimum time theoretically required to do an operation or job. This cannot be reduced. Basic work content will result in the following conditions:

- The design and the specification are perfect.
- Process of manufacture is exactly followed.
- No loss of working time due to any of the reasons.

Thus, the basic work content represents an ideal condition which is not possible to achieve.

3.14 TECHNIQUES TO REDUCE WORK CONTENT ★

1. Management techniques to reduce work content due to product

- (a) Product development.
- (b) Standardisation (variety reduction).
- (c) Value analysis.
- (d) Market research/consumer research.

2. Management techniques to reduce work content due to process or methods

- (a) Process planning.
- (b) Methods study.

3. Management techniques to reduce ineffective time due to management

- (a) Product standardisation and simplification.
- (b) Product specialisation.
- (c) Standardisation of component.
- (d) Production planning and control.
- (e) Materials control.
- (f) Plant maintenance.
- (g) Safety measures and improved working condition.

4. Management techniques to reduce ineffective time within control of the workers

- (a) Sound personnel policies.
- (b) Operators training.
- (c) Safety training.
- (d) Financial incentives.

3.15 WORK-STUDY AS A TOOL TO IMPROVE PRODUCTIVITY ★

The important functions of production management are setting up the most effective method of performing the operation (standard method) and control or effective utilisation of resources.

Work-study which comprises of method study and work measurement will fulfil these two requirements. Method study aims at determining the most effective method of performing the job, the most logical layout for manufacturing facilities, uninterrupted flow of materials throughout the organisation, will help to complete the job in the least possible time and at optimum cost. Work measurement on the other hand determine the time required by an operator to complete the operation or job for the standard method at the defined level of performance.

Work-study is the most effective tool to enhance productivity because of the fact that:

1. It is a straight-forward way of increasing the productive efficiency of the organisation.
2. Considers all the factors influencing productivity.

SUMMARY