

WORK SIMPLIFICATION

B. Sc. Home Science 2nd Semester

Subject: Introduction to Resource Management II

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MEANING OF WORK SIMPLIFICATION

Work simplification is the conscious seeking of the simplest, easiest and quickest method of doing work. It is the technique of completing a task by using the least amount of time and energy.

There are two ideas which can help the homemaker to save both her energy and time:

1. Work Simplification:

- It means adoption of simplest, easiest and quickest method of doing the work with less consumption of time and energy.

2. Motion mindedness:

- It means awareness of the movements involved in doing a particular task and possible ways of reducing the motions.

MOTION MINDEDNESS

Motion economy is made possible by:

1. Using both hands unitedly.
2. Planning work space and arrangement to avoid irregular walking.
3. Using rhythmic motions for repetitive jobs.
4. Using smaller and smoother motions of hand to reduce strain and fatigue.
5. Working with gravity rather than against.
6. Using proper posture to reduce strain.

TECHNIQUES OF WORK SIMPLIFICATION

Motion- mindedness is an awareness of the motion involved in the possible ways of reducing them

Some of the techniques used for motion and time studies are






- PATHWAY CHART
- PROCESS CHART
- OPERATION
- MICRO-MOTION FILM ANALYSIS

PATHWAY CHART

- The pathway chart is a simple device for making a motion and time study in the home. A floor plan drawn to scale and fastened to a drawing board or wallboard, pins and thread are all that are needed to make such a study.
- Thumb tacks or Pins are put in on the floor plan where the worker turns and her pathway is measured from thread wound around the pins as she worker.
- Two chart are used –one for the original and the other for the revised pathway. If measured length of string are used, the task of figuring distances traversed is much simplified. Because of tangling when removing any amount of string left over can be more easily measured than the total amount used.

PROCESS CHART

The process chart is a step –by-step description of a worker performing a given task in its entirety. It is an over-all investigation and differs from an ordinary description of a worker's activities only in that a few symbols are used to clarify the steps immediately into types. Gross,Crandall and Knoll have adapted some of these symbols from industry in the preparation of a process chart.

<i>Symbols</i>	<i>Name of symbol</i>
	Movement from place to place (<i>the worker is going somewhere</i>)
	Operation (<i>she is standing still but working with her hands</i>)
	Inspection for quality & quantity (<i>she is checking what she has done</i>)
	Delay (<i>nothing is happening</i>)
	Movement & operation done simultaneously (<i>she is accomplishing something with her hands while walking</i>)

OPERATION CHART

- Operation chart is similar to a process chart, except that it picks up one particular step in a whole process and breaks it down into the each hand, shown in parallel columns.
- The operation chart is used in making a more detailed study of some particular part of the process. In this chart the moment are broken down into the activities of both the right or left hand the finger analysis show where necessary motions are being made and where delays occur in work
- The same symbols may be used, with the understanding that this time the small circle means a movement of the arm, the large circle a movement of the finger, with the arm more or less stationary. The triangle indicates complete idleness of both arm and fingers. The symbols used are.



Movement of the arm



Inspection



Movement of the fingers



Delay

WAYS OF SAVING TIME AND ENERGY

Time and energy can be saved by:

1. Using labour and time saving devices like pressure cooker, washing machine, mixer, grinder. Gas stoves and some other electrical machineries.
 2. Planning a better sequence of all activities help to save time and energy.
 3. Working conditions must be improved by proper work surface in terms of height depth and width.
 4. Collect everything you need before starting the work.
 5. Store frequently used and needed items within easy reach.
 6. Place items at their point of use.
 7. Maintain good posture for different activities.
 8. Look out for better ways of doing a task.
 9. Instant foods or semi prepared food stuff readily available in the market can be substituted to save time and energy.
 10. Ground spices, frozen food or readymade garment may be bought to help economize on time and energy.
- Generally, proper planning is essential for saving both time and energy.

PRINCIPLES OF WORK SIMPLIFICATION

1. **Elimination:** elimination of unnecessary work activities, equipments/instruments, movements or steps in procedures to achieve better output using less energy and time.
2. **Combination:** combining two steps in a process into single step to achieve the target faster involves using less energy, and thus the output is achieved in lesser time.
3. **Rearrangement:** through rearrangement of tools/equipments/materials/steps in process of carrying out an activity, better advantage of available space and time can be taken.
4. **Classes of change:** Gross and Crandall proposed 3 classes of change to improve one's method of work -
 - a) Changes in Hand and Body Motions
 - b) Changes in Work and Storage Space and Equipment
 - c) Changes in the product or raw materials

PRINCIPLES OF WORK SIMPLIFICATION (CONTD.)

5. **Simplifying or improving the sequence of work:** by improve the sequence of work, movement required for a particular task can also be reduced.
6. **Comfortable posture:** to carry out a task in an efficient manner for saving time and energy, comfortable body posture should be adopted. This will reduce the strain, backache, fatigue, tension and improve the efficiency of the worker and quality of work done.
7. **Changes in work surface:** Working conditions must be improved by proper work surface in terms of height depth and width.
8. **Skill development:** Skill in work can be developed by learning, observation, effort and experience. A skilled and experienced homemaker can do the tasks very easily with higher speed and smoothness.
9. **Change in attitude:** A genuine liking for the job and the determination to carry it through, will be great assets in work simplification.

LEVELS OF CHANGES TO IMPROVE ONE'S METHOD OF WORK: ACCORDING TO MUNDEL

According to Mundel there are five levels of changes that can improve one's method of work:

1. Changes in body position, number and type of motions.
2. Changes in tools, working arrangements and equipment.
3. Changes in production sequence.
4. Changes in finished product.
5. Changes in the raw material.

LEVELS OF CHANGES TO IMPROVE ONE'S METHOD OF WORK: ACCORDING TO GROSS AND CRANDALL

Gross and Crandall combined Mundel's five classes of changes into three classes which are easily accepted by all.

These are:

1. Changes in Hand and Body Motions

- (a) Eliminating unnecessary movements
- (b) Improving the sequence of work
- (c) Developing skill in work
- (d) Comfortable Posture

2. Changes in Work and Storage Space and Equipment

- (a) Changes in equipment
- (b) Changes in the work surface
- (c) Changes in the storage space

3. Changes in the product

By persuading the members of family to accept new ideas and change the old standard



1.CHANGES IN HAND AND BODY MOTIONS

(a) Eliminating unnecessary movements:

- By adopting certain methods, unnecessary movements can be eliminated for e.g. Dishes are to be rinsed in a drainer and allowed them to dry without wiping. While preparing vegetables, they are to be put into the cooking vessels and thus handling of extra vessels is cut down. The towels, sheets and other linen should be arranged in order to save time and energy. Proper planning can save a number of movements between storage area and work space.
- For e.g. when meals are being cooked the dining tables can be laid. Movements are also reduced when the floor is cleaned with a long handled mop, when clothes are placed at a convenient height at the time of drying. Keeping the house in smooth running order saves time and energy. Carrying several things at once to the kitchen or up and down stairs by the help of trays and baskets reduces unnecessary movements.

1.CHANGES IN HAND AND BODY MOTIONS(contd.)

(b) Improving the sequence of work:

- If the sequence of work will be improved, then movement required for a particular task can also be reduced. By following the pathway chart the sequence of works can be improved by reducing steps. Changes in the work methods can save unnecessary handling of equipment, e.g. when the dishes are stacked at the right of the sink washed, dried and stored at the left, minimum movements are required.
- Various works in the kitchen can be grouped together. When rice are boiled, vegetables can be cut up or salads can be prepared.
- Cooking and Table Laying can be combined together.
- Ironing and mending can be done while foods are cooking.
- In cleaning the house, it is easier to finish each process of sweeping, dusting and mopping the floor in all the rooms than to clean each room separately.

1.CHANGES IN HAND AND BODY MOTIONS(contd.)

(c) Developing skill in work:

- The development of skill in the performance of homemaking tasks eliminates a number of time and energy consuming motions in a day's work. A skilled and experienced homemaker can do the tasks very easily with higher speed and smoothness. If the job is done with smooth rhythm, the efficiency of the home maker improves.
- Each homemaker develops her own rhythm of doing work.
- Skill in work can be developed by learning, observation, effort and experience. For e.g. in learning to peel an apple, the home maker must first learn how to hold the apple and using the knife for peeling. This is a gradual improvement in developing the skill of doing the work through repetition.
- Making batter for pokoras, kneading dough and beating eggs are some examples of tasks involving rhythmic, uniform movements which can be learnt with experience.

1.CHANGES IN HAND AND BODY MOTIONS(contd.)

(d) Comfortable Posture:

- To avoid strain and to develop a good body position while working, some attention should be given to posture habits in standing, sitting; bending etc. working with good posture reduces the expenditure of energy.
- Poor posture can cause backache, increase fatigue, tension and a lower efficiency.
- Doing a task with efficient way means saving both time and energy e.g. in bending to do certain tasks, it is easier to put one foot slightly forward and bend through the knee and ankle joint.
- Carrying packages or other articles is easier when the load can rest against the hip.

2. CHANGES IN WORK AND STORAGE SPACE AND EQUIPMENT

(a) Changes in equipment:

- This includes rearranging or modifying kitchen equipment. For e.g. pressure cooker, mixer, grinder, well sharpened knives, peelers, rice cookers.
- Egg Beaters, non-stick pans, chapatti makers, dough mixers and other time and energy saving equipment help to ease the task of the homemaker. Now-a-days many modern, labour and time saving equipment's are available in the market which can be used easily.

2. CHANGES IN WORK AND STORAGE SPACE AND EQUIPMENT(contd.)

(b) Changes in the work surface:

- The height of kitchen work surfaces should be given careful attention. It must suit the worker. The platform on which the gas stove is placed should be in a suitable height. When the work surfaces in the kitchen are too low, one must stand in a comfortable position while working.
- If the surfaces are too high, the arms and shoulders must be raised to make the adjustment to the height. When the work surfaces are too wide, it means stretching the arms and bending the body which cause unnecessary strain and fatigue. Grinding stones placed on the floor means additional bending and stretching.
- According to Gilbreth, “The worker should stand erect with arms comfortably relaxed from the shoulders and with the elbows bent. She will find the most comfortable working level one, high enough to be used without stooping, but not high enough to cause her to raise the hands above the level of elbows.

2. CHANGES IN WORK AND STORAGE SPACE AND EQUIPMENT(contd.)

(c) Changes in the storage space:

- Storage areas in the kitchen and other places are often capable of being reorganized to help the homemaker to proceed better.
- Definite and convenient storage spaces enable the worker to do the kitchen work easily.
- Frequently used heavy utensils should be stored near the work surface level.
- All the tools, utensils, dishes and food supplies should be stored in such a way that they are readily accessible.
- Heavy articles should be placed at a lower height so that they are readily accessible.



3. CHANGES IN THE PRODUCT

Work simplification through changes in the product depends upon the :

- available resources and the family's standard of housekeeping
- preconceived standard for housekeeping

The homemaker should persuade the members to accept new ideas and change the old standard.

Some examples of these changes are as follows:

1. The use of paper napkins may help the busy urban working housewife who does not find time for laundering.
2. The purchase of prepared masala from a reliable source may save her from the older habit of picking, cleaning and grinding them at home daily.
3. Use of instant coffee will save her time and energy.
4. Clothes made of new fibers may be easier to maintain than traditional materials.
5. The use of plastics for some items may mean easily cleaned surfaces.
6. Laminated table tops are kept clean easily are heat resistant and easily maintained.
7. Instead of preparing an elaborate fruit salad as a dessert for a meal, whole fruits may be served.
8. A housewife, who is in the habit of ironing all the garments including the undergarments at home, can iron only the outer garments.

3. CHANGES IN THE PRODUCT (contd.)

A part from all these steps

- a genuine liking for the job
- developing competent skills for the job
- the determination to carry it through, will be great assets in work simplification
- planning work with adequate rest periods would ensure better quality of work and less fatigue.



Thank
you!!