What is Job Design? Defined

- **Job design** is the function of specifying the work activities of an individual or group in an organizational setting.
- The objective of job design is to develop jobs that meet the requirements of the organization and its technology and that satisfy the jobholder’s personal and individual requirements.

**OBJECTIVES**

- Job Design Defined
- Job Design Decisions
- Trends in Job Design
- Work Measurement
- Basic Compensation Systems
- Financial Incentive Plans

**Job Design Decisions**

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>Where</th>
<th>When</th>
<th>Why</th>
<th>How</th>
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</thead>
<tbody>
<tr>
<td>Mental and physical characteristics of the work force</td>
<td>Tasks to be performed</td>
<td>Geographic locale of the organization; location of work areas</td>
<td>Time of day; time of occurrence in the work flow</td>
<td>Organizational rationale for the job; objectives and motivation of the worker</td>
<td>Method of performance and motivation</td>
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Ultimate Job Structure
Trends in Job Design

- Quality control as part of the worker's job
- Cross-training workers to perform multi-skilled jobs
- Employee involvement and team approaches to designing and organizing work
- "Informating" ordinary workers through e-mail and the Internet

Trends in Job Design (Continued)

- Extensive use of temporary workers
- Automation of heavy manual work
- Creating alternative workplaces
- Organizational commitment to providing meaningful and rewarding jobs for all employees

Behavioral Considerations in Job Design

Balancing the specialization in a job and its content through enrichment can give us....

Degree of Specialization  Ultimate Job Structure  Job Enrichment (vs. Enlargement)

Sociotechnical Systems

Focuses on the interaction between technology and the work group by looking at....

Process Technology Needs  Task Variety  Skill Variety  Feedback  Task Identity  Task Autonomy  Worker/Group Needs
Physical Considerations in Job Design

- **Work physiology** sets work-rest cycles according to the energy expended in various parts of the job. The harder the work, the more the need for rest periods.

- **Ergonomics** is a term used to describe the study of the physical arrangement of the work space together with tools used to perform a task. Fit the work to the body rather than forcing the body to conform to the work.

Work Measurement **Defined**

- Work measurement is a process of analyzing jobs for the purpose of setting time standards
- Why use it?
  - Schedule work and allocate capacity
  - Motivate and measure work performance
  - Evaluate performance
  - Provide benchmarks

Work Methods

- A Production Process
- Ultimate Job Design
- Worker at a Fixed Workplace
- Workers Interacting with Other Workers
- Worker Interacting with Equipment

Time Study Normal Time Formulas

- **Normal time (NT)** = Observed performance time per unit x (Performance rating)*

*The Performance Rating is usually expressed in decimal form in these formulas. So a person working 10% faster than normal would have a Performance Rating of 1.10 or 110% of normal time. Working 10% slower, 0.90 or 90% of normal.

- **NT** = Time worked x (Performance rating) * Number of units produced
Time Study Standard Time Formulas

- Standard time = Normal time + (Allowances x Normal times)
- Standard time = NT(1 + Allowances)
- Standard time = \( \frac{NT}{1 - \text{Allowances}} \)

Time Study Example Problem

You want to determine the standard time for a job. The employee selected for the time study has produced 20 units of product in an 8 hour day. Your observations made the employee nervous and you estimate that the employee worked about 10 percent faster than what is a normal pace for the job. Allowances for the job represent 25 percent of the normal time.

Question: What are the normal and standard times for this job?

Time Study Example Solution

Normal time = \( \frac{\text{Time worked} \times (\text{Perf. rating})}{\text{Number of units produced}} \)
= \( \frac{480 \text{ minutes} / 20 \times (1.10)}{26.4 \text{ minutes}} \)

Standard time = \( \frac{NT}{1 - \text{Allowances}} \)
= \( \frac{26.4}{(1-0.25)} \)
= 35.2 minutes

Work Sampling

- Use inference to make statements about work activity based on a sample of the activity
- Ratio Delay
  - Activity time percentage for workers or equipment
- Performance Measurement
  - Relates work time to output (performance index)
- Time Standards
  - Standard task times
### Advantage of Work Sampling over Time Study

- Several work sampling studies may be conducted simultaneously by one observer
- The observer need not be a trained analyst unless the purpose of the study is to determine a time standard
- No timing devices are required
- Work of a long cycle time may be studied with fewer observer hours

### Advantage of Work Sampling over Time Study (Continued)

- The duration of the study is longer, which minimizes effects of short-period variations
- The study may be temporarily delayed at any time with little effect
- Because work sampling needs only instantaneous observations (made over a longer period), the operator has less chance to influence the findings by changing work method

### Basic Compensation Systems

- Hourly Pay
- Straight Salary
- Piece Rate
- Commissions

### Financial Incentive Plans

- Individual and Small-Group Plans
  - Output measures
  - Quality measures
  - Pay for knowledge
- Organization-wide Plans
  - Profit-sharing
  - Gain-sharing
    - Bonus based on controllable costs or units of output
    - Involve participative management
Scanlon Plan

Basic Elements

- **The ratio**
  - Standard for judging business performance

- **The bonus**
  - Depends on reduction in costs below the preset ratio

- **The production committee**
  - Formed to encourage employee suggestions to increase productivity, improve quality, reduce waste, and so forth.

- **The screening committee**
  - Consists of top management and worker representatives who review monthly bonuses, discuss production problems, and consider improvement suggestions.

Question Bowl

A job is said to be enlarged vertically if the employee is involved with which of the following?

a. The job's planning
b. The job's organizing
c. The job's inspecting
d. All of the above
e. None of the above

Answer: d. All of the above

Question Bowl

Research on Sociotechnical Systems have found that individuals or work groups require an integrated pattern of work activities that incorporates which of the following job design principles?

a. Decreased task variety
b. Decreased skill variety
c. Decreased task autonomy
d. All of the above
e. None of the above

Answer: e. None of the above (Increases in task variety, skill variety, and task autonomy have all been suggested in the research.)

Question Bowl

Which of the following activities requires the most typical energy cost in calories per minute?

a. Walking upstairs
b. Writing
c. Chopping wood
d. Typing on a computer
e. Digging

Answer: a. Walking upstairs (According to the Calorie Requirements for Various Activities exhibit walking upstairs requires the most calories at 12 per minute.)
Question Bowl

Which of the following is the Normal Time for a job whose observed performance time is 10 minutes and whose performance rating is only 90%?

a. 90 minutes  
b. 9 minutes  
c. 1.10 minutes  
d. 11.111 minutes  
e. None of the above

Answer: b. 9 minutes (10 x 0.90 = 9 minutes)

Question Bowl

Which of the following is the Normal Time for a job whose observed performance time is 35 minutes and whose performance rating is 30% above normal time?

a. 40 minutes  
b. 50 minutes  
c. 60 minutes  
d. 116.666 minutes  
e. None of the above

Answer: e. None of the above (NT = 35 x 1.3 = 45.5 minutes)

Question Bowl

Which of the following is the Standard Time for a job whose Normal Time is 20 minutes and whose Allowances are 5% of Normal Time?

a. 19.05 minutes  
b. 21 minutes  
c. 400 minutes  
d. 450 minutes  
e. None of the above

Answer: b. 21 minutes (ST = NT(1 + Allowances) = 20(1.05) = 21 minutes)