

# UNIT-3

**Work Environment**

**Engineering Psychology**

**Fatigue Boredom**

**Accidents and safety**

**Job Analysis**

**Recruitment and Selection – Reliability & Validity of  
recruitment tests**

# WORK ENVIRONMENT

- Work environment refers to the working condition of the employees in any organization. An uncomfortable and unpleasant working condition may be responsible for lowered productivity.
- Work environment covers two categories,
- **Physical environment-** with reference to illumination, noise and atmospheric conditions.
- **Work schedule-** such as hours of working, shift, rest pauses.

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- **Work schedule-** such as hours of working, shift, rest pauses.
- **Physical environment**
- **Illumination-** The most important physical aspect of the working environment concern the illumination of the working space. Brown & Ghiselli (1949) told that there are two important principals of effective illumination.

- **Intensity of illumination**
- **Uniformity of illumination**
- **Intensity of illumination- Brighter light therefore result in faster and more effective work. Blackwell has recommended certain levels of illumination for various tasks. Similarly increases intensity of illumination result in an increase in accuracy particularly with five works.**

# FATIGUE

- Extreme tiredness resulting from mental or physical exertion or illness.
- Weakness in metal or other materials caused by repeated variations of stress.
- **Fatigue**, also referred to as **tiredness**, **exhaustion**, **lethargy**, and **listlessness**, describes a physical and/or mental state of being tired and weak. Although physical and mental fatigue are different, the two often exist together - if a person is physically exhausted for long enough, they will also be mentally tired. When somebody experiences **physical fatigue**, it means they cannot continue functioning at their normal levels of physical ability. **Mental fatigue**, however, is more slanted towards feeling sleepy and being unable to concentrate properly.

# **Mental and physical fatigue**

- **Physical fatigue - the person's muscles cannot do things as easily as they used to. Climbing stairs or carrying laden supermarket bags may be much harder than before. Physical fatigue is also known as muscle weakness, weakness, or lack of strength. Doctors usually carry out a strength test as they go about diagnosing and trying to find out the causes of individual cases of physical fatigue.**

## Psychological (mental) fatigue

- **Concentrating on things has become harder. When symptoms are severe the patient might not want to get out of bed in the morning, or perform his/her daily activities. Mental fatigue often appears together with physical fatigue in patients, but not always. People may feel sleepy, have a decreased level of consciousness, and in some cases show signs similar to that of an intoxicated state.**

# What is the impact of fatigue?

- Fatigue is a workplace hazard because it affects your ability to think clearly and act appropriately. Fatigued workers are less alert, don't perform well, are less productive and are more likely to have accidents and injuries.
- People who are fatigued are not good at recognizing their own level of impairment, and can be unaware that they are not functioning at their best. In the worst case scenario they can drop off to sleep in the middle of a task, which can have fatal consequences.



# What causes fatigue?

- Fatigue is the end result of:
- inadequate sleep for repair and recovery of our body (in each 24-25 hour period)
- working out of sync with your natural body clock (the natural cycle is to work during daylight and sleep when it is dark)
- extreme physical or mental exertion.
- However a range of contributing factors can increase the risk of fatigue. Some factors are work based and some personal:
- work scheduling, rostering or timing
- workload being machine paced, complex or monotonous, physically or mentally strenuous (or both)

# Job Analysis

**Job analysis is a process of systematically collecting, analyzing and documenting the important facts about a job. It seeks to know:**

## USES OF JOB ANALYSIS

- In Selection
- Job analysis can provide specific information about the skills, knowledge and abilities required to perform successfully on the job. This information can be used to formulate job-related selection criteria and screening tools such as interview questions.
- For Classification Purposes
- Job analysis can provide information necessary for classifying positions and for making objective determinations about the relative value of a specific job in comparison with other jobs.

- **In Performance Appraisals**

- **Job analysis can create a detailed, objective description of the position that allows both the supervisor and the employee to have a shared understanding of the job. It can also provide the information necessary to develop concrete performance standards.**

- **For Planning Career Ladders**

- **Job Analysis can provide the understanding of a job and its relation to other jobs needed to initiate career ladder development.**

- **For Training Purposes**

- **Job Analysis can assist in developing objectives, standards and curricula for individual and group training.**

# Boredom

- **Boredom** is an emotional state experienced when an individual is left without anything in particular to do, and not interested in their surroundings. The first recorded use of the word *boredom* is in the novel *Bleak House* by Charles Dickens, written in 1852, in which it appears six times, although the expression *to be a bore* had been used in print in the sense of "to be tiresome or dull" since 1768. The French term for boredom, **ennui**, is sometimes used in English as well.