Introduction to Human Performance Engineering

Presented by

Prof. Ali Hussein Ataiwi

What does human performance mean?

Human Performance (HP) **represents the human contribution to system performance and refers to how people perform their work**. At its most basic, human performance **empowers employees to contribute to the safety and operational excellence of an organization**. The Principles of Human Performance are: Even the best employees can make mistakes.

Factors of Human Performance

- Talents.
- Tools.
- Incentives. الحوافز
- Job aids.
- Skills/knowledge (training)
- Environment.
- Information.
- Management

How is human performance measured?

Human performance measures were classified across six dimensions: **task performance, workload, situation awareness, teamwork/ collaboration, plant performance, and other cognitive performance indicators**.

What is human performance engineering?

Human performance engineering (Technology) (HPT), **a systematic approach to improving productivity and competence**, uses a set of methods and procedures — and a strategy for solving problems — for realizing opportunities related to the performance of people.

Why the management of human engineerting is important?

To protect the comfort, health, safety and well-being of personnel.

What is the purpose of human factors engineering?هندسة العوامل البشرية

Human factors engineering (HFE) is a discipline concerned with the design of tools, machines, and systems that take into account human capabilities, limitations, and characteristics. The goals are to design for safe, comfortable, and effective human use. It accounts for the strengths and weaknesses of humans during the design of interactive products to ensure efficiency and safety by reducing the risk of user error.



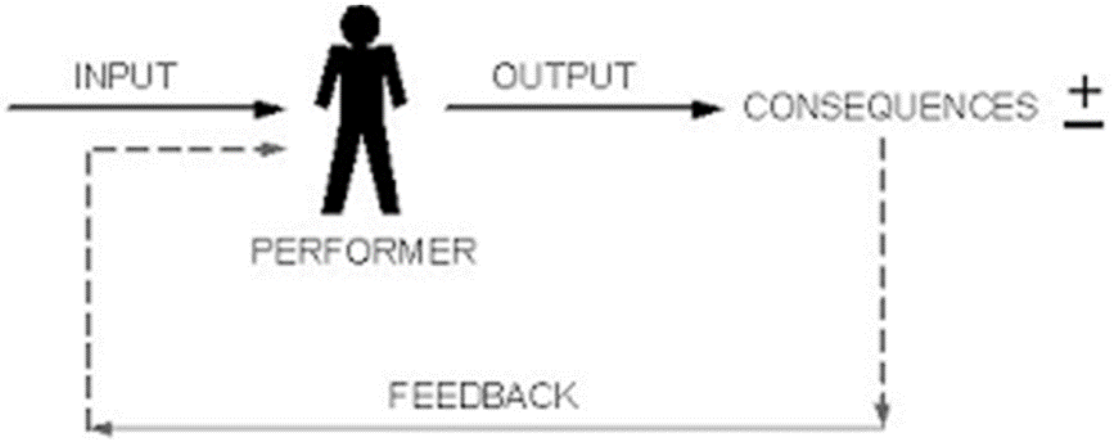
In a biomedical engineering context, the scope of definition applied to the term human not only encompasses individuals with capabilities that differ from those of a typical healthy individual in many possible different ways (e.g., individuals who are disabled, injured, unusually endowed, etc.) but also includes those who are "healthy" (e.g., health care professionals).

One finds a wide range of problems in which human performance engineering and associated methods are employed. Some examples include :

- Design of assistive devices and/or work sites in such a way that a person with some deficiency in his or her "performance resource profile" will be able to accomplish specified goals.
- Design of operator interfaces for medical instruments that promote efficient, safe, and error-free use.

In basic terms, each of these situations involves one or more of the following: (1) a human, (2) task or tasks) , and (3) the interface of human and task(s)

Human performance engineering emphasizes concepts, methods, and tools that strive toward treatment of each of these areas with engineering rigor that is routinely applied to artificial systems (e.g.,mechanical, electronic , etc.



The Human Performance System