Introduction to instructional technology

Objectives: At the end of this lesson you shall be able to
- **define instructional technology**
- **list the key components of the instructional technology.**

Science is a body of tested knowledge, which may be experienced in the form of a set of general principles. Technology is the process of creatively applying certain known and tested principles to a given practical problem. Thus it is a scientific method for a practical solution/ purpose.

Instructional Technology is a planned innovative activity in instruction. Technology is a product and not a process. We hear "high tech." "low tech." - which means whether they are highly sophisticated / mechanised, little mechanised, or labour intensive - that is between automation and low mechanisation.

Experts have suggested that 'technology of instruction' is the hardware - product type and the software - process type. The former is the use of appropriate equipment in the teaching process, and the latter is concerned with the development of learning experiences through the application of the science of learning.

At the low tech - end of the spectrum are the Chalkboard, wall charts, simple models and real objects. At the intermediate - tech level we have the overhead projector, slide, film projectors, teaching machine and other presentation hardware that are under the control of the instructor.

At the "high tech" end we have a packaged instructional materials, such as instruction through radio, television, Computer Assisted Instruction, dial access information system and multimedia instructional packages utilising computer.

The progress from 'low tech' to 'high tech' is marked by the increased complexity and the sophistication of the hardware and increased need to pre-program, pre-prepare the software content needing specialists for the methodology, content and media packages.

This leads to a progressive role of the human element in the system - the instructor - from planning and executing, selecting or managing the learning situation. From the simple teacher presentation techniques, low or intermediate technology to a 'high sophisticated technology' requires new conditions for learning.

The strong influence of science and programmed instruction in the early sixties was the starting point for the instructional technology. Though the earlier concepts on programmed techniques which have undergone considerable change, the instructional technologists adopt the process concept inter-wind with the product concept of "Step - by step learning' and production of learning material for mass consumption.

Do we really have a usable technology of training at the present moment? Instructional technologists should develop and apply methods, which are appropriate to the instructional purpose and situation for solving problem under study.

There are experienced teachers and administrators, who think even today, that instructional technology means audio - visual aids, and technology means equipment. It is high time that the wrong notions and concepts are corrected and for this there is necessary to know in depth the components of instructional technology.

Instruction is a development process to produce certain changes in the behaviour of a learner. Thus instruction to be effective we must achieve some stated objectives in behavioural terms.

The process of development must utilize a variety of principles and techniques to develop desired changes of behaviour in order to provide instruction. The instruction thus produced must be of high quality, and therefore quality control is necessary.

Thus instructional technology is a set of principles and procedures used to 'Analyse instruction, Design instruction, instruct, and provide quality control'. This is an approach to produce effective instruction. There are three key components in this approach. They are 1. Instructional Objectives, 2. Interactive Instruction, and 3. Evaluation.

- **Objectives** are precise descriptions of performances the instruction is to produce, stated in terms of the final behaviour of the trainee (we have already discussed about this in detail)

- **Interactive instruction** provides two way communications between the instructor and the trainee. During interactive instruction the trainee is kept active, both the instructor and the trainee to give immediate remedial instruction or correction. Thus interactive instruction is instruction in which the trainee is required to respond frequently to the instruction just like in a tutorial setting, there is continuous exchange of information between the instructor and the trainee, and requires immediate response and feedback that could be easily evaluated is interactive instruction.

- **Evaluation** is the process of testing the trainee and instruction, in order to validate the instruction and ensure the attainment of the objectives by the trainees interactive instruction is easy to validate because the trainee's progress can be checked continuously. When the instruction is not effective, it must be revised.