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M.E.S.- 102

Instruction In Higher Education

**Chapter Wise Reference Book
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By: Kshiyama Sagar Meher



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QUESTION PAPER

June – 2023

(Solved)

INSTRUCTION IN HIGHER EDUCATION

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Time: 3 Hours]

[Maximum Weightage: 70%

Note: All questions are compulsory. All questions carry equal weightage.

Q. 1. Answer the following question:

Explain the nature and importance of an interaction session. Describe how an interaction session is conducted.

Ans. Ref.: See Chapter-8, Page No. 84, 'Nature and Importance of an Interaction Session' and Page No. 87, 'Conducting an Interaction Session'.

Or

Describe the systems approach. Explain how instructions can be organised based on the systems approach.

Ans. Ref.: See Chapter-1, Page No. 3, 'Instructional System'.

Q. 2. Answer the following question:

What are the benefits of the grading system? Describe the difference between norm referenced and criterion referenced grading.

Ans. Ref.: See Chapter-17, Page No. 168, 'Points for Discussion Question' and Page No. 158, 'Norm Referenced Grading' and Page No. 159, 'Criterion Referenced Grading'.

Or

What are emerging technologies in education? Discuss the use of any three emerging technologies in education.

Ans. Ref.: See Chapter-10, Page No. 105, 'Future Trends: Emerging Technologies in Education'.

Q. 3. Write short notes on any four of the following:

(a) Advantages of programmed instructions.

Ans. Ref.: See Chapter-3, Page No. 24, 'Advantages of Programmed Instruction'.

(b) Benefits of testing and evaluation for students and teachers.

Ans. Ref.: See Chapter-11, Page No. 115, 'Values of Testing and Evaluation to Student and Teacher'.

(c) Projected teaching aids.

Ans. Ref.: See Chapter-9, Page No. 102, 'Activity' and Q. No. 1 (Self Assessment Questions).

(d) Different forms of items for setting question papers.

Ans. Ref.: See Chapter-15, Page No. 141, 'Different Forms of Test Items or Questions'.

(e) Methodologies of evaluating essay items.

Ans. Ref.: See Chapter-16, Page No. 153, 'Items Analysis for Short Answer Essay Type Items' and 'Facility Index for Short Answer and Essay Items'.

(f) Ways to make classroom lecture effective.

Ans. Ref.: See Chapter-7, Page No. 82, Q. No. 2 (Unit End Activities).

Q. 4. Answer the following question:

What is a unit plan? Develop a unit plan on a topic at college level, which you would like to teach.

Ans. Ref.: See Chapter-5, Page No. 47, 'Unit Plan' and Page No. 54, Q. No. 1.

■ ■

QUESTION PAPER

December – 2022

(Solved)

INSTRUCTION IN HIGHER EDUCATION

M.E.S.-102

Time: 3 Hours]

[Maximum Weightage: 70%

Note: All questions are compulsory. All questions carry equal weightage.

Answer the following question:

Q. 1. Describe the characteristics of an effective tool for evaluation of student achievement.

Ans. Ref.: See Chapter-15, Page No. 149, 'Essential Characteristics of An Effective Tool of Evaluation'.

Or

What are the 'measures of central tendency'? Explain any two measures of central tendency with an example for each.

Ans. Ref.: See Chapter-17, Page No. 161, 'Measures of Central Tendency'.

Q. 2. Answer the following question:

Describe the steps of organising cooperative learning in the classroom.

Ans. Ref.: See Chapter-3, Page No. 29, 'Co-operative Learning Method'.

Or

Discuss various formats of organising group discussion.

Ans. Ref.: See Chapter-8, Page No. 85, 'Formats for Group Discussion'.

Q. 3. Write short notes on any four of the following:

(a) Strengths and weaknesses of short answer type questions.

Ans. Merits of Short Answer Type Test:

1. Objectivity of scoring can be better ensured in short answer type question in comparison to long answer question.
2. Besides, the question-setter can ask a number of such questions as compared to long-answer type question within the same time limit. Thus, there can be a greater coverage of content (course).

3. They are more reliable than the long-answer type-questions.
4. There is less chance of guessing by the students.
5. Preparation and administration are easy.
6. It is a compromise between the essay and the objective form of test items.

Demerits of Short Answer Type Test: There are no such significant demerits of the short answer type test items. Handwriting, language, expression and the way of organisation of answer may affect the scores. However, the use of short-answer type tests are to be preferred to long-answer type tests.

(b) Weaknesses of marking system of assessment.

Ans. Ref.: See Chapter-17, Page No. 158, 'Inadequacies of Marking System'.

(c) Norm-referenced grading.

Ans. Ref.: See Chapter-17, Page No. 158, 'Norm-referenced Grading'.

(d) Benefits of Computer Assisted Learning (CAL).

Ans. Ref.: See Chapter-9, Page No. 101, 'Advantages of CAL'.

(e) Benefits of virtual teaching and learning.

Ans. Ref.: See Chapter-10, Page No. 106, 'Virtual Education'.

(f) Differences between Internet and Intranet.

Ans. Ref.: See Chapter-10, Page No. 112, Q. No. 8.

Q. 4. Answer the following question:

On the basis of your experience as a student of higher education, make a critique of the examination system in India in terms of its strengths and weaknesses. Also, suggest steps to overcome the weaknesses.

Ans. Ref.: See Chapter-11, Page No. 115, 'Values of Testing and Evaluation to Student and Teachers' and Page No. 116, 'Examination as the Stumbling Block for Qualitative Assessment'.

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Sample Preview of The Chapter

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INSTRUCTION IN HIGHER EDUCATION

BLOCK-I : INTRODUCTION IN A SYSTEMIC PERSPECTIVE



Instructional System

INTRODUCTION

The ultimate aim of higher education is to make students reach to the apex of knowledge. Therefore, it is the onus of the teacher to lead them to the right path of higher education. These days various educational institutions like universities and colleges have adopted various instructional processes employing different materials, patterns and approaches. These techniques are developed by the teachers themselves to create qualitative aptitude among students. For efficient and effective learning, different gadgets (audio-visual), space, time and human resources and materials are required. But these will give desirable results when these elements are organised in proper sequence and implemented scientifically.

Thus, the instructional system can be defined as 'systematic' and 'scientific organisation' of various elements to facilitate students learning and teachers teachings.

CHAPTER AT A GLANCE

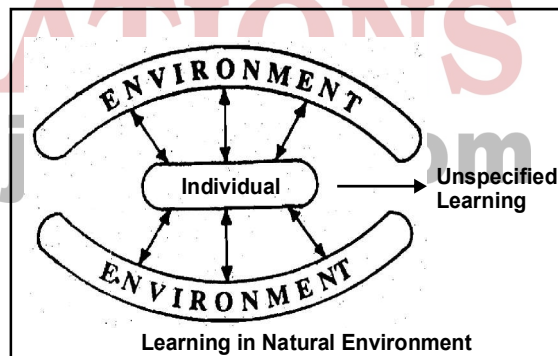
LEARNING AND INSTRUCTION

In classroom situations the terms learning and instructions are most commonly used.

Learning: Learning is the process of the acquisition of new or modifying existing knowledge, behaviours, skills, values or preferences. Learning may result in knowing laws and definitions, being able to perform certain things like experiments, calculations, etc., being able to read, write, speak and comprehend a language, being able to solve problems or make decisions applying knowledge, and memorization. Different schools of psychology look at the learning process differently. As per Behaviourist's school of psychology, learning refers to a change in the behaviour of individuals. According to Cognitivists School of Psychology, learning refers to a change in the cognitive structure of the individual. For the constructivists learning is the construction of new learning experiences by the learner which occurs to the interplay between cognition and the social context in which the learner is

situated. Thus, if we consider both the views then learning refers to as a change in behaviour and in the cognitive structure of an individual e.g., if a learner understands the cause of the spread of an infectious disease and the need for taking precautions against it, he will take the precautions for that disease and this will be reflected in his behaviour. He will know and understand certain other aspects of the phenomenon, if he performs certain acts. Thus variation in cognitive structure and variation in behaviour of an individual are complementary to each other.

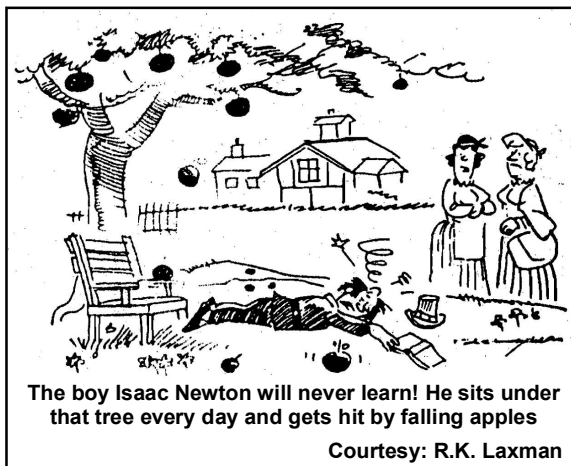
The Behaviourist's School of Psychology say that learning in an individual does not take place in isolation, it happens when an individual interacts with one or more components in the environment.



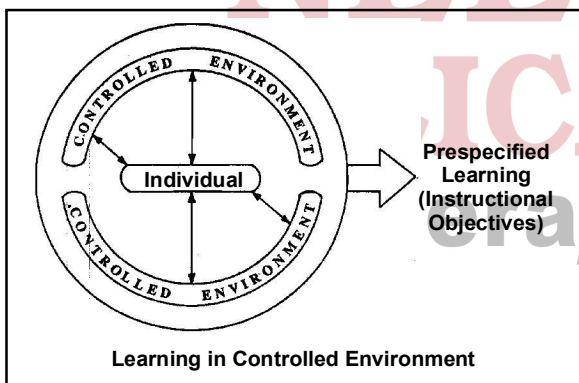
Environment is comprised of both living and non-living things like air, water, food, light, wind, plants, animals, other human beings and many more e.g., a child interacts with different sounds present in the environment and attempts to copy and speak same sounds. Child learns many things through interaction. The elders and other persons from whom the child learns are the part of his environment.

Students in colleges and universities learn by interacting with teachers, classmates, equipments, chemicals and other such components that are designed specifically for their learning.

This type of learning is called formal learning.



Instruction: When an individual interacts with the components of the environment in an informal and unorganised manner in a natural environment then it leads to unanticipated or unspecified learning. Provision of a controlled environment for the individual to interact which determines the attainment of pre-specified and desired learning outcomes. Hence, instruction is a process of providing a controlled environment comprised of various elements with which an individual/individuals interact and gain experience, leading to the attainment of certain pre-specified learning outcomes.



Environment varies not only the outward (overt) behaviour of a person but also the internal cognitive structure which may ultimately influence the present response as-well-as the future orientation to the environment. The learner plays an active role in its interaction with the environment. In the controlled environment, the learners experience a congenial and facilitating influence and develops his cognition, his own conceptual schemes and logical structures.

Learning takes place in an environment in both Behaviourist's Theory as well as Constructivists or the Constructivist Theory.

Environment may include delivering a lecture, organisation of discussions, demonstration, assignment of activities, suggestion of books to the students.

These components are needed for learning since each of them has its own function and usefulness. Different activities for the learners have inter-relationships and inter-dependence in a controlled environment. The environment would be the form of a system.

Concept of System

Let's take the example of a car to understand the meaning of a system. The car which is made up of various parts is a system. It has brake, steering and clutch. A car has, the gear, the radiator, the battery, the wheels, the carburetor and an ignition. As all these parts are needed to do various functions. Hence, all these are various components of the car. The car functions well if all of its component work well. If any of the components stop functioning it also influences the functioning of all the other components and that of car. So, components are interrelated and inter-dependent.

A car functions when all its components operate in an interrelated and interdependent manner. Car, thus, works as a system. Thus in a system, various components operate together in an interrelated and interdependent manner to perform certain functions.

A system may be closed or open. A closed system does not accept new information from outside and remains detached from interfacing with other systems outside. A car without a driver is a closed system because with no driver it can't accept any information from outside and make adjustments accordingly. An open system accepts information from its interfacing systems and adapts to new circumstances. The car with a driver is an open system since it will stop when there is an obstacle of some sort.

A system does not perform in a vacuum. It is surrounded by other systems which in turn form an environment for the system. In an open system, flow of information takes place and it adapts itself to the needs generated by the environment. Closed system does not accept new information from the environment and remains closed.

A system has a couples of sub-systems e.g. in car system, there are gear system, oil flow system and brake system, etc.

The sub-systems also work as a seperate system. In a car, if a gear is considered as a system then the other components of the car will be the environment of the gear system.

A system generally has certain goals to achieve which are called system goals. The achievement of the goals depicts the performance of the system.

The human body which is a complex system, is made up of many sub-systems like digestive system, circulatory system, skeletal system, nervous system, etc. Body remains fit and healthy with the collective functioning of these systems. Like this an orchestra party can be considered as a system and each instrument player is a sub-system.

So, the system functions in the following way:

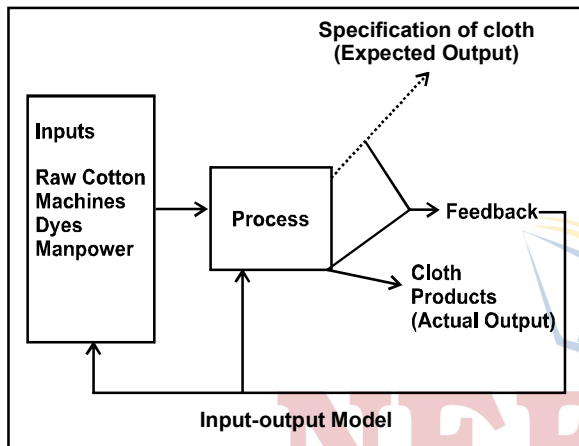
INPUT → PROCESS → OUTPUT

The nature of the input material and the design of the process depend upon the expected output. We

obtain the actual output when the selected input material goes through the designed process. The actual output may or may not be the same as the expected output.

The variations between the two provides information whether any modifications in the selection of inputs or the designing of the process is required. This information is the feedback for the selection of inputs and the process designing.

The following diagram represents various aspects of the clothes manufacturing system with the use of Input-output Model:



INSTRUCTIONAL SYSTEM

Instructional system is a scientific process in which the teacher sequences the materials and methods to make the student learn. Teacher designs the instructional system to bring certain cognitive changes or behavioural changes in the students. Teacher designs the system considering the objectives which should be attended by the students. System setting helps the teacher to decide upon the organisation of learning experiences. The teacher scientifically selects the methods and approaches to teaching, different materials required for interacting, manipulating or studying by students and teachers.

Systems Approach to Instruction

Instruction includes the interaction of an individual with the organised environmental leading towards the attainment of certain instructional objectives. When student with a certain type of behavioural pattern (and cognitive structure) go through the instructional system, they emerged out with a varied pattern of behaviours (and cognitive structure). The behaviours with which the students enter the instructional process are called entry behaviours. while the certain terminal behaviours which the students are expected to achieve are known as expected terminal behaviours. So the instructional process is designed as per the expected terminal behaviour. Due to the lack of effectiveness in the instructional process, the difference between the expected and actual terminal behaviours occurs. So the difference between the expected and the actual terminal behaviour acts as a feedback. The entry behaviour is

so the input and the actual terminal behaviour is the output of the instructional system.

Formulation of Output Specifications

The output specifications reflect the majority of the job requirements to be catered to by an undergraduate programme in Civil Engineering, Electronics and computers. The new technologies could be mastered only in the actual job situation. The students enrolled for the programmes already have some knowledge and competencies through their formal education and through informal learning. So the level of the students or their entry behaviour at the time of enrollment has to be considered while formulating or designing the output specifications for the engineering programme.

Preparation of the Criterion Test

The second step in development of an instructional system is the preparation of criterion test. As items in the test form the criteria of understanding whether all expected terminal behaviours have been achieved or not, the test is called the criterion test. Through this test we will know whether the students have achieved the expected terminal behaviours or not. The tests should be comprised of the items which represent all the terminal behaviours.

Formulation of Instructional Input Alternatives

The third step in the development of an instructional system is the formulation of instructional input alternatives. For the achievement of objectives visualised, a teacher can think of a large number of methods, media and material. There may be overlapping and repetition in the use of inputs. So for the instructional system, various input alternatives are to be identified e.g. a lecture and a well-planned written material of the type can impart knowledge in the concerned engineering subject to the students, so both these techniques are alternative ways of giving knowledge or are the alternative instructional inputs to achieve the same instructional objectives.

Selection of the 'Best' Set of Inputs

The selection of the 'best' or the most suitable instructional inputs is the fourth step involved in the development of an instructional system. This is required since we cannot or need not use all these alternative inputs in a given instructional situation e.g. instead of having long lectures we can use written materials and audio-cassettes. We should choose the best set of instructional inputs from the alternatives available so that after the formulation of input alternatives the best set of inputs can be used.

Preparation of Learning Material

The fifth step in the development of an instructional system is the preparation of learning material. Learning materials are needed for lecture, discussion, assignment and practical work. Learning materials should be prepared considering the terminal behaviours and the nature of the selected input. As these are used in the specific situations of learning. So these should be very comprehensive. For the facilitation of effective learning, developed learning activities should be suitably

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sequenced proper sequencing of the learning experiences help in the attainment of logical continuity.

Laboratory Tryout

The first step in the testing phase in the developmental process of an instructional strategy is the laboratory tryout. Laboratory tryout being the initial tryout, the sample may be small and should represent the population of persons for whom the strategy is developed. The motive of this testing is to find out whether, the system is effective in terms of achievement of objectives.

Field Tryout

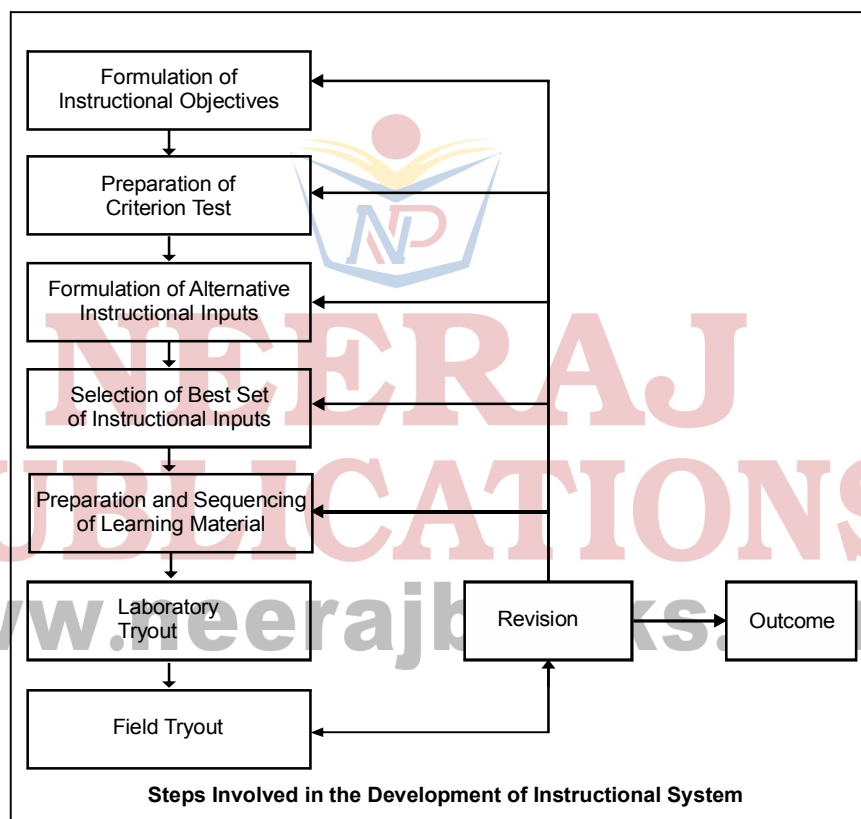
The system is tried out on a large sample after the tryout on a small sample. As the system is taken from

the laboratory to the field this is called as field tryout. In the field tryout a few mistakes can be identified, rectified and thus the system has to be revised.

Revision and Outcomes

After the field tryout, revision leads to the final form of the instructional system. The system is modified as per the obtained information from its functioning after every implementation of it which is a continuous process.

The given below is the figure which shows various steps involved in the development of the instructional system:



SELECTION OF INSTRUCTIONAL INPUTS

Teacher has to select the best set of inputs out of various alternative instructional inputs available. In the selection process teacher has to match between the characteristics and potential of each and every instructional input alternatives and the instructional context. While selecting suitable instructional inputs teacher has to consider the following five major selections:

(1) Instructional Objectives: Selection of the instructional inputs depends upon the instructional objectives. Its like the route and destination relationship. As to reach a particular destination, we will have to follow

the specific route that goes towards that particular destination.

For imparting basic information to the students, teacher can use the methods of lecture. But for the development of critical thinking and skills of experimentation, teacher will have to use method of discussions where more of interaction and exchange of views between the learner and the teacher is possible. Like this, for developing skills of experimentation, laboratory work would be the priority of teacher as instructional input. Practical skills like cycling, etc., can't be learnt only by listening to a lecture on cycling.

(2) Learner's Characteristics: For under graduation level students, a written material which is