AUDIO VISUAL EDUCATION

    Module I   Introduction to Instructional Design

    Unit 2   Basic Concepts on Instructional Design.

INSTRUCTIONAL OBJECTIVES:

1. Select the definition, of job performance requirements.

2. Discriminate four types of task analysis, relating to situations.

3. Classify by definition, a criterion test.

4. Differentiate the statement which best describes the difference between a criterion test and an achievement test.

5. Explain the validity of a criterion test in terms of its performance requirement.

6. Select the statement which best describes the proper function of a lesson plan.

7. Explain the purpose of job aid.

8. Explain the two phases of validation.

9. Describe the value of follow up data.

10. Arrange the eight components to be followed in instructional design in seriatim (in the sequential order).

11. Determine the factors on which selection of media fit, in the instructional design.

12. Describe how training requirements are determined.

AUDIO VISUAL EDUCATION   SCRIPT BOOK
                                    Time : 45 Minutes.

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Module I :   INTRODUCTION TO INSTRUCTIONAL DESIGN
Unit 2   :   BASIC CONCEPTS ON INSTRUCTIONAL TECHNOLOGY

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1. This is beginning of Unit 2 of Module-I.   BASIC
    CONCEPTS ON INSTRUCTIONAL TECHNOLOGY.

2. There are 11 objectives for this Unit - items 10 to
    20 are given on page   of the work-book. Read them
    (STOP FOR 2 MINUTES AND THEN RESTART)

3. In the previous unit, we identified the three key
    components of a system for effective instruction
    namely behavioural objectives, interactive
    instruction and validation process.

4. We should prepare clear and precise objectives to
    guide the design of instruction and to let the
    trainee know what is expected of him.

5. We could provide interactive instruction, so that
    both the Instructor and trainee will know how they
    are progressing at all times.

6. And we should validate our instruction-test it to
    see if it does what it is supposed to do, and
    revise it wherever it is weak.

7. These are the three key components forming the
    core of the instructional technology. Around these
    components a set of procedures, methods and
    strategies for refining and improving the
    instruction has to be developed.

8. Here is a flow chart that illustrates the process
    of developing instructional materials for a course.
    Refer to page   of your work book for this chart.
    (STOP. RESTART AFTER ONE MINUTE).

M I/2-1 SB

9. First and foremost during the development of instructional materials, we have to define job performance requirements. The job performance requirements are those skills and behaviours exhibited by the successful worker on-the-job. It must be stated clearly.

10. There are several ways to find this information. The best way of getting accurate, reliable information is to combine a few.

11. One such method is to do the observation task analysis observing a worker performing the job.

12. We can also do a content analysis - reading about the job from books or National classifications.

13. If we are experts in a particular job, we can do a simulated task analysis - picturing the entire thing and analysing skills and behaviours involved.

14. Another method is to do an interview analysis. We interview experts and specialists on job performance. We determine consenses among skilled men, supervisors, training officials and others involved, regarding job performance requirements.

15. These specialists or subject matter experts are very useful for the analysis that is necessary at the beginning of the instructional design.

16. Even if you are a subject matter expert, you may like to consult other experts in the field to be sure that you overlook nothing, when you define the job performance requirements.

17. Now refer to work-book, page   and answer questions 1 & 2 (STOP. THE PRESENTATION. RESTART AFTER 2 MINUTES).

M I/2-2 SB

18. If you have ticked C for question 1 you are right.
Job performance requirements include everything
the worker must do on the job.

19. For question 2.
Observation task analysis is observing the job
being performed; content analysis is reading about
the job; simulated task analysis is imagining the
job being performed; and interview analysis is
asking about how the job is performed.

20. Next step in instructional development is to
identify the training (educational) requirements
i.e. how much training we must do and for what
purposes. You may call this training requirements.

21. We should know the level of the trainee - the
skills and knowledge he already possesses required
for the job- call it entry level performance;

22. Substract entry level performance from job
performance requirements, and the difference is
our training requirements i.e. skills and/or the
knowledge the trainee lacks and to be taught
(JPR - ELP - TR)

23. An in-depth analysis of job performance
requirement is made, to define and specify course
objectives.

24. This is done around the concept stimulus -
response i.e. exactly what a person does in
response to what situation, direction, problem or
event. Once you have defined course objectives.

25. We can construct criterion test. A criterion
test is not an achievement test, often used in
General Education.

26. If we have 100 objectives, an achievement test
samples, a trainee's learning by testing some,
but not all of the objectives.

M I/ 2- SB

27. A criterion test is designed to test every single objective. Everything the trainee must do on the job is tested at the end of instruction to determine whether instruction is adequate.

28. Criterion test items must be valid, i.e. the performance requirement of a criterion test item must correspond exactly to the performance specified in the objectives.

29. e.g. If an objective calls for the trainee to correctly solder something.

30. It would not be valid to test him on his ability to explain how to solder it. If it was only 'to explain' we teach him the explanation and test him on that. If he must know the skill, then we teach him how to do it and test his performance (skill).

31. Now refer to the work book page   and answer questions 3, 4, 5 and 6 (STOP. RESTART AFTER 5 MINUTES).

32. Answer to question 3 is A. i.e. we determine our training requirements by substracting trainees' entry level performance from the job performance requirements.

33. Correct answer to question 4 is
   A criterion test is one that is designed to test every single objective. Got it?

34. While the achievement test merely samples the trainee's learning, the criterion test - tests every objective. If you have ticked (b) your answer to question 5 is correct.

35. Question 6. If you have said that a valid test item is one that calls for student performance that matches the performance stated in the corresponding objective you are on the right track. We do not test a student on a skill that

M I/ 2-4 SB

is different from the one specified in the objective.

36. Well defined objective and criterion test items lay the foundation for designing instruction. We select content needed to reach the objectives. We then select media and methods. The Instructor designs lesson plans to specify how we are going to teach our objectives.

37. Lesson plans are not rigid, unbending document. They should be flexible. We have selected contents to reach the objective. We also selected media to teach and attain our objectives.

38. Lesson plan is a guide; it provides direction; it shows where we are going to how we intend to get there. In this guide,

39. We organise content, methods and media and tests. We systematically arrange to cover specific topics to provide the trainee desired instruction, test him and obtain feed-back.

40. Now answer question 7. (STOP PRESENTATION FOR A MINUTE AND THEN START).

41. Have you ticked C ? The purpose of the lesson plan is to help the instructor to organise subject matter, questions, and trainee responses in such a way as to aid the trainee in reaching the objectives.

42. How to organise content information. From our experience, as subject matter expert, from books, periodicals etc., We also determine when to give additional examples for clarification or interesting information for enrichment.

43. Our analysis of stimulus - responses requirements helps us select appropriate instructional aids and sequence. This presentation is called stimulux. Your reaction, your answer in the work-book is

called response.

44. We may consider the need for job simulation and the consequences, if any, of not providing job simulation.

45. Sometimes we might devise special individualised materials say programmed instructional text books where appropriate or adapt our instruction to particular needs of trainees. Monitary and time constraints under which education and training is given may come in the way.

46. We may determine whether or not a job aid is feasible.

47. The flow chart you have is a job aid. A job aid is a check list, a list of steps to be followed by one doing any job, telling him how to do it, use of job aids can shorten formal course of instruction and make the trainee productive in much less time.

48. Refer to your work-book page _____
Answer question 8 (STOP FOR ONE MINUTE AND THEN RESTART).

49. The purpose of a job aid is to eliminate unnecessary training to get trainee on the job and productive as soon as possible.

50. We have one objective. Whatever, we decide to include, however we organise our materials, we have one target – the course objectives – and evaluate everything in terms of its potential to help us reach those objectives, as soon as possible, as well as possible and with a minimum waste of time, money and effort.

51. After developing the course, what will you do? Is it ready for use? Not yet. Why? We should make sure that the course does what it is

M I/ 2-6 SB

supposed to do. It must be a valid course. So, we test the course. There are <u>two phases</u> in this process <u>of</u> testing or <u>validation.</u>

52. One is developmental testing. As its name implies, this phase of validation is done during development of the instruction i.e. when it is in a raw form. We try the materials on individuals or small group of students from target population. Test results are reviewed and problems are as identified.

53. We then revise the instruction based on what we have found out, test it again, and repeat the test revision cycle until the instruction is as effective as it should be. At this stage, we edit and polish the instructional material to make it ready for the next phase of validation.

54. Next phase is FIELD TESTING. It is the first real test for our materials and instruction. We test it where it must finally succeed, in a real training situation. We make sure that testing is done under actual training conditions.

55. We make sure at this stage if it is effective with a larger population, diverse group of trainees as it was with small or select groups and individuals.

56. We may succeed. But there can be few weaknesses or ambiguities that may stand out. We may be able to find out appropriateness of each part of our instruction much more precisely than was possible during developmental testing.

57. Field testing helps us to find inconsistencies in our materials and presentation in the real training situation and to correct them.

M I/ 2-7 SB

58. Note feed-back arrows - dashed lines go back to previous steps from validation. This is because if the instruction is not as effective as it should be, we may have to look in several places for the source of the difficulty. Difficulty may be in the instruction itself or else test or testing may be faulty. Sometimes objectives are unattainable,   , e.g. when entry level skills are overestimated, we have to overcome the difficulties wherever they are:

59. Now answer question 9 and 10 (STOP FOR 2 MINUTES AND THEN RE-START).

60. Answer to question 9 (a) is developmental testing and answer to (b) is during development of instruction.

61. For question 10, if you have ticked C it is correct. A is not correct, as developmental testing is the first test for us. B is not correct either, as every phase of validation improves our instruction, and each one is critical.

62. Let us review again.
A trainee enters with certain behaviours and leaves with others i.e. he comes with one set of abilities and skills and leaves with others. This difference or change is our mission.

63. We start by deciding what must be done on the job probably by doing some form of job or task analysis.

64. First four steps, are concerned with gathering information, analysing, observing and determining what the trainee can already do and what he must be able to do.

M I/ 2-8 SB

65. Then we have a clear picture. We can make necessary decisions at this steps.

66. We can specify what the trainee has to get from us.

67. This is what we call OBJECTIVES - the target.

68. And we have a clearer picture to show the trainee.

69. We can decide on the most appropriate methods and what a lecture or demonstration is to accomplish.

70. And what the text or self-study materials should contain.

71. We can also determine when individualised instruction is not most appropriate and

72. When group instruction is most appropriate.

73. What kind of simulation or on the job training is required.

74. In other words, given the objectives, we can select media and methods, efficiently.

75. And validation is to make sure that we have not missed any of the objectives.

76. Next in importance in the process is - field implementation and follow up - to make sure that the course continues to be effective. Follow up means finding out the need for changes if any. Is the job changing in any way?

    Refer to flow chart in your work-book. An arrow goes from follow-up back to job performance requirements. Several steps might have to be re-done if our follow-up date indicate that way.
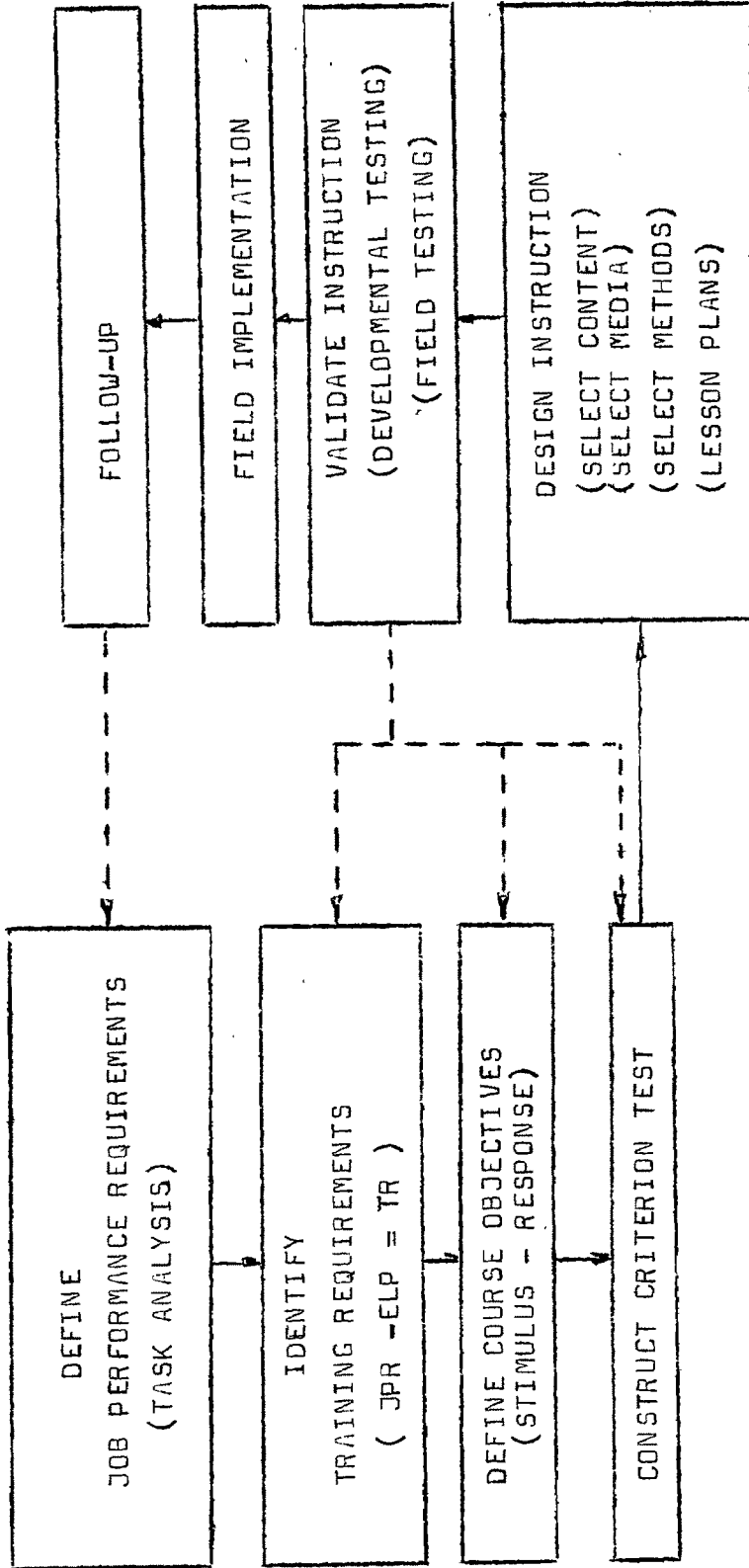
77. Answer questions 11,12 and 13 (STOP FOR 8 MINUTES AND THEN RESTART THE PRESENTATION).

    For question 11, if you have followed the sequence given in the flow chart you were often asked to refer, you have done an excellent job.

M I/2-9   SB

78. Question 12, we need follow-up data to implement and maintain the course to be sure that it continues to be effective.

79. Question 13. Selection of media are determined within the instructional design by the requirements of objectives, content and methods of instruction.

80. Why do all this work? Because it gives results.

81. A skilled employee is a resource. This approach should improve learning.

82. Our purpose was not to attempt to teach you everything about instructional design, but we wanted to give you only a general overview.

83. We have now come to the end of this unit i.e. Unit-II of Module-I. You will have to answer a test at the end of Module I, i.e. after other units are covered. Every objective will have a test item.

M I/2-10 SB

PANEL

SYSTEMS APPROACH TO INSTRUCTIONAL DESIGN

FOLLOW-UP

FIELD IMPLEMENTATION

VALIDATE INSTRUCTION
(DEVELOPMENTAL TESTING)
(FIELD TESTING)

DESIGN INSTRUCTION
(SELECT CONTENT)
(SELECT MEDIA)
(SELECT METHODS)
(LESSON PLANS)

DEFINE
JOB PERFORMANCE REQUIREMENTS
(TASK ANALYSIS)

IDENTIFY
TRAINING REQUIREMENTS
(JPR -ELP = TR)

DEFINE COURSE OBJECTIVES
(STIMULUS - RESPONSE)

CONSTRUCT CRITERION TEST

44

WORK BOOK

- -

Module I   Introduction to Instructional Design

Unit   2   Instructional Technology-Basic Concepts

- -

1. By job performance requirements, we mean:

_____ a. Job descriptions prepared by administrative personnel.

_____ b. Degree requirements of prospective trainees

_____ c. Everything the skilled worker must do on the job.

2. Briefly define:

a. Task analysis observation

b. Task analysis simulated

c. Content analysis

d. Interview analysis

3. We determine training requirements:

_____ A. by subtracting trainees' entry level performance

_____ B. from a job content description

_____ C. from past experience.

4. What is a criterion test ?

M I/2-1/WB

5. How is a criterion test different from an achievement test ?

_____ a. A criterion test is shorter than an achievement test.

_____ b. An achievement test samples the trainee's learning, while a criterion test, tests every objective.

_____ c. A criterion test covers some of the objectives, while an achievement test covers all of the objectives.

6. When we say criterion test items must be valid, what do we mean ?

7. Everything in the lesson-plan, should be evaluated in terms of its usefulness in helping the trainee.

_____ a. understand course content.

_____ b. analyse job performance requirements

_____ c. reach the course objectives.

8. What is the purpose of a job aid ?

9. a. What is the first phase of the validation process ?

   b. When is this done ?

10. Basically, field testing is the :

_____ a. first test of our instruction

_____ b. only critical phase of validation

_____ c. first real world test of our instruction.

M I/2-2/WB

11. Arrange the following in the order in which they are to be followed for instructional design.

_____ a. job performance requirements.

_____ b. identify training requirements.

_____ c. define course objectives.

_____ d. design instruction.

_____ e. construct criterion test

_____ f. field implementation

_____ g. validate instruction

_____ h. take follow-up action.

12. Of what value is follow-up dates ?

13. State where selection of media fit in the instructional design ?

M I/2-3/WB.

AUDIO VISUAL EDUCATION

CRITERION TEST

- -

Module I   Introduction to Instructional Design

Unit   2   Instructional Technology-Basic Concepts

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                              _ _ _ _ _ _ _ _ _ _ _

b. Task analysis simulated   _ _ _ _ _ _ _ _ _ _ _

                              _ _ _ _ _ _ _ _ _ _ _

c. Content analysis   _ _ _ _ _ _ _ _ _ _ _

                              _ _ _ _ _ _ _ _ _ _ _

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                              _ _ _ _ _ _ _ _ _ _ _

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AUDIO VISUAL EDUCATION

KEY TO
CRITERION TEST

- -

Module I   Introduction to Instructional Design.

Unit   2   Instructional Technology Basic concepts.

- -

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  ** c. Everything the skilled worker must do on
          the job.

2. Briefly define:

a. Task analysis Observation   Observing the worker
                                 performing the job.

b. Task analysis simulated   imagining the job being
                                 performed.

c. Content analysis   reading about the job

d. Interview analysis   asking about how the
                                 job is performed.

3. We determine training requirements:

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A criterion test is designed to test every instruct-
ional objectives.

M I/2-1/KCT.

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A valid test item is one that calls for student performance that matches the performance stated in the corresponding objective.

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8. What is the purpose of a job aid ?

The purpose of a job aid is to eliminate unnecessary training to get trainee on the job and productive as possible.

9. a. What is the first phase of the validation process ?

Developmental testing.

   b. When is this done ?

During development of instruction.

10. Basically, field testing is the:

     _____ a. first test of our instruction

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M I/2-2/KCT

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_2_ b. identify training requirements

_3_ c. define course objectives

_5_ d. design instruction

_4_ e. construct criterion test

_7_ f. field implementation

_6_ g. validate instruction

_8_ h. take follow-up action.

12. Of what value is follow-up dates?
We need follow-up date to implement and maintain the courses to be sure that it continues to be effective.

13. State where selection of media fit in the instructional design ?
Selection of media are determined within the instructional design by the requirements of objectives, content and methods of instruction.

M I/2-3/KCT