UNIT 10 PLANNING CLASSROOM EVALUATION

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10.1 INTRODUCTION

You have studied in previous unit that evaluation is an integral part of the teaching-learning process. As a teacher, you are required to make several decisions pertaining to: (i) learning material, (ii) learner (abilities, behaviour, aptitude, needs, etc.), (iii) learning outcomes, (iv) methods to be adopted, (v) teaching aids to be used, etc. while imparting classroom instruction.

You are also sometime required to select students for a particular purpose for which you have to grade them. You are always interested in knowing how your students are progressing. If they face any difficulties in learning, you are required to identify those difficulties. Does a particular student suffer from any particular learning disability? If so, what measures you can take to provide a remedy? You might be interested in knowing the extent to which you have been successful in your teaching? How effective was the transaction of learning material? How far the desired (and pre-fixed) learning outcomes have been achieved? What modifications do you have to make in learning material selected and the strategy/method adopted? For taking a considered decision regarding the issues mentioned above, you have to make some kind of evaluation. Thus, it becomes important for you to systematically plan your classroom evaluation so that the decisions taken on the basis of evaluation are correct and result in the desired outcomes.
We also know that you as an individual, evaluate several things just as all of us do. You evaluate the behaviour of your colleagues and your students. You also evaluate the various programmes being run by the school. Such types of evaluations are classified as ‘classroom evaluation’. In this unit, we shall discuss how classroom evaluation is different from other types of evaluation. We shall also discuss various types of tests which you are required to construct and use in the teaching-learning process and their appropriateness and uses.

10.2 OBJECTIVES

After going through this unit, you should be able to:

- distinguish classroom evaluation from other evaluation made by a teacher,
- discuss formative and summative evaluation along with their uses,
- describe diagnostic evaluation and its uses,
- discuss evaluation in the context of placement,
- discuss mastery learning and developmental learning,
- discuss the concept of criterion-referenced test and norm-referenced test and differentiate between the two,
- explain criterion-referenced testing in the context of mastery learning,
- construct an achievement test using various types of questions.

10.3 CLASSROOM EVALUATION VIS-A-VIS OTHER EVALUATION

In order to understand as to how classroom evaluation is different from other types of evaluation or what types of evaluation constitute classroom evaluation, let us review the work done by a teacher in a particular academic year in a classroom from the beginning.

(i) In the beginning of a session, when a new class is handed over to a teacher, he/she is interested in knowing as to how much a particular student or a class as a whole has learnt in the previous class. This evaluation provides him/her the starting point for his/her teaching. Through this evaluation, the teacher is able to judge who are the better students of the class and who are not so good or are the weak students. A teacher may also need a test to find out whether a new student should be given admission or not.

(ii) After teaching for some time, say one or two units, the teacher is interested in knowing how the class is progressing. How effective has been his/her strategies and methods of teaching? What is needed to be done in order to improve the programme or the student as a learner and his/her own performance as a teacher? In order to do so, he/she again has to make some kind of evaluation. Inputs from such an evaluation could be made to enhance the performance of the students as well as that of the teacher.
(iii) Once a particular student is not doing well, the teacher needs to diagnose the difficulties of that student in order to provide suitable remedies. Again some kind of evaluation has to be made.

(iv) At the end of the session, the teacher is interested in finding out that how much has been learnt by each student. Thus, in order to decide whether a particular student should be promoted to next class or declared “passed” or not, the teacher again has to give him/her some kind of test and allot a particular division and/or rank. Thus, the teacher has to make a final assessment of learning of each student and in order to do so, has to make some kind of evaluation.

Thus, the evaluations which are made to: (i) place a student (e.g. conducted in the beginning of a session) in a particular group, (ii) find means and ways of improving/enhancing performance of a student, (iii) diagnose the difficulties faced by a student, and (iv) assess the amount of learning in terms of learning outcomes which has taken place in each student, are grouped together and are called ‘classroom evaluation’ as they are directly related to his/her interaction with the students inside the classroom.

10.4 FORMATIVE AND SUMMATIVE EVALUATION

As described in Section 10.3 (ii), you need to continuously evaluate your students during the course of teaching-learning to monitor his/her learning progress during instruction. Such an evaluation is called ‘formative evaluation’. As such, its results are not used for assigning course grades. Its purpose is to provide continuous feedback to both the student and the teacher concerning learning successes and failures so that corrective measures can be taken. Feedback to students provides reinforcement to successful learning and identifies the specific learning errors that need correction. Feedback to the teacher provides information about the quality of his/her teaching so that he/she can modify instructional strategy and provide group and individual remedial work. As formative evaluation is directed towards improving learning, the results are typically not used for assigning grades. Formative evaluation generally is done through mastery tests prepared by teachers. Observational techniques are also used to monitor student progress and identifying learning errors.

Evaluation undertaken at the end of a course (or unit), to determine the extent to which the learning objectives have been achieved is called ‘summative evaluation’. It is used primarily for assigning grades and/or for certifying students’ mastery of the intended learning outcome. As a byproduct, it can also provide some information for judging appropriateness of the course objectives and effectiveness of the teaching-learning process. Teacher made tests, rating scales, etc. are generally used for summative evaluation.

10.5 DIAGNOSTIC EVALUATION

Diagnostic evaluation takes over from the point where formative evaluation leaves. Once plausible difficulties of students are identified by formative evaluation and standard corrective principles are applied but they (students) still continue to be afflicted by the same errors, detailed diagnosis of the
problem is required. To use a medical analogy, formative evaluation is like providing first aid. But if the first aid is found wanting, a search has to be made for underlying causes or a deeper diagnosis is required. Thus, a diagnostic evaluation is much more comprehensive and detailed. It involves the use of specially prepared diagnostic tests as well as various observational techniques. Serious learning problems also require the advice for remedial action from experts. The primary aim of diagnostic evaluation is to determine the causes of learning problems and to formulate a plan for remedial action.

10.6 EVALUATION AND PLACEMENT

In Section 10.3, we have discussed that a teacher is also required to evaluate students in order to select some of them from a group for a particular task or to decide whether to admit a fresh student in a particular class or not, or to divide students into groups of bright and average, below average students, etc. You probably perform these tasks in your day to day teaching. You know that these tasks are concerned with the entry behaviour of students. Entry behaviour helps to find prerequisites available for beginning planned instruction. It also helps to know their mastery level in a given unit/course or the extent to which they have already mastered the objectives of the planned instruction. A number of techniques like aptitude test, pretest on unit course objectives, etc. may be used for the purpose. Evaluation which is done for such types of placements is called ‘placement evaluation’. Its purpose is to determine the starting point in the instructional process, mode of instruction that is likely to provide optimum benefit to each student.

Check Your Progress 1

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the unit.

1. Give four reasons for undertaking classroom evaluation.

........................................................................................................................................
........................................................................................................................................

2. Define formative and summative evaluation.

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........................................................................................................................................

3. List two uses of diagnostic evaluation.

........................................................................................................................................
........................................................................................................................................
4. Indicate for each of the following statements whether it refers to formative evaluation, summative evaluation, placement evaluation or diagnostic evaluation.

(a) Pretest or pre-requisite test in a subject. ( )

(b) A unit test in a subject to measure the mastery level. ( )

(c) A device/technique for observing and recording writing errors. ( )

(d) Teacher made test to assign grades. ( )

5. Incomplete sentences given below are followed by a few alternative phrases. Encircle the serial number of the most suitable alternative phrase for completing the sentence.

(a) Evaluating students' learning progress during instruction to identify learning errors and to provide corrective measures is ________.
   (i) placement evaluation
   (ii) formative evaluation
   (iii) summative evaluation
   (iv) diagnostic evaluation

(b) To determine causes of learning problems ______ is used in teaching-learning process.
   (i) formative evaluation
   (ii) placement evaluation
   (iii) diagnostic evaluation
   (iv) summative evaluation

(c) The aim of placement evaluation is to ________.
   (i) determine the possession of prerequisites
   (ii) identify difficulties of students
   (iii) provide feedback
   (iv) assign grades
10.7 CRITERION REFERENCED AND NORM REFERENCED TESTS

So far we have discussed the various types of classroom tests in Unit 9. Reference was also made to criterion referenced tests and norm referenced tests in the same unit. We have not yet discussed ways through which the results of these tests can be interpreted. In the following sub-sections, we make an attempt to do so.

10.7.1 Criterion Referenced Vs. Norm Referenced Testing

There are two basic ways of interpreting students’ performance in a test. One is to describe performance in terms of the specific behaviour one can demonstrate (e.g. a student can spell so many words correctly). The other is to describe the performance in terms of the relative position one holds in the group on which the test is administered. The first type of interpretation is called criterion referenced and the second is called norm referenced.

In a criterion referenced testing, the performance is evaluated against a pre-established criterion, whereas in a norm referenced testing, norm can be determined only after the test has been administered and evaluated. Both types of interpretations are useful. Criterion referenced interpretation enables us to describe what an individual can do without reference to other members of the group. Norm referenced interpretation enables us to determine how an individual’s performance compares with that of other members of the group.

Most of the teacher made tests and standard tests are norm referenced tests. These tests are designed to rank students in order of their achievement so that decisions based on relative achievement (e.g. selection, grouping, and grading) can be made with greater confidence. Thus, a key feature in constructing a norm referenced test is the selection of test items that provide a wide range of scores. That is why difficulty level and discriminating power become important concerns in this case (for the detailed discussion of these terms, refer to Unit 12).

Since criterion referenced tests are not concerned with the relative achievement of students, items difficulty level and discriminating index are not used as criteria for item selection in this case. Instead, items are selected on the basis of how well they reflect the specified learning tasks being measured. If the learning task is difficult, the item will be difficult. If the learning task is easy, the item will be easy. Here the purpose is to prepare a test that can be interpreted directly in terms of the specific knowledge and skills that students are able to demonstrate.

Both criterion referenced and norm referenced tests can serve four basic uses i.e., placement, improvement of performance, diagnosis of difficulties, and assessment of the amount of learning of a student in classroom instruction. However, the functions of formative and diagnostic evaluation are likely to be better served by criterion referenced instruments and those of summative evaluation by instruments that are norm referenced. Placement evaluation requires both criterion referenced measurement (e.g. to describe possession of
pre requisite skills) and norm referenced measurement (e.g. to determine level of performance for advanced placement).

Out of the four basic functions of classroom evaluation formative and diagnostic evaluation are the concern of a teacher throughout the period of teaching where as placement evaluation may be most often required at the beginning of the session and summative evaluation at the end of the session. We have seen that purposes of both formative and diagnostic evaluation are likely to be better served by criterion referenced testing, therefore, it will be worthwhile to discuss it in some more detail in the next sub-section.

10.7.2 Criterion Referenced Testing and Mastery Learning

As explained earlier, criterion referenced testing is concerned with testing of desired learning outcomes. When you teach any subject area, you expect certain learning outcomes. You desire that every student should be able to achieve learning objectives up to a desired level. For example, a mathematics teacher, teaching at the secondary level desires that all the students in the class should know basic requirements of mathematics and develop computational skills to solve different types of sums relating to the Unit on 'Interest'. In other words, there are the "minimum learning competencies" which each student should develop and master. Thus, the student should be able to compute time, principal, simple and compound interest if he/she has to be promoted to the higher class. In order to know whether a student has achieved this minimum level of competency or not, you have to construct and administer a test so as to assess these minimum desired outcomes. Such type of testing is called 'mastery testing' which is concerned with testing of minimum desired levels in a specific area of learning. It is needless to say that as all students are expected to attain these minimum levels, mastery level testing will automatically be criterion referenced. Criterion determine the minimum levels which are expected to be achieved. Thus, the emphasis in mastery outcomes is to bring the students to a uniform level of performance on the minimum essentials of the course.

Mastery learning is an instructional strategy based on the principle that all students can learn a set of reasonable materials with appropriate instruction and sufficient time to learn. According to Block, Effhim and Burns (1989) "Mastery learning approaches ... provide adaptive educational settings that accommodate a diversity of student entry characteristics (abilities, skills, knowledge, attitudes and values), yet help each student succeed...". Objectives of mastery learning are typically concerned with relatively simple knowledge and skill outcomes. This makes it possible to analyze each intended learning outcome in detail and to describe the student's performance in very specific terms.

With mastery learning outcomes it is possible to specify all (or nearly all) the specific responses the students are expected to demonstrate at the end of instruction. This type of detailed specification makes it possible to place the learning tasks in a sequential order and to teach and test each specific task on a one to one basis. The limited nature of specific tasks and their detailed specification enables you to test achievement, by criterion referenced testing.
10.7.3 Mastery Learning Vs. Developmental Learning

Learning outcomes can generally be divided into two categories: one, those that should be mastered by all students and second, those that provide for maximum individual development. The outcomes of the first category are called mastery learning outcomes, whereas outcomes of the second category are called developmental outcomes. Having discussed mastery learning, let us now discuss developmental learning outcomes so that the distinction between the two becomes clear.

The developmental outcomes are concerned with those objectives that can never be fully achieved. Here, you can expect a varying degree of students' progress along a continuum of development. In arithmetic, for example, we might expect all students to master computational skills, but expect considerable variation in development of arithmetic reasoning ability. Therefore, the emphasis in developmental outcomes is to assist each student to achieve the maximum development. Thus, at the developmental level, instructional objectives are typically concerned with the more complex learning outcomes, such as understanding, application and thinking skills. For each general objective, many more specific learning outcomes can be listed. But the list can never be truly exhaustive, rather, we can only expect to have a representative sample of the specific objectives. Further, it is not expected, as is the case with mastery learning, that these outcomes will be taught and tested on one to one basis. Instruction at the developmental level emphasizes complex learning outcomes that result from the cumulative effect of many specific learning experiences. Since continuous development rather than mastery learning is intended, norm referenced testing is an appropriate means of describing students' progress.

10.7.4 Mastery Learning as a Classroom Instructional Strategy

So far we have divided learning outcomes into two categories: (i) mastery learning, and (ii) developmental learning. But mastery learning can also be viewed as an instructional strategy to be applied to all intended learning outcomes in classroom instruction. This is the approach being taken up by Bloom and others. Here, we briefly describe the Bloom's mastery learning strategy which can be applied to all phases of classroom instruction. The attempt is to bring all, or nearly all, students to a specific mastery level of learning by combining regular classroom instruction with feedback corrective techniques for overcoming individual learning problems.

The following steps outline the essential features of mastery learning strategy as proposed by Bloom:

- The course is sub-divided into a series of relatively small learning units each with their own objectives and assessment.
- The instructional objectives are identified and clearly specified for each unit. A wide range of learning outcomes are stressed and the objectives are defined in behavioural terms.
- Mastery standards are set for the objectives in each learning unit. This may be done in terms of percentage of test items, a student is expected to answer correctly. Generally, mastery level is set up at 80-85% correct
items. But this may be adjusted in relation to the task and various learning and testing conditions. As a guide you may use the performance level of students who have previously taken the course.

- The learning tasks within each unit are taught using regular classroom instruction.
- Diagnostic progress tests (formative tests) are given at the end of each learning unit. The feedback from these tests is used to reinforce learning of students who have mastered the task and to diagnose the learning errors of those who have not been able to achieve mastery.
- Specific corrective measures are taken up for each individual student who has not achieved mastery. Extra time is provided to such students.
- When all the units have been dealt with (steps 1-6 above), at the end of the course a test (summative test) is administered. The results of this test are used to assign grades.

Thus, in this section you have been acquainted with criterion referenced tests, norm referenced tests, mastery learning strategy, mastery learning outcomes and developmental learning outcomes.

Check Your Progress 2

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the unit.

1. What is a criterion referenced test? How is it different from norm referenced test?

2. What do you understand by mastery learning strategy?

3. What are mastery learning outcomes? How are these different from developmental learning outcomes?

10.8 CONSTRUCTION OF AN ACHIEVEMENT TEST

So far we have discussed the purposes of classroom evaluation and various types of tests which can be used for these purposes. For most of the time, you are concerned with evaluation of achievement of your students. In this section,
procedure for constructing an achievement test is discussed. The steps involved in construction of an achievement test are:

- Specification of instructional objectives
-Preparing design of the test
-Constructing blueprints
-Writing of questions

Let us discuss each of these steps separately in the following sub-sections:

10.8.1 Specification of Instructional Objectives

A test is supposed to measure some specific learning outcomes. The first and the foremost important step in planning of a test is identification and specification of these learning outcomes. A good test cannot be constructed unless the learning outcomes are specified and in behavioural terms, so that one to one correspondence can be established between the specific objectives and questions in the test.

Each subject has a different set of instructional objectives. In the subjects of science, social sciences and mathematics, the major objectives are categorised as knowledge, understanding, application and skill, while in languages, the major objectives are categorised as knowledge, comprehension and expression. Therefore, before constructing a test the instructional objectives desired to be tested by the test should be classified into these categories, specified in relation to the content of the test and stated in behavioural terms.

10.8.2 Preparing Design of the Test

Before constructing the test, several decisions have to be made by you. For example, what content is to be included in the test? What weightage is to be given to different components of the content (units and sub-units)? Which categories of the objectives (knowledge, understanding, application and skills) are to be tested? What weightage should be given to each of these categories? What type (essay, short answer and objective) or types should be used? If you decide to use all three or more than one type, you have to decide their respective weightage. A balanced test should contain an appropriate mixture of easy, moderately difficult and difficult questions. You have to decide the weightage of each of these questions. Should there be any option in the test or not? All these decisions have to be taken before actual construction of the test paper. These decisions are part of the design of the test. Thus, a design specifies weightages to different (i) units and sub-units of the course content (ii) instructional objectives (iii) types (or forms) of questions and (iv) levels of difficulty. Design also indicates as to whether there are any options in the test, and if so, of what nature.

10.8.3 Construction of Blue Prints

The next step is to prepare the blueprints. The policy decisions as reflected in the design of the test are translated into action through the blueprints. At this stage you as a test constructor decide as to how many questions are to be set for different objectives and also that under which unit a particular question is to be set. What will be the various forms of the questions? While preparing the
blue prints, you will know as to how many questions have to be taken from a particular unit, out of which how many will be testing which objective, what will be the form of each question and its difficulty level.

A sample form of the blue print design is given below as an illustration:

**Blue Print**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(i) **Weightage to constituent units**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Unit/Sub-unit</th>
<th>Marks (50)</th>
<th>%age of marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>10 (say)</td>
<td>20%</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All the units/sub-units, selected for the test are generally neither of equal length nor equally important from instructional or subject point of view. Some are more difficult as compared to others. Thus, all units may not be given equal weightage. In order to decide the weightage, the test constructor has to use his/her own wisdom, unless the examining body (board etc.) has already provided the weightage.

One guiding principle to decide the weightage could be the time spent on Unit A and on Unit B. Thus, the weightage of Unit A may be double of that of Unit B if time spent on Unit A is double to that of Unit B.

(ii) **Weightage to instructional objectives**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Objective</th>
<th>Marks (50)</th>
<th>%age of marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge</td>
<td>15 (say)</td>
<td>30%</td>
</tr>
<tr>
<td>2</td>
<td>Understanding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Skill</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Again, weightage to each objective has to be decided in relation to content area selected for the test. Generally, if we have selected a representative area of the total content, weightage to knowledge, understanding, and application/skills will be nearly equal.

After blue prints (1) and (2) above have been prepared, we can combine the two into one:
(iii) Weightage to types/forms of questions

As you know, there are various types of questions used in evaluation. Most popular among them are: long answer, short answer, very short answer and objective type. You have to give due weightage to each type of questions.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Form of Question</th>
<th>Marks for each question</th>
<th>No. of questions</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long Answer (LA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Short Answer (SA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Very Short Answer (VSA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Objective (Selection Type)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Long answer, short answer and very short answer are relative terms and could be determined only in relation to the content area/standard of the class. Actual length of a particular type of question and number of questions of that type have to be decided by keeping the total time in mind. It would, therefore, be advisable to budget time properly.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Type/Form of Question</th>
<th>Marks for each question</th>
<th>Expected length of each question (No. of words/sentences)</th>
<th>Expected time for each question (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Long Answer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Short Answer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Very Short Answer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Selection Type</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(iv) Weightage to difficulty level

The questions can be classified according to their difficulty level also. To cater to the needs of all the students we should include questions of different difficulty levels in our assignment tools. By doing so we shall be able to do justice to slow learners, average and fast learners.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Difficulty Level</th>
<th>Marks</th>
<th>Percentage of marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Difficult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Moderately difficult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Easy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Again, the terms used above (difficult, moderately difficult and easy) are in fact relative. No question can be called easy, only it may be easier as compared...
to other questions. However, as a guiding principle, following criteria could be used:

- An easy question is the one, which could be answered correctly by a student who has gone through the content once or twice, although not in a systematic manner.
- A moderately difficult question is the one, which could be answered correctly by only those students who have gone through the content in a very systematic manner.
- A difficult question is the one which could be answered correctly by only those students who have gone through the content in a systematic manner and their learning is well organized. Questions testing the deeper understanding and novel application generally fall in this category.

(v) Scheme of Options

Based on the parameters of evaluation, we should prepare a scheme of options.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Form/Type of Questions</th>
<th>Total No. Questions</th>
<th>Marks Allotted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In Q. Paper To be answered</td>
<td>In Q. Paper To be answered</td>
</tr>
<tr>
<td>1</td>
<td>Long Answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Short Answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>V. Short Answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Selection type</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One should refrain from providing options in the question paper. If an option has to be provided, one should try to make sure that questions between whom option is provided are equivalent as far as possible. They are from the same content area, test same objective, have same difficulty level and same form is used for both, otherwise the weightage allotted to each of these will be disturbed. Generally option is provided only in long answer type questions.

Now a comprehensive blueprint can be prepared, by combining all the given blueprints, as:

Blue Print

Exam.: ...................... Paper: ......................
Subject: ...................... Class: ......................
Unit: ...................... Time: ......................

Maximum Marks

<table>
<thead>
<tr>
<th>Electives</th>
<th>Knowledge</th>
<th>Understanding</th>
<th>Application</th>
<th>Skill</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of QS unit/Sub-unit</td>
<td>LA TM</td>
<td>SA TM</td>
<td>VSA TM</td>
<td>ST TM</td>
<td>LA</td>
</tr>
</tbody>
</table>

LA: Long Answer, SA: Short Answer, VSA: Very Short Answer, ST: Selection Type, TM: Total Marks, 1. Number of Questions
10.9 WRITING QUESTIONS

After preparing the blue prints, we start writing questions according to blue prints. For example, if we know from the blue prints, that for lesson 1, we have to prepare three objective type questions (supply type), one each testing K, U and A and two of them should be easy and one moderately difficult, we proceed accordingly.

After writing the questions in this manner, the questions of one type should be clubbed together and proceeded by specific instruction, e.g., if they are short answer type questions, indicate the length of expected answer in instruction. If there is any option provided, indicate that also.

Above, we have just outlined one possible way of constructing questions according to the blue prints prepared. You can follow any other order.

So far we have just named various types of questions: long answer type (which is also called essay type), short answer or very short answer type, objective or supply type. You will learn how to construct these types of items in Unit 12 (objective type) and Unit 11 (essay and short answer type) in detail. However, we briefly discuss these forms in the following sub-sections.

10.9.1 Long Answer Type

Essay type questions are still commonly used as tools of evaluation. There are certain outcomes of learning (e.g. organising, summarizing, integrating ideas and expressing in one’s own words) which can be best measured by essay type answer alone. The importance of essay type answer lies in the measurement of such instructional outcomes.

Essay type questions can be divided into two categories:

- Restricted response type
- Extended response type

**Restricted response type:** In this form of an essay type question, limit is imposed by restricting the content and length of the answer in the statement of the question. Restricted response type items are quite useful for testing those learning outcomes which require interpretation or application of outcomes.
**Extended response type:** In this form of an essay type question, no limit is imposed and student is given freedom to write as long an answer as he/she wants and organize the material according to his/her choice. There is enough freedom in such questions to select, integrate, evaluate and express one’s views. Such questions are useful for measuring broad abilities of students. However, these are not suitable for measuring specific learning outcomes.

Essay type questions are easy to construct but are difficult to score (for construction of a good essay type question, read Unit 11). Major drawbacks of such questions are (i) subjectivity in marking, (ii) entire content area can not be covered as the number of questions to be included in an achievement test is less, and (iii) extraneous factors, such as speed of writing, expression, etc., play an important role, thus making evaluation process less valid.

**10.9.2 Short Answer Type**

Short answer questions, if skillfully prepared, can test, with reasonable accuracy, many aspects of learning in terms of subject matter, abilities and skills. Answers to these questions are rather specific. Thus, they provide feedback to the teacher essential for effective teaching.

Although, there are many forms of short answer type questions, their common features are as follows:

- They usually take a short time (5 minutes approximately) to read and answer.
- They include some guidance or extent of the answer required, e.g., length of answer (number of words/sentences), space or specific instruction, such as “In not more than 20 words”.
- Answer is supplied by the student.

Short answer type questions can be grouped into two broad categories:

- Extended answer type
- Insert and completion type

Let us elaborate both the categories.

**Extended answer type:** The extended answer version includes questions which require students to write a brief description, draw a diagram/map, perform a calculation, write down definition/formula, etc.

They are recognized by the specific nature of the questions which reduce subjectivity in marking but do not eliminate it completely. It is still difficult to evaluate them with full objectivity.

**Insert and completion type:** The common form of completion question is one where a student is required to add one or two words to complete an incomplete statement correctly. A completion type is the question, where words are required at the end of questions, where as in insert type, words are required in the body of the statement. Use of insert type/completion type could also be made in incomplete maps/figures/drawings/diagrams/formulae/calculations, etc.
10.9.3 Objective Type

Objective type questions are characterized by their objectivity in scoring as there is one and only one correct answer to them. They are effective in testing specific/factual knowledge, where as ability to express in one’s own words and similar outcomes could never be tested by them.

Objective type questions can broadly be classified into two categories:

Supply type: In this form, the questions resemble short answer type, however, the document of objectivity has to be met at all cost.

Selective type: In this form students are not required to supply the answer. The answer is included in the question itself and students have to select the correct answer.

Objective type questions can further be divided into the following forms:

(i) True/False type
(ii) Multiple choice type
(iii) Matching type

Objective type items have been discussed in detail in Unit 12.

Check Your Progress 3

Notes: a) Write your answers in the space given below.

b) Compare your answers with those given at the end of the unit.

1. List the steps which are involved in the construction of an achievement test.

2. Name the different types of tests you administer in your class.

16° LET US SUM UP

1. You have studied in this unit that classroom evaluation can be used for four purposes, namely, (i) placement of student in a particular group (generally in the beginning of a session); (ii) finding means and ways of improving/enhancing the performance of the students; (iii) diagnosing the
difficulties faced by the students; and (iv) assessing the amount of learning which has taken place during the session or term.

2. ‘Formative evaluation’ is continuous evaluation of the student’s performance in order to monitor the learning progress during instruction. Its purpose is to provide continuous feedback to both the student and the teacher concerning learning successes and failures.

3. Summative evaluation is undertaken at the end of a course (or unit) of instruction in order to find out the extent to which learning objectives have been achieved.

4. Diagnostic testing is helpful in identifying the learning difficulties of students. It involves the use of specifically prepared ‘diagnostic tests’ along with other details about the learner(s).

5. Evaluation which is done for the placement of students in various groups or classes is called ‘placement evaluation’.

6. Criterion referenced tests are designed to distinguish the students who have and students who have not mastered the minimum essentials. The basic assumption in this type of testing is that the students are different primarily in speed with which they learn rather than the amount they can learn. Norm referenced tests, on the other hand, are designed to compare a student’s performance to the class or school average than to some predetermined criterion. This type of test assesses the status of students’ relative position to some identified group.

7. The steps involved in the construction of an achievement test are: specification of instructional objectives; (ii) preparation of the design of the test; (iii) constructing the blueprints; and (iv) writing of questions.

8. In designing an achievement test, weightage to different (i) units and sub-units of the course content; (ii) instructional objectives; (iii) types of questions; long answer, short answer, very short answer, objective type (selective type); and (iv) levels of difficulty, etc. are given due consideration.

10.11 UNIT-END EXERCISES

1. What is a norm referenced test? How is it different from criterion referenced test?

2. Discuss mastery learning as a classroom instructional strategy.

3. Select one unit from any subject of your choice. Construct an achievement test keeping in view the steps which have been discussed in this unit.

10.12 ANSWERS TO CHECK YOUR PROGRESS

Answers to Check Your Progress 1

1. Classroom evaluation can be used for (i) placement of a student in a particular group or section in the beginning of a session, (ii) finding means for improving the performance level of the students, (iii) diagnosing the
difficulties faced by the students, and (iv) assessing the amount of learning outcomes.

2. The evaluation of the students’ performance on continuous basis during the course of learning programme or instruction in order to monitor the learning progress is called formative evaluation. The summative evaluation is the evaluation undertaken at the end of a course (or unit) of instruction, in order to determine the extent to which learning objectives have been achieved.

3. Diagnostic tests are used to identify the learning difficulties of students for providing corrective and remedial programmes. These tests are helpful in determining the causes of learning problems so that a plan for remedial action is properly planned.

4. (a) Placement evaluation, (b) Formative evaluation, (c) Diagnostic evaluation, (d) Summative evaluation

5. a) (ii), b) (iii), c) (i).

Answers to Check Your Progress 2

1. Criterion referenced test is designed to distinguish the students who have and students who have not mastered the minimum essentials. It provides information about a student’s level of proficiency in or mastery of knowledge or some skill or a set of skills. Thus, a student’s performance is compared to a standard of mastery called a criterion. It also tells us whether a student needs more or less work on some skills or sub-skills. In this type of testing it is assumed that the students are different primarily in the speed with which they learn rather than the amount they can learn. Thus, the amount that is to be learned is fixed for all learners (students), but the rate of learning is allowed to vary. On the other hand, a norm referenced test is designed to compare a student’s performance to a norm, to the class or school average rather than to some pre-determined criterion. This type of test assesses the status of the students’ relative position to some identified group. It is a test in which the score acquires additional meaning by comparing it to the scores of students in an identified norm group. It assumes that the amount of material learned vary greatly from student to student, but expects all students to proceed through criterion level for a minimum performance is established in advance.

2. Mastery learning strategy is an instructional strategy to be applied to all intended learning outcomes in classroom instruction. It attempts to bring all or nearly all students to a specific mastery level of learning by combining regular classroom instruction with feedback corrective techniques to overcome individual learning problems.

3. Learning outcomes can generally be divided into two categories. First category comprises those learning outcomes which should be mastered by all students. These outcomes are called mastery learning outcomes. In the second category those learning outcomes which provide for maximum
individual development are included. These learning outcomes are called developmental learning outcomes.

Answers to Check Your Progress 3

1. The steps involved in the construction of an achievement test are: (i) specification of instructional objectives; (ii) preparation of the design of the test; (iii) constructing the blue prints; and (iv) writing of questions.

2. Compare your answer with types of questions given under section 10.9.

10.13 SUGGESTED READINGS