UNIT 15 EVALUATION OF LEARNING

Structure

15.1 INTRODUCTION

In unit 11 of this block, you have studied about the learning environment and different phases of designing instruction. In unit13, you have read the goals and objectives of the instruction. Once you have organized the learning environment and set the objectives of instruction, you will need to decide how to measure the learner's achievement and evaluate the success of instructional design. Therefore, conducting evaluation activities helps the instructional designer revise and improve the instructional process.

In this unit, we have focused on the purpose of assessing learning, evaluation measures, and types of evaluation and Kirkpatrick model of evaluation. Before going to discuss the purpose of assessing learning in section 15.2, you should have a clear idea about the difference between assessment, evaluation and tests.

In the field of open and distance education, we have to be continuously engaged in the decision-making process informed by relevant data, which is collected through various measuring devices. There are certain terms like assessment, measurement, evaluation and tests, which are generally used interchangeably, however, these terms have different connotations. The process of collecting, synthesizing, and interpreting information to facilitate the decision-making process is called *assessment,* while *measurement* is the process of quantifying or assigning a number to performance. For instance, a student may get 18 out of 20 in a mathematics test. Here, a numerical score is used to represent the individual's performance. *Evaluation* involves making judgments about the quality of the learner's performance. In the process of evaluation, the quality of a learner's performance is judged and compared with other group members. A *test* in contrast, is a formal, systematic and usually paper-pencil procedure used to gather information about the learner's behaviour. Test*s* are only one of the many types of information gathering device related to assessment. Other evidence gathering strategies may be an interview, observation, assignments, personal contact programmes, and project reports. Educational assessment is, therefore, an omnibus term, which includes all the processes

and activities reflecting and describing the nature and extent of human learning, its degree of correspondence with the aims and objectives of instructional design and activities, and pedagogical approaches designed to attain those objectives.

However, the goal of assessment does not end with providing feedback about the effectiveness of any instructional strategy, but is to help in the *decision-making process*. Assessment plays an important role in learning as the mechanism to take stock of the instructional interventions and efforts periodically and to assess the accomplishments and failures of instructional programme is inbuilt in the system of education whether face-to-face or distant. Assessment is a systematic, ongoing process of collecting, describing, and analysing information about, the students' progress or the instructional programme in relation to curricular expectations and instructional objectives. In other words educational assessment is the process of reporting the knowledge, attitude, beliefs and skills of students in measurable terms. Assessment can focus on an individual learner, the learning community (students, or other organised groups of learners), the institution or the educational system as a whole. In this unit, we shall discuss in detail the purpose of assessing learning, criterion and norm-referenced procedures of assessment and Kirkpatrick's model of evaluation.

15.2 LEARNING OUTCOMES

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

- reflect on the purpose of assessment of learning;
- differentiate between criterion-referenced and norm-referenced assessment;
- discuss various types of evaluation; and
- describe various levels of Kirkpatrick's model of evaluation.

15.3 PURPOSE OF ASSESSING LEARNING

As indicated in the previous section, assessment is the application of a systematic process of obtaining the results of the performance of an individual. The information regarding the performance of an individual is collected through a variety of sources and procedures like observation, verbal or written tests, interviews, focus group discussions, questionnaires, portfolios, etc. One point of caution here – don't confuse the term assessment with measurement because the measurement is the process of quantifying or assigning a number to an individual's performance. Generally, a numeral score is used to represent an individual's performance, and as clarified in the very beginning of this unit, there is a difference between assessment and evaluation also, as evaluation involves making a judgment about the quality of student's performance, or a possible cause of action, an assessment helps in making such judgments.

Assessment is an integral part of the teaching-learning process. In face-to-face as well as in distance learning situations, the assessment provides feedback to the teachers/ instructors about the progress of learners and helps them to adjust their instructional strategies according to the needs and levels of learners. Assessment is carried out for the following purpose:

- To diagnose learners' strengths and weaknesses;
- To monitor learners' progress;
- To assign grades to learners; and
- To determine instructional effectiveness.

The purpose of the assessment of learning is to provide feedback to both the teacher and the learner regarding the learner's progress towards achieving the learning objectives. This feedback helps to revise or modify the instructional strategies according to the needs and levels of learners. The assessment has a diagnostic purpose also, as it helps to identify the underachievers, and their learning difficulties as well as the overachievers, creative and highly intelligent learners. This type of information is very useful for placement and decision-making process and ensures the quality of instruction. Research evidence indicates that effective assessment inbuilt in the teaching-learning process with the active involvement of learners is a powerful means of improving learning and raising standards. The objectives of learning and assessment are closely associated, and the learning objectives determine the type of assessment procedure to be used. For example, if the objective is to demonstrate critical thinking skills, the assessment technique will be problem analysis. Similarly, if the objective is to test the vocabulary knowledge, the assessment technique will be a multiple choice test, and if the objective is to assess writing skills you may ask the learners to write a composition. In brief, there are three purposes of assessment of learning – *diagnostic, formative and summative*. The *diagnostic assessment* provides the teachers/instructors with the *understanding of the existing knowledge, skills, attitudes, interests, range of individual differences of learners as well as the strengths* and specific needs of an individual or the group. This type of assessment is helpful in planning the instructional strategies accordingly and is often referred to as pre-assessment because it is an assessment that takes place prior to the initiation of instruction.

Another type of assessment is a *formative assessment,* which is an ongoing assessment that provides feedback to both learners and teachers about the *progress* being made. It determines what the learners know and are able to apply, and points to the next steps for teaching and learning. It indicates whether learners are moving satisfactorily towards the instructional outcome the teacher is seeking to promote. This assessment keeps the teachers and learners focused on the purpose of learning and progress being made, that ensures effectiveness of instruction, which could be changed or modified depending on the progress of learners.

Summative assessment occurs at the end of a period of learning and provides an opportunity for the learners to demonstrate their achievement of the important objective of the programme addressed during a particular period. It is used in combination with data from formative assessment to evaluate a learner's growth relative to the purpose of the programme.

Besides the diagnostic, formative and summative purposes of assessment, which are focused on the learners' development, we are often interested to know the effectiveness of a particular instructional strategy compared to other instructional strategies. Therefore, one of the crucial purposes of assessment is to determine the effectiveness of the instructional strategy. In such types of assessment, the pre-test and post-test design is most popularly used to ascertain the effectiveness of the instructional strategy.

Therefore, the role of assessment in designing instruction are:

- Promote learning.
- Description of the existing competence and/or attitudes of students.
- Provide feedback about individual differences of learners on their level of attainment
- Indicate to learners, their conceptual difficulties and assist with improvement.
- Provide feedback to tutors/teachers on areas in which learners are experiencing difficulties and diagnose the need for change in instructional strategies.
- Judge the performance of learners using appropriate criterion-referenced or norm-referenced measures.

- Award marks and grades about the learning level of students.
- Determine whether a learner is sufficiently prepared in a subject area to proceed to the next level of instruction.
- Predict the future performance of students.

Check Your Progress 1

Note: i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of this Unit.

1. What is the difference between assessment, measurement and evaluation?

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2. Discuss role of assessment in designing instruction.

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3. Describe three main purposes of assessment in the context of open and distance education.

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15.4 Evaluation Measures

There are two distinctive and widely used strategies for assessment: ***norm-referenced and criterion-referenced***. The major difference between these two categories of tests lies in their intended purpose, content selection and scoring procedures, which guide the interpretation of test results.

15.4.1 Norm-referenced Tests (NRT)

A test is norm-referenced *"when the translated score tells where the person stands in some population of persons who have taken the test" (*Cronbach 1970). Most of the times we want to classify the learners as high or low achievers on the basis of their achievement scores. We, therefore, use norm-referenced tests to highlight the achievement differences between and among students. This type of test compares the performance of an individual to the performance of a group called the norm group. For instance, if an individual scores 75 marks in mathematics, how would you interpret his/her performance? 75 marks tell us nothing until you have some idea about the norm group. Again, 75 may be the highest or the lowest score of the norm group. Therefore, it is essential to have the scores of the norm group in the norm-referenced tests. You might have observed that in many institutions, grades are reported and these are often accompanied by labels or short verbal descriptions of the student's performance in relation to the group to which he/she belongs. Typically, a grade 'A' might be described as outstanding and 'C' as 'average', etc. Thus, the norm is the group and the assessment refers to it.

15.4.2 Criterion-referenced Tests (CRT)

In contrast, a **criterion-referenced interpretation** is absolute interpretation because it depends on the extent to which the criterion assessment domain represented by the test is actually possessed by the student. Criterion-referenced assessment tries to overcome the limitations of norm-referenced tests. There are individual differences in the rate and pace of learning. Some researchers who have developed an individualised system of learning emphasise that education which is truly oriented towards individual differences is one in which a majority of learners are able to master all the basic objectives, if provided time to do so. Norm-referenced assessment provides little information to the teacher/tutor about the time needed by different learners to master a given objective and it tells only the relative position of learner's performance, while the criterion-referenced test determines "..what test takers can do and what they know, not how they compare to others", (Anastasi,1997). CRT tells how well the learner is performing relative to a predetermined performance level on a specified set of educational goals. CRT helps to determine whether the learner has learned the material taught in a specific subject or course. Therefore, an English CRT would include questions based on what was supposed to be taught in English course only.

The table given below compares norm-referenced and criterion-referenced assessment procedure which will give you a very clear picture of these two assessment procedures.

	Norm-referenced (NR) Assessment	**Criterion-referenced (CR) Assessment**
Purpose	To make comparisons between learners and to relate these to the larger group.	To evaluate performance of a learner with an established criterion of performance.
Role	In selection, grading, competition and career guidance, comparison of institutions and relative performance of learners.	Evaluation of the absolute success of instruction, decision- making, individualised instruction and assessment of readiness.
Interpretation	If standardized, the score indicates the position of a learner in a large normally distributed group of scores.	Indicates the level of learner's mastery of a given objective.
Diagnostic Value	Helps in identification of relative performance of learners.	Helps in identification of actual strength and weaknesses in performance.
Reliability	Generally estimated using test retest, parallel form or homogeneity-methods.	Estimated by consistency with which the set of items of an objective classifies learners as masters or non-masters.
Validity	Estimated by reference to external criterion.	Estimated by comparing the items with the objectives of the test.
Types of items	Large number of different items designed to sample a range of skills and concepts.	Each objective has a number of very similar items designed to test a narrowly defined skill or concept.

Check Your Progress 2

Note: i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of this Unit.

Differentiate between norm-referenced and criterion-referenced tests with examples.

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15.5 TYPES OF EVALUATION

In the first section, you have learnt that evaluation involves making judgements about the quality of student's performance.

Evaluation is a process for judging the performance of an individual, product or process. There are three types of evaluation that can be considered while designing instruction. They are:

1) Student evaluation
2) Formative evaluation
3) Summative evaluation

Student evaluation is carried out to determine the success level of a student that he or she has achieved by participating in instruction. The success level is based on the extent to which a student is able to meet the instructional objectives. The results of student evaluation can be compared against a set of standards *(criterion-referenced)* as discussed in the previous section or to other learners *(norm-referenced)* (Ref. section 15.3).

Therefore, before we discuss the procedure of assessment of learning and performance of learners, it is important to note the following points:

- Assessment of learning should be a part of effective planning of instructional design, i.e., at the initial planning stage itself, you should decide how and in what procedure you are going to ascertain the achievement of various learning objectives. This planning should also include strategies to ensure that learners understand the objectives they are pursuing, and the criteria that will be applied in assessing their work as well as how learners will receive feedback, how they will participate in their assessment and how they will be helped to make further progress.
- Assessment of learning should focus on how learners learn.
- Assessment of learning should be recognized as central to the instructional design. The tasks and questions, therefore, should be so designed to prompt the learners to demonstrate their knowledge and skills, and help them to improve further.
- Assessment of learning should be sensitive and constructive.
- It should take into account the learner's motivation. Assessment that encourages learning, fosters learners' motivation by emphasizing progress and achievement rather than failure. This motivation can be sustained and enhanced by assessment methods that ensure and protect learner autonomy, provide some choice and constructive feedback, and create an opportunity for self-direction.
- Assessment of learning should promote commitment to learning goals and a shared understanding of criteria by which they are assessed. This can be ensured by engaging learners in peer and self-assessment.

- Provide constructive feedback to learners pinpointing their strengths and weaknesses and providing suggestions for improvement.
- Develop the ability among learners for critical self-appraisal and self-reflection for bringing quality improvement in the system.

Assessment of Students' Performance

By now you have become acquainted with the need and importance of assessment, and the measures of evaluation, it is time to focus on what and how to assess students' performance in distance learning. Generally, the performance of students in a traditional classroom setting is assessed through various teacher-made tests, while in distance learning the continuous assessment is an inbuilt and essential component of the teaching-learning system. In a traditional classroom setting, the teacher evaluates the performance informally in the classroom, and formally through periodic tests and home assignments, and the feedback is immediately provided to the students as they are continuously in contact with each other. But in a distance learning situation, teacher-assessment is no longer pre-eminent, there is no immediate feedback and reinforcement. The self-assessment of learners instead acquires the central stage, which is done through the self-check exercises in the text. Self-assessment questions are, therefore, one of the essential and crucial elements of distance instructional materials. Other forms of assessment techniques employed in distance learning are teacher/tutor assessment, computer assessment, and of course the terminal assessments as in the case of a traditional learning situation. Let us discuss these techniques further in detail.

Self-assessment: Self-assessment is a procedure of the assessment of a student's learning that is frequently utilized in the instructional materials of distance learning system with three major objectives: to ensure the understanding of learner of important issues being discussed; to reinforce understanding; and to stimulate, motivate and sustain learners' interest in the material. These questions are either short answer or objective types, and frequently occur in the body of self-learning study materials.

Teacher/Tutor Assessment: It is the most crucial form of the assessment of learning, which is carried through the evaluation of learners' assignment. The learners are required to write assignments periodically as part of the overall instructional procedure and submit to the tutor for assessment. These assignments may use essay types questions or short answer questions, and even may include some objective type questions. These questions test the understanding and application of learners. This type of assessment is a continuous and formative assessment of learning that helps not only in providing feedback to the learners about their understanding, but also helps in initiating dialogue and communication between learners and tutor, who are otherwise isolated from each other. Tutor assessment is also carried out in the study centers during personal contact programmes of various courses.

Computer-marked Assessment: It supplements and compliments tutor-assessment, however, it generally measures the knowledge and understanding of the learners. Various distance learning systems around the world are utilizing this assessment procedure more and more frequently to be continuously in touch with the learners and to monitor their performance.

Terminal Assessment: Examination plays a vital role not only in assessing the performance of learners in conventional system, but also in a distance learning. Terminal assessment basically measures the cognitive and application domain of the learner. This is the summative assessment that evaluates a learner's achievements and takes into account his/her performance in the assignments.

These are used prior to instruction, during instruction, and after instruction. The data collected during these phases provide information about the students. Prior to instruction, data are collected to determine what a student should know about the instructional objectives. Data collected during instruction, help to determine how a student is progressing. Data collected after instruction helps to determine what a student has achieved.

Formative Evaluation is carried out during instruction and provides data that indicate how a student is progressing. Student evaluation focuses on the student, formative and summative evaluation tend to focus on the instructional design process. (Brown & Green, 2016).

Formative evaluation is used throughout the instructional design process to collect data that can be used to provide feedback on how the process is going. The feedback allows to make improvement to the instruction before it is completely developed. Formative evaluation is used during designing instruction to ensure that the intervention being developed is tested and revised to meet the needs of the client. Therefore, formative evaluation is used as the intervention is forming (Green & Brown, 2016).

Summative evaluation is conducted at the end of the instructional design process to determine how successful the designing activity was carried out to meet the major goals. Therefore, summative evaluation is used to provide the whole picture of the design process. Summative evaluation takes place after an instructional intervention has been implemented.

15.6 KIRKPATRICK MODEL OF EVALUATION

Summative evaluation helps to ascertain the effectiveness of the instruction/training programme. One of the popularly used evaluation models has been proposed by Kirkpatrick in 1994 in his book *Evaluating Training Programmes,* wherein he outlined a four-level model of assessment of e-learning, e-training or blended instruction. These levels include the ones given below:

Level 1: **Reaction** of students about what they thought and felt about the training programme.

Level 2: **Learning,** i.e., the resulting increase in knowledge or capabilities.

Level 3: **Behaviour**, i.e., the extent of improvement in the behaviour, capability and implementation.

Level 4: **Impact,** i.e., the effect on the business or environment resulting from the trainee's performance.

Level 5: **Return on Investment,** i.e., the effect of training in improving quality and production.

Let us discuss each level in detail.

15.6.1 Level 1 Reaction/Satisfaction Level

The goals of any training programme can be achieved only if it comes to the expectations of learners and they feel satisfied by the services and inputs provided to them. Therefore, in this first level or step, the learners are asked to evaluate the training after completion of the programme. This type of assessment has the potential to provide very useful data pertaining to the satisfaction of learners on not only the overall effectiveness of the programme but also about various components like the instructors, the topics, presentation styles, time schedule, adequacy of content coverage, use of audio-visuals, etc. Each of these components may further be broken into various sub-components, such as, you may ask the learners to evaluate specific characteristics of presentations,

etc. This level, therefore, relies on the measurement of attitudes of learners towards various components of the training programme and is usually measured with the help of a questionnaire. You may include questions related to the following.

- Relevance of the objectives.
- Ability of the course to sustain the interest of learners.
- The amount and appropriateness of interventions and interactive exercises.
- The ease of navigation.
- Perceived value and transferability in the workplace.
- Important strengths and weaknesses of the programme.

With technology-based training, the questionnaire can be delivered and completed online or e-mailed to the learners and is the most popularly used device of assessment.

Level 1 assessment tells us about the satisfaction and attitude of learners and is very important for other levels to occur. Learning (level 2) and transfer of learning (Level 3) cannot take place unless the learner has a positive attitude and feels satisfied with the services provided to him/her. It also helps the course planners to modify/change or remove unpopular programmes and tells about the strength and weaknesses of various components, which can be rectified accordingly. However, you can get more accurate and true responses if the learners are not asked to reveal their identity through their names. This will not only ensure anonymity, but they will also be more honest in their answers. You can use a rating scale or open-ended questions depending upon the nature of information you are trying to seek. Level 1 has the following advantages:

- You can have an idea about the learners' perception of the training programme.
- It may indicate that some important content areas are not covered in the training programme.
- It may tell you about the level of involvement and engagement of learners in the training events.
- It can provide information about the feedback and evaluation of the specific components of the training programme as well as the overall satisfaction level of learners with the programme. This may help in the improvement and removing the deadwoods from future training programmes.

15.6.2 Level 2 Learning Level

The intention of this level is to ascertain whether learning objectives have been achieved. This level tests whether learners have actually learned the knowledge, skills, and attitudes they were supposed to acquire through the programme. The level two evaluation should, therefore, be done immediately after the training event. You may use pre-test and post-test design to ascertain the effect of training on the knowledge, skills and attitude of learners. Knowledge is typically measured by an already available test or a teacher made achievement test, which may be either criterion-referenced or norm-referenced. Skills are measured with the help of performance tests and attitudes are measured with the help of questionnaires. The advantage of this level is that it provides feedback and formative evaluation information to the course designer about the programme that can be used to improve it further.

15.6.3 Level 3 Behaviour Level

Learners generally score well on post-test as the test is given immediately after the instruction or training. But the programme can be considered effective only if the change brought in the learner's knowledge, skills and attitude is sustainable and they are able to use it in their day to day practice. The level three evaluation, therefore, involves measuring the transfer of knowledge, skills and attitudes from the training context to the workplace. However, it does not mean that level one and two are less

important. The learners should have a positive attitude towards the programme (Level 1), and they need to learn the material (Level 2 outcome). But for maximum transfer of learning, the learners should get a conducive climate also, besides the effectiveness of training. Therefore, the workplace factor plays an important role in the effectiveness of training as the training factors. So, how can we design a level three evaluation? Kirkpatrick suggests the following:

- Use a control group as far as possible.
- Allow time for a change in behaviour to take place.
- Evaluate pre and post programme and use the strongest design that is feasible.
- Try to get responses from all the learners.
- Collect relevant information from various sources.
- Keep cost-benefit in mind.

The Level 3 evaluation measures actual behaviour on the job instead of just measuring the reaction of learners. Level 3 outcomes are essential for Level 4 outcomes, i.e., they are intervening variables that lead to Level 4 outcomes. But it is intrinsically useful also. In some situations the outcomes of the first three levels are sufficient indicators of the success of the instructional programme.

15.6.4 Level 4 Impact Level

The fourth step of the Kirkpatrick model is to evaluate the impact of the instructional programme, i.e., it attempts to assess training in terms of business results. This level measures the success of the programme in terms of increased production, improved quality, decreased costs, increased sales, and higher profits or return on investment. In other words, this level measures the bottom-line result of enterprise learning and tries to ascertain whether the learning has a positive effect on the institution (Kirkpatrick, 1994). Kirkpatrick recommended the use of experimental design for this level of evaluation, as well as allowing sufficient time for the results to be achieved. Pre-test and post-test design has been suggested by Kirkpatrick. A cost-benefit analysis should also be done as in the previous level of evaluation.

The table given below presents the model in a grid form.

Level	*Evaluation Type*	*Evaluation Description & Characteristic*	*Evaluation Method/ Tool*	*Relevance and Practicability*
1	**Reaction**	Perception of learners about the programme	Happy sheet, feedback forms, verbal reactions, post training survey/ questionnaire	Inexpensive to gather data, easy to obtain information.
2	**Learning**	Measurement of increase in knowledge base	Tests, questionnaires, interview, observation	Easy to design, score and in quantify, highly relevant.
3	**Behaviour**	Measurement of transfer of learning, sustainability of change	Observation, interview	Measurement of change in behaviour requires cooperation of various functionaries of the organisation.
4	**Impact**	Measurement of the effect of instruction on the environment.	Pre-test and post-test experimental designs, & cost benefit analysis	Provides feedback of the overall effectiveness of the instructional programme. Process must contribute clear accountability.

It is clear from the above mentioned description that the Kirkpatrick's model of evaluation provides both formative and summative feedback, which may help in improving the quality of instructional strategies and methodologies.

15.6.5 Level 5 Returns on Investment

Jack Phillips, and later on Kirkpatrick himself, referred to a fifth model of evaluation, i.e., Return of Investment level. This level reflects the concern of failure of training programmes to deliver the desired results and the concern for accountability. The Kirkpatrick model did not focus directly on the ROI issues. Kirkpatrick's four levels are associated with the results of training in the form of increased motivation, reduced absenteeism, increased production, quality improvement, and even cost reduction, etc. The fifth level tells us the cost of the programme in terms of its capacity to represent the return on investment in training programme. In order to obtain a true ROI evaluation, the monetary benefits of the programme are compared to the cost of implementation or the value of investment. This level of evaluation is developed by collecting level 4 data, converting it to monetary data and then comparing it to the cost of programme to represent the return on training investment. Some institutions at the international level are utilizing this step to calculate the cost of new courses. The ROI formula is developed for this purpose and evaluation is conducted in all five levels. The formula is given below:

$$\text{ROI } \% = \frac{\text{Benefits} - \text{Cost}}{\text{Costs}} \times 100$$

Check Your Progress 3

Note: i) Write your answers in the space given below.
ii) Check your answers with the answers given at the end of this Unit.

1) Discuss various types of assessment of learning in distance education.

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2) Discuss various levels of Kirkpatrick's model of evaluation.

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15.7 LET US SUM UP

Educational assessment is an omnibus term, which includes all the processes and activities reflecting and describing the nature and extent of human learning, its degree of correspondence with the aims and objectives of instructional design, and activities and pedagogical approaches designed to attain those objectives. There are certain terms like assessment, measurement, evaluation and tests, which are generally used interchangeably. However, these terms have different connotations. The process of

collecting, synthesizing, and interpreting information to facilitate the decision-making process is called *assessment.* While *measurement* is the process of quantifying or assigning a number to performance. *Evaluation* involves making judgments about the quality of learner's performance. In the process of evaluation, the quality of a learner's performance is judged and compared with other group members. A *test* in contrast, is a formal, systematic and usually paper-pencil procedure used to gather information about the learner's behaviour.

Assessment is an integral part of the teaching-learning process. In face-to-face as well as in distance learning situations, the assessment provides feedback to the teachers/ instructors about the progress of learners and helps them to adjust their instructional strategies according to the needs and levels of learners. Assessment is carried out for the following purpose:

- To diagnose learners' strengths and weaknesses;
- To monitor learners' progress;
- To assign grades to learners; and
- To determine instructional effectiveness.

There are two distinctive and widely used strategies for assessment: ***norm-referenced and criterion-referenced***. The major difference between these two categories of tests lies in their intended purpose, content selection and scoring procedures, which guide the interpretation of test results. In this unit we have also focused on various techniques of evaluation of learning as well as the evaluation of the learner's performance.

Towards the end of this unit, we have explained the Kirkpatrick's evaluation model and its different levels.

15.8 ANSWERS TO CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check Your Progress 1

1) Measurement is the process of quantifying or assigning of a number to performance of a student. Evaluation involves making judgements about the quality of the students' performance.

   The process of collecting and interpreting information to facilitate decision-making is called assessment.

2) Please refer to section 15.2.

3) Please refer to section 15.2.

Check Your Progress 2

Please refer to section 15.3.

A test is Norm-referenced *"when the translated score tells where the person stands in some population of persons who have taken the test". (Cronbach, 1970)*

A criterion-referenced interpretation is absolute interpretation because it depends on the extent to which the criterion assessment domain represented by the test is actually possessed by the student.

Check Your Progress 3

Please refer to sections 15.4 and 15.5.

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