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School of Education

BES-127
ASSESSMENT FOR LEARNING

Block

1

EVALUATION IN TEACHING-LEARNING PROCESS

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BES 127   ASSESSMENT FOR LEARNING

Introduction to the Course

The Course, BES-127, '**Assessment for Learning**', consists of four Blocks comprising seventeen Units. The Course deals with important components of assessment and evaluation. The knowledge and understanding about various aspects of learner's assesement and their application for classroom teaching-learning, will help both the learners and the teachers. The emerging perspectives of assessment like, the constructivist perspective of learning and assessment has been discussed in this course. The concepts of 'assessment of learning' and 'assessment for learning' are also elaborated in the Course in the context of assessment practices in schools. This Course also discusses the skills and practices required for selecting, developing and organizing evaluation techniques and tools. These techniques and tools will help you to evaluate the learner's performance effectively.

The Block-1, '**Evaluation in Teaching-Learning Process**' explains the concept of assessment and evaluation and its significance in teaching-learning process. The emerging perspectives of assessment such as: behaviorism, cognitivism, constructivism and so on have been discussed in this Block. The Philosophy and the practices of the emerging concept of assessment for learning has been discussed with suitable illustrations in this course. Various issues, concerns, and emerging trends and approaches in assessment and evaluation have also been discussed in this Block.

Block 2 titled '**Techniques and Tools of Assessment and Evaluation**' provides different types of techniques and tools used for assessment and evaluation. The criteria of a good tool have also been discussed in this Block. In this course attempt has been made to provide an eye-view of the various techniques and tools so that you can select any techniques and tools suitable for your uses.

Block-3, titled: '**Learner's Evaluation**' elaborates the commonly used tools in a school and suggest improvement in the existing practices adopted for their preparation and use. Importance has also been laid on new practices, like continuous and comprehensive assessment, diagnosis related to achievement and remedial measures, preparing achievement test, etc. in this Block.

The Block-4 of this Course, '**Analysing and Interpreting Learner's Performance**' deals with interpreting the performance of the learners quantitatively and qualitatively by using various statistical techniques. Popularly used statistical techniques such as tabulation and graphical presentation of data, measures of central tendency and dispersion, correlation, and normal probability curve have been discussed in this Block. Besides these, the Block discusses practical work/ activities, which you as a teacher is expected to do and submit in the form of assignments.

BLOCK 1 EVALUATION IN TEACHING-LEARNING PROCESS

Introduction to the Block

This Block consists of four Units dealing with the role of assessment and evaluation in the teaching-learning process. The first Unit, '**Concept and Purpose of Evaluation**' deals with the conceptual understanding of measurement, assessment and evaluation. It further elaborates the need, purpose and process of assessment and evaluation used in schools. One of the important functions of assessment, i.e. 'assessment for enhancement of learning' is also discussed in the Unit with examples. Further the Unit elaborates the terms such as 'Appraisal', 'Test' and 'Examination' that are used for explaining the concept of Assessment and Evaluation.

Second Unit of this Block, titled, '**Perspectives of Assessment**' elaborately discusses the concept of behaviorist, cognitivist and constructivist perspectives of learning and assessment. While discussing behaviourist and cognitivist learning approaches, the importance of the use of constructivist perspective of teaching and learning is also discussed in this Unit. The conceptual difference between assessment of learning and assessment for learning is also elaborated with examples.

The third Unit of this Block, titled, '**Approaches to Evaluation**' deals with the types of evaluation, such as placement, formative, diagnostic and summative used in school situation. The advantages and the limitations of external and internal evaluation practices in schools have also been discussed. The concept and uses of norm-referenced and criterion-referenced evaluation have also been discussed with exemplifying the construction of criterion-referenced tests.

The fourth Unit, '**Issues, Concerns and Trends in Assessment and Evaluation**' deals with recent developments and practices in assessment in the schools. The emerging trends in assessment such as Choice Based Credit System (CBCS), question bank, marking and grading system, semester system, open book examination system, on demand examination, and online examination have also been discussed in this Unit.

UNIT 1 CONCEPT AND PURPOSE OF EVALUATION

Structure

1.1 INTRODUCTION

Reports of allmost all the committees and commissions on education formed in India after independence, have talked about reforms in the examination system. The National Curriculum Framework-2005 has put forth its suggestions on evaluation reforms in Indian school system. You might be aware that implementation of Continuous Comprehensive Evaluation (CCE) was visualized as a revolutionary step towards reform in the examination system, though it became an issue of debate and recently, CBSE has reverted back to the traditional system of examination (refer Unit 12, Block 3 of this course).

Keeping the issues cited above, this Unit basically deals with the dimensions of assessment and evaluation being practiced in Indian school system. Being the introductory Unit of this course, it basically focuses on explaining the key concepts, like measurement, assessment, and evaluation. This unit will make you understand how assessment and evaluation is part of teaching-learning process, i.e. assessment as a part of teaching-learning process and evaluation as the end product of learning. We shall also explain as to how evaluation is associated with value-judgment and thus is differentiated from assessment. Various terms,

like tests, examination, appraisal, etc. which are being used commonly in the education system, has also been discussed in this Unit. This unit will also help you to understand various perspectives of assessment that has been discussed in Unit-2 of this Block.

1.2   OBJECTIVES

After completion of the Unit, you should be able to:

● define the concept of assessment and evaluation;

● differentiate among measurement, assessment, and evaluation;

● explain assessment and evaluation as a part of the teaching-learning process;

● discuss the role of assessment in enhancing learning;

● associate evaluation with value-judgment; and

● explain the terms tests, examination, appraisal, quantitative and qualitative description, and value judgment used in assessment.

1.3   BASIC CONCEPTS

For every teacher, it is important to understand the basic concepts of assessment and evaluation. You might have observed that many teachers use measurement, assessment, testing and evaluation interchangeably, but these terms have their specific meaning and significance. As a student teacher, it is therefore essential for you to understand the meaning, purpose and characteristics of all these terms so that you can use them appropriately. Let us discuss each term in detail.

1.3.1   Measurement

As a student teacher at the secondary level, you are expected to understand the meaning of the term 'measurement. "**Measurement is a process of assigning numbers to individuals or their characteristics according to specific rules.**" (Eble and Frisbie, 1991, p.25). This is very common and simple definition of the term 'measurement'. You can say that measurement is a quantitative description of one's performance. Gay (1991) further simplified the term as *a process of quantifying the degree to which someone or something possessed a given trait, i.e., quality, characteristics, or features.*

You can generalize these definitions as measurement provides a quantified description of any trait, characteristics, or ability. For example, Mohan has scored 58 marks in a particular examination and Ahmad has scored 59, their individual scores are the measurement of their performance on a particular test. Similarly you can use the examples of weight and height of learners in your class. If, you measure their height in centimeters and weight in kilograms, you are assigning numerals (i.e. 125 cm. or 45 kg.) using some specific rules (i.e. height in centimeters and weight in kilograms). You can perform the following activity in your class to understand the concept of measurement in a better way:

S. No.	Characteristics/ trait	Assigned numerals	Associated Specific Rule

Activity 1

Identify few characteristics/traits of your learners in terms of their height, weight, achievement score, intelligence scores, etc. and complete the following table.

If you analyze definitions of measurement given above (in the first paragraph of section 1.3.1 of this Unit), you may conclude with the following characteristics of measurement:

- Measurement assigns a numeral to quantify certain aspects of human and non-human beings.

- It is numerical description of objects, traits, attributes, characteristics or behaviours.

- Measurement is not an end in itself but definitely a means to evaluate the abilities of a person in education and other fields as well.

- Nature of measurement and assessment vary for various traits or attributes of the students to deal with.

By now you might have understood the concept of measurement. Let us discuss the scales of measurement :

Scales of measurement : Whenever we measure anything, we assign a numerical value. This numerical value is known as scale of measurement. *A scale is a system or scheme for assigning values or scores to the characteristics being measured (Sattler, 1992).* Like for measuring any aspect of the human being we assign a numeral to quantify it, further we can provide an order to it if we know the similar type of measurement of other members of the group, we can also make groups considering equal interval scores within the group. These are called as measurement in different scales. There are mainly four scales of measurement, namely;

- **nominal**

- **ordinal**

- **interval and**

- **ratio**

These scales have their distinguished characteristics and are hierarchical in nature (see Table-1), i.e. if you progress from nominal to ratio, you will be able to do more sophisticated measurement with more and finer details. The table given below summarizes all the levels of measurement. Let us discuss each scale with appropriate examples.

Nominal scale : In nominal scale, a number is assigned for characterizing the attribute of the person or thing. That caters no order to define the attribute as high-low, more-less, big-small, superior-inferior etc. In nominal scale, assigning a number is purely an individual matter. It is nothing to do with the group scores or group measurement. It is therefore, measurement in nominal scale has limited meaning, even if some experts do not consider it as a measurement. As discussed earlier, any student achievement related scores (scores in subjects) or other measurement like height, weight, etc. are the examples of nominal measurement. Statistics such as frequencies, percentages, mode, and chi-square tests are used in nominal measurement.

Ordinal scale : Ordinal scale is synonymous to ranking or grading. It includes the characteristics of a nominal scale and provides an order to the measurement, like; when we know the achievement scores of students in a group, we can arrange them either in ascending (lowest to highest) or descending (highest to lowest) order. We can also interpret the result like; who stood first, second, 10th in the group, even the last one in the group. In ordinal scale, we can use the statistics such as median (measures of central tendency), quartile and percentile measures, correlation in rank difference method, and non-parametric tests.

Interval scale : Interval scale carries all the characteristics of earlier scales like nominal and ordinal and added with an arbitrary zero point. That is, there is no absolute zero-point or true zero point. In this scale, we can group the scores into equal intervals like, scores within the intervals of : 0-5; 5-10; 10-15; 15-20; 20-25; 25-30 etc. This is also called as equal interval scale as the size of the classes are equal, i.e. size of the class 0-5 is 5; 5-10 is 5; 10-15 is 5; 15-20 is also 5. As there is no absolute zero point in this measurement and the existing zero value is an arbitrary one, that's why all types of measurement done in education and social sciences are usually done by the interval scale. The statistics like mean, standard deviation, product moment correlation, t-test and f-test can be used in interval scale.

Ratio scale : Ratio scale is called as the highest scale in measurement. It carries all the characteristics of earlier discussed scales with a true or absolute zero point. As there is absolute zero point in this measurement, we can say that zero height means no height. But in the case of interval scale, we can not say that zero intelligence means no intelligence. All types of measurements conducted in Physical Sciences such as Physics, Mathematics, etc. are done by ratio scale. Ratio scale are almost non-existence in psychological and educational measurement except in the case of psycho-physical measurement. All mathematical applications – addition, subtraction, multiplication and division can be done in ratio scale. All statistical techniques are permissible with ratio scale.

Let us try to understand it in more detail with the help of Table 1 given below.

Table 1 : Scales of Measurement

Level	What is it?	Example	Possible Operations
Nominal	It classifies people or objects into various categories, classes or sets. One set or group is assigned one number for a common trait/ characteristics among all members of the group/set.	Male and female, assigning numbers like 1 for education, 2 for psychology, 3 for commerce, etc.,	These numbers could not be added, sub- tracted, ranked, or manipulated statisti- cally.
Ordinal	It ranks people or objects according to the amount of a characteristic they have.	Ranking of learners according to their height from tallest to shortest, or on some trait from most to least or vice-versa.	Percentile ranks, age equivalence or grade equivalence can be used.
Interval	It ranks people or objects on a scale of equal units.	Achievement, perfor- mance, IQ score, etc are examples of this measurement. (IQ score 100 does not mean that this person is two times more intelligent than a person with IQ score 50).	Basic mathematical operations can be used for manipulation, which was not pos- sible in previous two scales. Most statistical formulas can be applied on such measurement.
Ratio	It has all the proper- ties of interval along with an absolute (true) zero point on scale.	Measurement of height, weight, speed, distance, etc. A distance of 100 meters is exactly twice to 50 meters.	All mathematical and statistical operations are possible here as it has a true zero point.

Activity 2

Enlist few characteristics under each of the four levels of measurement, which you will measure among your learners.

Nominal :

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Ordinal :

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Interval :

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Ratio :

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Process of measurement : Measurement is a process which involves certain common steps in all the fields including education. As a teacher you should be aware of this process so that you can follow the same during teaching-learning process. Measurement process involves three steps as follows :

Figure 1:   Process of Measurement
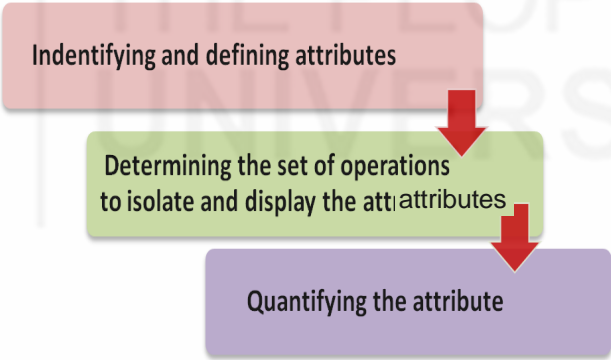
(Source : Thorndike and Christ, 2010)

Let us discuss each step in brief.

Step-1 : Indentifying and defining attributes

As a teacher it should be clear to you that you never measure any thing or person, you always measure a quality or attribute of that thing or person. You may measure height or intelligence level of a person, temperature of boiling water, etc. there may be some attributes which are easily observable and measurable where as there may be some complex or abstract properties also, which are commonly termed as **constructs**. When you are going to measure any abstract construct like intelligence, honesty, etc. you have to identify certain characteristics

which you will use to quantify these constructs. For example, for measuring intelligence, you may measure performance of an individual on various abilities as described by multiple intelligence theory.

Step-2 : Determining the set of operations to isolate and display the attribute

The second step is to develop a procedure to find out and invent a set of operations which will isolate the attribute of interest and display it. There are attributes like length or weight for which you can use well standardized scales, but if you are measuring intelligence, or honesty or any dimension of personality, you have to determine the set of operations; this is called operationalizing the attribute or operational definition. For example, operational definition of intelligence may be like 'in this measurement, IQ refers to the score obtained by an individual on a standard test XYZ.'

Step-3 : Quantifying the attribute

The third step of the measurement process is assigning numerals to quantify the aspect of measurement or the attribute. This quantification helps in communicating about the attribute more efficiently and precisely. If quantification has been done according to a set of rule (this is known as scale), you can apply mathematical operations for making the measurement more meaningful. For example, you can decide heights will be measured in centimeters or inches, in pounds or kilograms, etc. or you will use a five point or three point scale to measure any behavioral attribute.

Measurement helps you in assessment and evaluation. In coming sections, we will discuss about linkages between all these three.

Check Your Progress 1

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

(b) Compare your answers with the ones given at the end of this Unit.

1. What are the levels of measurement?

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2. Why do you measure some attributes required to be defined operationally?

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1.3.2 Assessment

Let us move towards another key concept i.e. assessment. Some teachers use assessment and evaluation interchangeably. For example, when you think of CCE, it is continuous comprehensive evaluation but under CCE you have to undertake formative and summative assessment. Therefore, it is essential to clarify the doubts and understand the term 'assessment'. Let us understand the term assessment clearly so that we can differentiate between the two.

Assessment is **"a systematic procedure for collecting information that can be used to make inferences about the characteristics of people or objects** (AERA, et. al., 1999)"**. Assessment is referred as "a process of collecting evidence and making judgments relating to outcomes". It is said that assessment has a narrower meaning than evaluation but a broader meaning than measurement.

In its derivation, the word assess means "to sit beside" or "to assist the judge", it reflects that assessment is a process of gathering data and fashioning them into an interpretable form; judgment can be made on the basis of this assessment.

It you think of classroom assessment, you can say that when a teacher observe the learners in the process of learning, collect feedback on their learning, improve his/her teaching-learning strategy to facilitate them for maximum learning, s/he is doing assessment.

In connection to measurement, you can say that measurement is a process of quantifying attributes, and assessment is the process of collecting the quantified information about the attributes and interpreting it. Let us see the following example:

Ms. Preeti is a secondary school teacher. She conducted a unit test in all the sections of class IX in her school. It was a 20 marks objective type test. She collected and assessed all the answer scripts. She compiled the scores class wise and also made some groups like above average, average and below average. She returned the answer scripts with remarks like your performance is average/below average/above average. She also identified some topics where a large number of learners were not responded well or made mistakes. She decided to provide additional activities for those topics in order to facilitate learners.		
Based on above passage, mark in front of following statement, weather it was measurement or assessment?		
1.	Preeti assig ned 1 mark for correct answer and 0 for the wrong one.	
2.	Preeti calculated total score of each learner.	
3.	Preeti categorized learners' performance as below average, average and above average.	
4.	Preeti indentified the topics/areas where learners have not performed well.	

In the above example, you can easily identify that statements 1 and 2 belong to measurement and statements 3 and 4 belong to assessment.

Assessment is considered as a part of the teaching-learning process and often categorized as *assessment of learning, assessment for learning and assessment as learning*. Let us elaborate each category to understanding it.

Assessment of learning: It basically focuses on learners' achievement against some predefined outcomes and standards. Sometimes, it is referred to as summative assessment. Generally, teachers undertake this type of assessment at the end of a Unit or term or semester in order to grade or rank the learners.

According to New South Wales Educational Standards Authority (NSWESA), assessment of learning:

● is used to plan future learning goals and pathways for students;

● provides evidence of achievement to the wider community, including parents, educators, the students themselves and outside groups; and

● provides a transparent interpretation across all audiences.

Assessment for learning is practiced by teachers during their teaching-learning process. Its main objective is to improve teaching and enhance learning by facilitating learners. It takes place along with teaching-learning process in the classroom. It is more frequent and mostly unstructured, also referred as 'formative assessment'.

According to NSWESA, assessment for learning:

● reflects a view of learning in which assessment helps students learn better, rather than just achieve a better mark;

● involves formal and informal assessment activities as part of learning and to inform the planning of future learning;

● includes clear goals for the learning activity;

● provides effective feedback that motivates the learner and can lead to improvement;

● reflects a belief that all students can improve;

● encourages self-assessment and peer assessment as part of the regular classroom routines;

● involves teachers, students and parents reflecting on evidence; and

● is inclusive of all learners.

Assessment as learning: When learners are asked to assess their performance on their own, they use various assessment techniques and strategies to assess themselves. This practice helps learners to identify their knowledge gaps, adopt appropriate learning strategy and use assessment as tool for new learning.

According to NSWESA, assessment as learning:

● encourages students to take responsibility for their own learning;

● requires students to ask questions about their learning;

● involves teachers and students creating learning goals to encourage growth and development;

● provide ways for students to use formal and informal feedback and self-assessment to help them understand the next steps in learning; and

● encourages peer assessment, self-assessment and reflection.

We will discus them in detail in Unit-2 of this Block.

Assumptions of assessment : In educational assessment, there are some underlying assumptions, which you should know as a teacher so that you can do justice with your learners when you plan the assessment. Cohen and Swerdlik (2002) have suggested following assumptions:

- **Psychological and educational constructs exist** that is there are always some traits or characteristics which are to be measured.

- **Psychological and educational constructs can be measured.** There is a very quote of Cronbach (1990), which states "*if a thing exists, it exists in some amount. If it exists in some amount, it can be measured.*"

- **Although we can measure constructs, our measurement is not perfect.** Most of the educational and psychological constructs are related to human behavior which can not be measured accurately i.e. with 100% accuracy. There is always some chance of error during measurement.

- **There are different ways to measure any given construct**, for example, one can assess intelligence through a paper-pencil test or a performance test. Achievement can be measured with objective type tests, short answers type or essay type. It may be written test or oral presentation also.

- **All assessment procedures have strengths and limitations.** This means all assessment techniques and procedures which a teacher adopt are not perfect. Every procedure has its strengths and limitations. One procedure can measure one dimension whereas other can measure one or many dimensions together.

- **Multiple sources of information should be part of the assessment process.** In educational assessment, multiple sources of information should be used to arrive at a decision. Any important decision should not be based on result of any one test.

- **Assessment can provide information that helps you to make better decisions**. If a teacher/educator use appropriate tool/strategy to assess learners' performance or any particular trait, its outcome helps him/her to make a better decision about the learners.

- **Assessment can be conduced in a fair manner.** Though some people may not agree with this assumption. This may be true that assessment can be conduced with honesty and sincerity. If you as teacher use well developed test and adopt suggested administrative procedure properly, there are high chances of fairness. It mostly depends upon the test administrator who conducts the assessment.

- **Testing and assessment can benefit our educational institutions and society as whole.** Many teachers may argue that testing and assessment should be out of the system but you will agree that assessment help you and your learners in teaching and learning. A teacher should adopt flexible approach while assessing keeping in mind the nature and need of the content, learner and context.

Activity 3

Critically analyse the assumptions stated by Cohen and Swerdlik (2002).

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Components of Assessment

Assessment as system has certain components or variables which help us to decide as to what kind of assessment strategy we can use. Harlen (2007) has suggested following components or variables of assessment as a system:

Figure 2 Components and variables of an assessment system (adopted from Harlen, 2007)

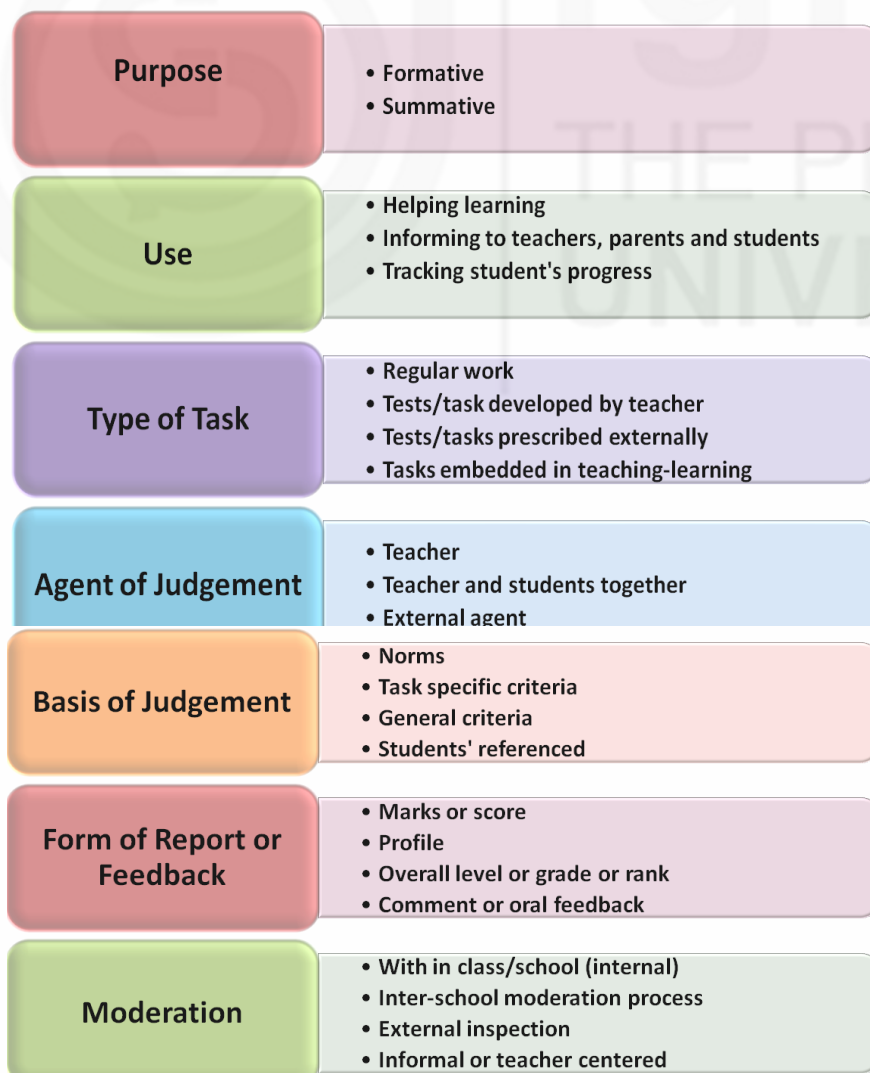| Purpose	• Formative • Summative
Use	• Helping learning • Informing to teachers, parents and students • Tracking student's progress
Type of Task	• Regular work • Tests/task developed by teacher • Tests/tasks prescribed externally • Tasks embedded in teaching-learning
Agent of Judgement	• Teacher • Teacher and students together • External agent
Basis of Judgement	• Norms • Task specific criteria • General criteria • Students' referenced
Form of Report or Feedback	• Marks or score • Profile • Overall level or grade or rank • Comment or oral feedback
Moderation	• With in class/school (internal) • Inter-school moderation process • External inspection • Informal or teacher centered

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Figure 2 shows the components of assessment which help us to decide the use of assessment strategies in different situations. As depicted in Figure 2, the first and foremost component is to find out the purpose for which the assessment will be used. If it is for formative purpose, accordingly, suitable techniques are selected for the assessment. If it is for the summative assessment, the strategy for conducting an examination at the end of a term or semester or even an examination at the end of the session are conducted. The component 'use' explains that how the assessment strategy will help the learners, teachers, and also for the parents. Nature of task selected is also again another component of assessment. That includes, whether the task is a regular practice like formative assessment or a type of internal and external examination. The use of tests like developed by the teachers or standardized one are also linked with the nature of the task. As like, the other components which are responsible for adopting strategies for assessment are agent and basis of judgment, report and feedback, and moderation processes have also presented in the Figure.

Check Your Progress 2

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

(b) Compare your answers with the ones given at the end of this Unit.

3. Compare the role of a teacher in assessment of learning and assessment for learning.

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4. What are the major components of assessment system? Do you observe them when assessing your learners' performance?

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1.3.3 Evaluation

Let us discuss about evaluation, which is a broader concept as compared to measurement and assessment. Evaluation is "*a systematic process of collecting and analyzing data in order to determine whether, and to what degree, objectives have been, or are being, achieved* (Gay, 1991)". It leads to decision making.

As a teacher, you should understand that "*the purpose of evaluation is to make a judgment about the quality or worth of something.* (Ebel and Frisbie, 1991)"

In assessment you try to find out, the level of achievement or performance of a learner. But in evaluation your focus is, how good is the performance or the level of performance. You can say that evaluation is a process of value judgment. It is also used to refer to the product or outcome of the process. You can say that "measurement and assessment are the means and evaluation is the end". In the process of evaluation, measurement is the first step, assessment comes next and when value judgment is added to it, it becomes evaluation.

Let us further elaborate the concept of evaluation. According to Bebby (1977). evaluation as "*the systematic collection and interpretation of evidence leading as a part of process to a judgment of value with a view of action*". If you analyze this definition, you can identify four key elements of evaluation as follows:

- Systematic collection of evidence

- Its interpretation

- Judgment of value

- A view of action

Let us try to understand the above terms used.

Systematic collection implies that whatever information is gathered, should be acquired in a systematic and planned way with some degree of precision.

Information gathered systematically should be carefully analysed and **interpreted;** superficial observations may lead to wrong interpretation.

Judgment of value takes evaluation far behind the level of mere description of what is happening, but requires judgments about the worth of an endeavor.

A view of action means every decision has a specific reference to action. It may be conclusion oriented or decision oriented.

Characteristics of good evaluation

As a teacher whenever you are involved in the evaluation process, you should ensure that evaluation should have following characteristics, which are often termed as "elements of a good evaluation". See Figure 3 :

Figure 3:   Characteristics of Good Evaluation
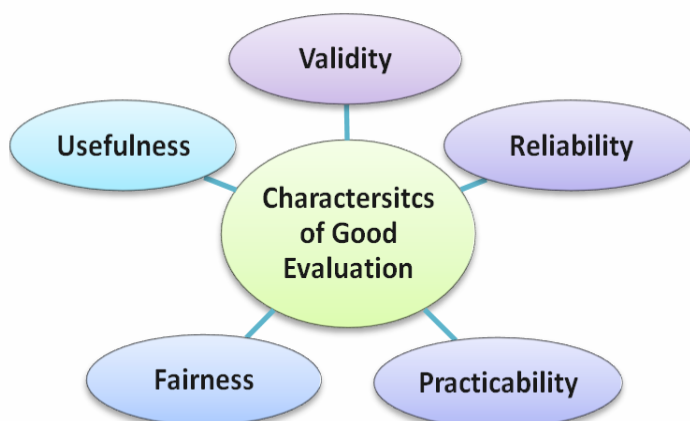
Let us discuss each characteristic for our clear understanding :

Validity: A valid evaluation is one which actually tests what is set out to test i.e., one which actually measures the behaviour described by the objective (s), under scrutiny.

Reliability: It is a measure of consistency with which the question, test or examination produces the same result under different but comparable conditions. A reliable evaluation mechanism is independent of the characteristics of individual evaluator.

Practicability: Evaluation procedure should be realistic, practical and efficient in terms of their cost, time taken and ease of application.

Fairness: Evaluation must be fair for all learners. This can be possible by accurate reflecting of range of expected behaviors as desired by the course objectives.

Usefulness: Evaluation should be useful for all learners. Feedback from evaluation must be made available to learners and help them to prove their current strengths and weaknesses.

We will discuss in detail the various aspects of criteria of a good tool in Unit-6 of Block-2 of this Course.

The Purposes of evaluation

According to Oguniyi (1984), educational evaluation is carried out from time to time for the following purposes:

- To determine the relative effectiveness of the programme in terms of students' behavioural output.

- To make reliable decisions about educational planning.

- To ascertain the worth of time, energy and resources invested in a programme.

- To identify students' growth or lack of growth in acquiring desirable knowledge, skills, attitudes and societal values.

- To help teachers to determine the effectiveness of their teaching techniques and learning materials.

- To help motivate students to learn more as they discover their progress or lack of progress in given tasks.

- To encourage students to develop a sense of discipline and systematic study habits.

- To provide educational administrators with adequate information about teachers' effectiveness and school need.

- To acquaint parents or guardians with their children's performance.

- To identify problems that might hinder or prevent the achievement of set goals.

- To predict the general trend in the development of the teaching-learning process;

- To ensure an economical and efficient management of scarce resources.

- To provide an objective basis for determining the promotion of students from one class to another as well as the award of certificates.

- To provide a just basis for determining at what level of education the possessor of certificate should enter a career.

Check Your Progress 3

Note: (a) Write your answer in the space given below.

(b) Compare your answer with the one given at the end of this Unit.

5. What are the common characteristics of evaluation?

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1.4 RELATIONSHIP AMONG MEASUREMENT, ASSESSMENT AND EVALUATION

While going through the discussion about measurement, assessment and evaluation in previous section, you must have realized that all the three are associated with each other. Evaluation may be considered as an umbrella term which includes measurement and assessment (Figure 4).

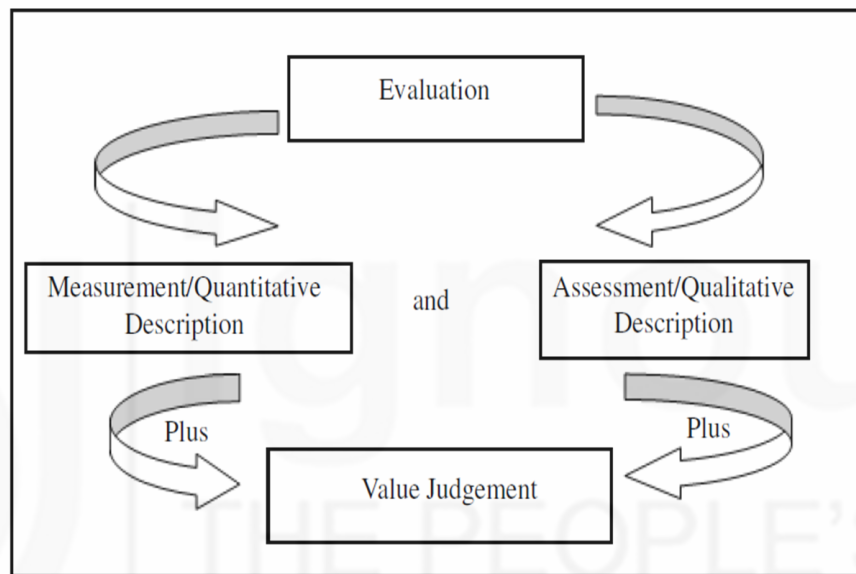Figure 4 Measurement, Assessment and Evaluation
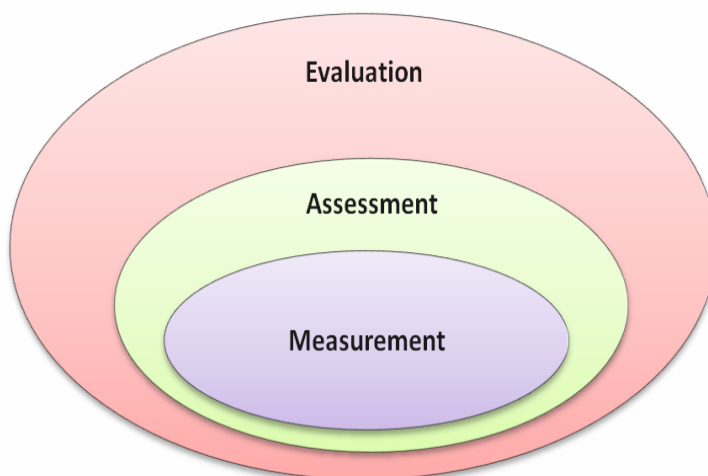
This relationship can be further explained as measurement focuses mainly on quantifying the variable, assessment bring in qualitative descriptions and when value judgment is added to these, it becomes evaluation. For example:

> Ramesh has scored 65 marks in Mathematics in the final year examination, which is above average performance but he has not performed well on test items related to Trigonometry. Ramesh has improved significantly with compared to his half-yearly examination.
>
> In this, 65 marks measurement indicator, like above average performance, identification of area of improvement comes under assessment and judgment of his performance in relation to half yearly examination is evaluation.

Let us see this in the following figure:

Figure 5: Relationship between Measurement, Assessment and Evaluation

(Source: BES-002: Teaching Learning and Assessment, IGNOU, 2013)

Figure 5, depicts the following :

1.   Evaluation = Measurement + Value Judgment

2.   Evaluation = Assessment + Value Judgment

3.   Evaluation = Measurement + Assessment + Value Judgment

From the above three concepts of evaluation, now it is clear that without value judgment there is no evaluation.

Check Your Progress 4

Note: (a)   Write your answer in the space given below.

(b)   Compare your answer with the one given at the end of this Unit.

6. Differentiate between Measurement, Assessment and Evaluation.

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1.5 TEACHING-LEARNING PROCESS AND EVALUATION

The main purpose of classroom teaching is to influence learners' behavior in the desired direction. The desired direction is guided by the educational objectives formulated by the school and the teacher. Therefore, you should be conscious of the goals and aims of education. More specifically, you should formulate learning objectives for various lessons and units in the systematized and rearranged syllabus in the subject of study. Secondly, you should be in a position to construct effective learning experiences on the basis of student learning and the modes of effective communication channels. Finally, you should determine the extent to which these objectives are to be achieved. Hence, three major elements in the education process are objectives, learning experiences and learner appraisal. The simple representation of the educational process is shown as follows:

Figure 6: Representation of Educational Process
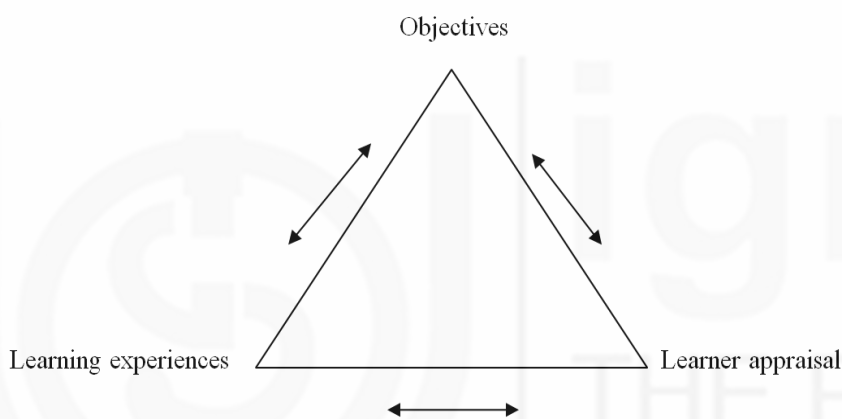
The above representation is a dynamic one and shows interaction among three major elements as shown by directional arrows. Objectives refer to one's intention of desired behavior that learners should acquire. The term learning experiences, refers to those activities and experiences that the learners undergo in order to acquire the desired behaviours.

You have to play an important role in providing learning experiences which involve interaction of students and content. You may use various teaching methods and techniques for providing learning experiences to the learner. The learning experiences lead to behavioural changes in learners. So, learning involves modification in the behaviour of a learner through learning experiences. In order that there may be an appreciable learning on the part of students, it is important that teaching must be effective. You should provide situations for close interaction of students with content by using appropriate teaching methods and techniques. Hence effective teaching leads to successful learning experiences.

Besides teaching, the learning experiences can also be brought about through a number of ways such as the library, laboratory readings, radio, films, film strips, science clubs, field trips or such other learning situations in real life.

Learning appraisal is concerned with ascertaining the extent to which the objectives have been met. The representation of the educational process shows the linking of each other element. Let us explain the linkage of three major elements of the educational process. Beginning with objectives, the arrow pointing to learning experiences indicates that objectives serve as a guide for the selection

or creation of learning experiences. For example, if a geometry course is aimed at developing deductive thinking abilities in learners, then learning experiences require work other than geometry content. This may include home assignment to work on newspaper editorials, advertisements and also individual projects. The point is that the nature of one's objectives will be an important determinant of the learning experiences that constitute the operational programme. The arrow pointing from objectives to learner appraisal indicates that the primary focus of appraisal is on gathering evidence on the extent to which the objectives of the programme have been attained. Just as objectives provide specification for establishment of learning experiences, they also furnish specifications for learner appraisal. For example, the development of deductive thinking among students, might require in its appraisal of learning, the evidence regarding students' proficiency to apply deductive principles to the analysis of a variety of material in life situations, which may be outside the field of geometry.

Now, the arrow pointing from learning experiences to learner appraisal is indicative of the fact that learning experiences provide examples for the development of appraisal tasks. The objectives that the students are engaged in, during the learning phase of the programme, should furnish ideas for appraisal situations. Thus, the arrow pointing from learning experiences to learner appraisal, indicates that learning experiences furnish ideas and suggestions for learner appraisal task may not be identical but contain an element of novelty for the learner.

The two arrows pointing from learner appraisal to objectives and to learning experiences are especially important. In the case of the former, the arrow signifies that appraisal procedures should furnish information about the extent to which the objectives are being attained. In addition, appraisal information can furnish valuable information that may result in the modification of some objectives and the elimination of others. The appraisal helps in providing a solution to the following questions:

- Should the objectives be modified or perhaps eliminated?

- Are the objectives realistic for the particular group of learners?

- Are necessary references available for achieving the objectives?

The arrow-pointing from learner appraisal to learning experiences, is suggestive of two important notions. First, it provides information about the extent to which learning experiences appear to be working well. Hence appraisal procedure can suggest the modification or elimination of learning experiences. A second important idea suggested by the arrow pointing from appraisal to learning experiences is that tasks, experiences and problems developed by evaluation specialist may be suggestive of new learning experiences. The incorporation of moral and imaginative appraisal materials into the learning phase of a programme has contributed significantly to the improvement of learning experiences.

The last arrow, which points from learning experiences to objectives, denotes that learning activities can result in encounters involving teachers, learners and learning materials which in turn may suggest new objectives.
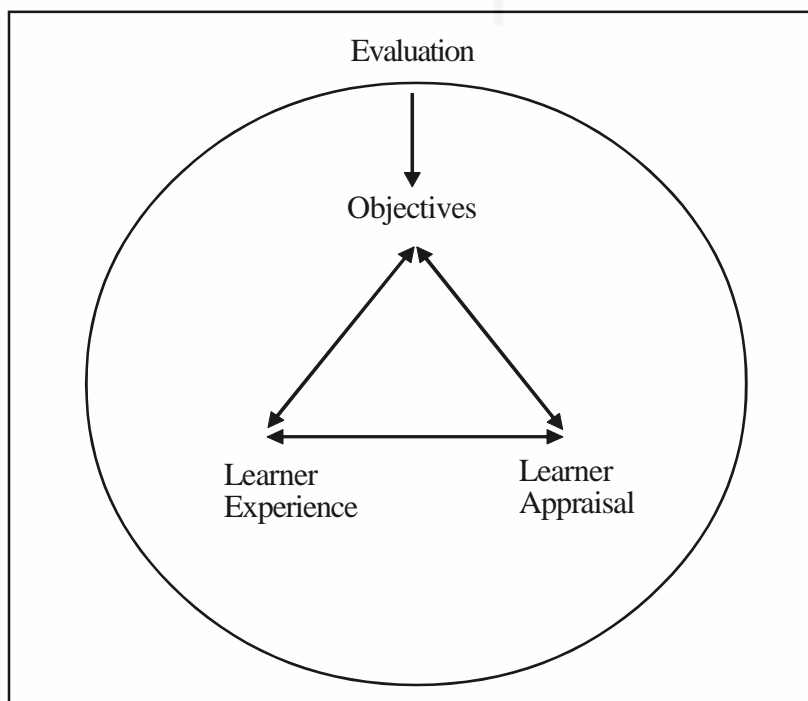
Role of evaluation

Evaluation plays an important role in the teaching-learning process. In learning, it contributes to formulation of objectives, designing of learning experiences and assessment of learner performance. Besides this, it is useful to bring improvement

in teaching and curriculum. It provides accountability to the society, parents, and to the education system. Let us discuss its role briefly.

a) **Teaching:** Evaluation is concerned with assessing the effectiveness of teaching, teaching strategies, methods and techniques. It provides feedback to the teachers about the quality of their teaching and the learners about their learning.

b) **Curriculum:** The improvement in courses/curricula, text and teaching materials are brought about with the help of evaluation. Evaluation provides feedback to the curriculum, whether it can be practiced, learner friendly, designed as per the need of the learners and also its effectiveness in terms of achieving the aims of the curriculum.

c) **Society:** Evaluation provides accountability to society in terms of the demands and requirements of the employment market.

d) **Parents:** Evaluation mainly manifests itself in a perceived need for regular reporting to parents.

In brief, evaluation is an important requirement for the education system. It fulfils various purposes in systems of education like quality control in education, selection/entrance to a higher grade or tertiary level. It also helps one to take decisions about success in specific future activities and provides guidance to further studies and occupation. Some of the educationists view evaluation virtually synonymous with what was previously defined as learner appraisal, but evaluation has an expanded role. It plays an effective role in questioning or challenging the objectives. This does not mean that you can casually criticize programme objectives. You should question or challenge programme objectives only after careful study of the relationship between a programme's objectives and the need for which the programme was designed. Evaluation helps in the design and modification of learning experiences on the basis of feedback received by learner appraisal. A simple representation explaining the role of evaluation in the teaching-learning process is shown in Figure 7 as follows :

**Figure 7: Representation of the Role of Evaluation in the
Teaching-Learning Process**

1.6 ASSESSMENT FOR ENHANCING LEARNING

While going through the discussion in Section, 1.3.2, you might have understood that assessment is part of teaching-learning process, and one of its major roles is enhancement of learning. As part of the teaching-learning process, assessment may be defined as ***the process of gathering, recording, interpreting, using and communicating information about a child's progress and achievement during the development of knowledge, concepts, skills and attitudes.***

Role of assessment for enhancing learning is discussed in a draft document of National Council for Curriculum and Assessment (NCCA) in 2004, as follows:

> *Assessment is central to the process of teaching and learning. It is used to monitor learning processes and to ascertain achievement in each area of the curriculum. Through assessment the teacher constructs a comprehensive picture of the short-term and long-term needs of the child and plans future work accordingly. Assessment is also used to identify children with specific learning difficulties so that the nature of the support and assistance they need can be ascertained and appropriate strategies and programmes put in place to enable them to cope with the particular difficulties they are encountering.*
>
> *Assessment assists communication about children's progress and development between teacher and child, teacher and parent and teacher and teacher……..*
>
> *(Primary School Curriculum, 1999, p.17, as quoted in draft document of National Council for Curriculum and Assessment (NCCA), February, 2004)*

If you analyze the above paragraph, you can easily indentify the key determinants of assessment for enhancement of learning. Few are as follows:

- Assessment is part of the teaching-learning process.

- Assessment helps in monitoring learning and ensuring minimum achievement in every area.

- Assessment helps teachers in planning teaching-learning according to short-term and long-term needs of the learners.

- Assessment helps in identifying specific learning difficulties of the learners so that teachers can plan and adopt suitable strategy and technique to support such learners.

- Assessment helps in maintaining continuity in communication between teachers, learners and parents so that required interventions can be given at appropriate time to enhance learning.

Let us see as to how teachers can use assessment as part of the teaching-learning process for enhancing learning. Refer to Figure 8.

Figure 8 Assessment as part of the Classroom Practice
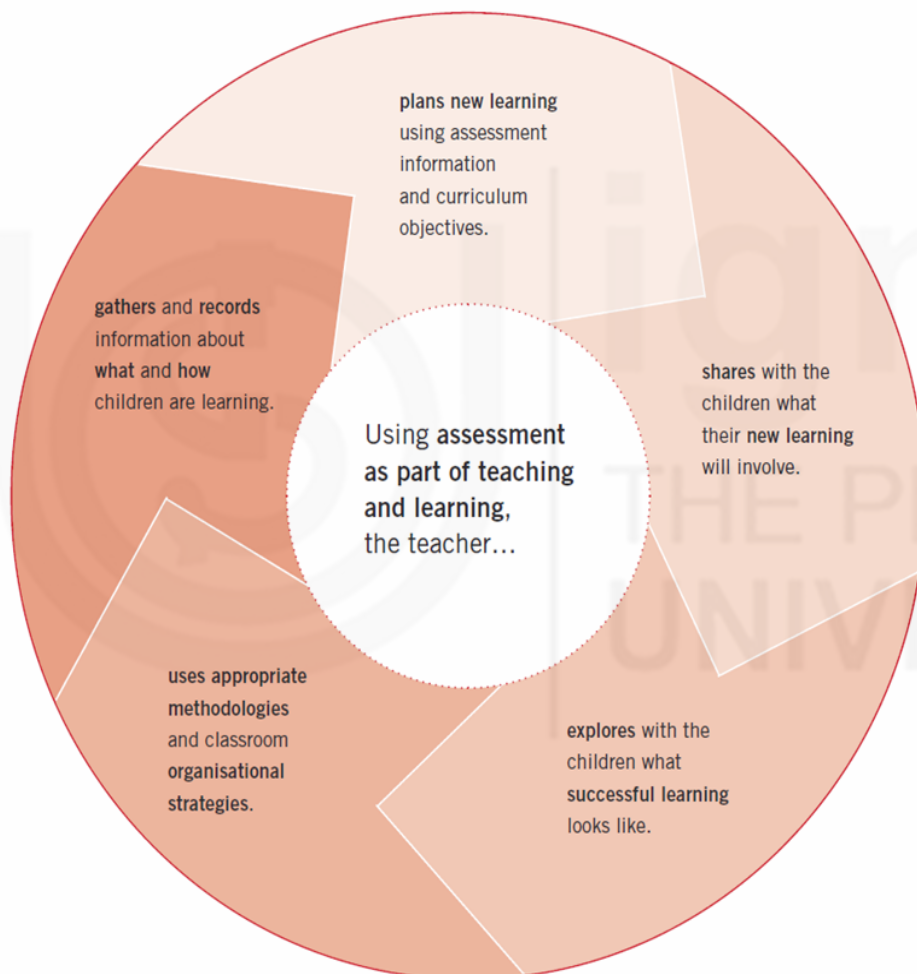
(Source: www.ncca.ie retrieved on 02/07/2017)

Your main focus while using assessment as part of the teaching learning should be to answer three basic questions:

- What is the current learning-level of your learners?

- What are they going to learn?

- How will you link next learning with their previous learning and experiences?

If you are able to find out the answers for these questions through assessment, you can use it effectively for enhancing learning of your learners.

Check Your Progress 6

Note: (a) Write your answer in the space given below.

(b) Compare your answer with the one given at the end of this Unit.

8. How does assessment help in enhancing learning?

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1.7 OTHER TERMS RELATED TO ASSESSMENT AND EVALUATION

There are many terms which as a teacher you encounter while dealing with assessment and evaluation. Let us discuss in brief, the common terms for you to understand.

1.7.1 Appraisal

Appraisal is not a new term in industry. Annual performance appraisal is a key component for many industries where employee's performance is assessed based on self-appraisal submitted by him and authenticated by seniors. In past few years, this system has been adopted in education sector also. In simpler terms appraisal can be defined as follows :

"*Appraisals are judgments of the characteristics, traits and performance of others. On the basis of these judgments we assess the worth or value of others and identify what is good or bad. In industry performance appraisal is a systematic evaluation of employees by the supervisors. Employees also wish to know their position in the organization. Appraisals are essential for making many administrative decisions: selection, training, promotion, transfer,* wage and salary administration etc."

From the above definition, appraisal of a learner can be explained as the work profile that the learner has performed in the previous classes or the work that the learner has completed in the class where he/she is continuing at present.

As questions on teachers' quality and performance in Indian schools are being raised time and again in various reports, the appraisal is gaining momentum in Indian school sector. Many private schools/chain of schools have made it compulsory for each teacher to submit annual self-appraisal before moving to the next session/continuation/promotion.

In India, schools systems like Kendriya Vidhyalaya Sangthan (KVS), Navodaya Vidhyalaya Samiti (NVS) and some States have already adopted a self-assessment mechanism for annual performance assessment. In an Appraisal Performa, you can find few common columns under which information is required from teachers. The columns are as follows :

- **Personal information:** In this, teacher provides his/her personal details, employment details, etc.

- **Self-assessment:** Teachers are asked to write about their duties (which they have performed), their targets and achievements, any shortfall (if they were not able to achieve fully the desired target with justification), their special/outstanding contribution to school/organization (if any), areas which they have indentified for improvement in next session, etc.

- **Appraisal by reporting authority (Head master/Principal, etc.):** Uunder this section, the reporting authority analyses the self-assessment report submitted by the teacher and provide remarks (generally in the form of grades) on various dimensions like accomplishment of planned work/ work allotted, quality of work output, analytical ability, accomplishment of exceptional work/unforeseen task performed, etc.

- **Appraisal by reviewing authority:** The self-appraisal report submitted by the teacher and remarks/grades provided by the reporting authority are reviewed by higher authorities like manager of the school or education officer designated by the concerned system.

1.7.2 Test

Test is a very common term used in various ways. You may find use of test as a tool or a technique. It is also considered as a most commonly used method for measurement of educational and psychological attributes. In dictionary meaning of test you can find that "test is a series of questions on the basis of which some information is sought" (Singh, 2002).

Test is also defined as a method to determine individuals' ability to complete certain tasks or demonstrate mastery of a skill or knowledge of content. It is also considered as a tool or systematic procedure for measuring a sample behaviour by posing a set of questions in a uniform manner designed to measure any quality, ability, skill or knowledge.

Bean (1953) defined test as "*an organized succession of stimuli designed to measure quantitatively or to evaluate qualitatively some mental process, trait or characteristics*."

It you analyze all these definitions, you can easily indentify the following characteristics:

- Tests have some organized stimuli (test items) in an organized sequence to test some specific trait/attribute.

- Test can be used as tool for quantitative measurement as well as qualitative assessment.

- Test is a systematic tool to measure sample behaviour.

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If you go through various tests being used for assessment and evaluation, you may find a variety of tests. All these tests can be classified on various criteria. Few common criteria have been summarized in Figure 9.
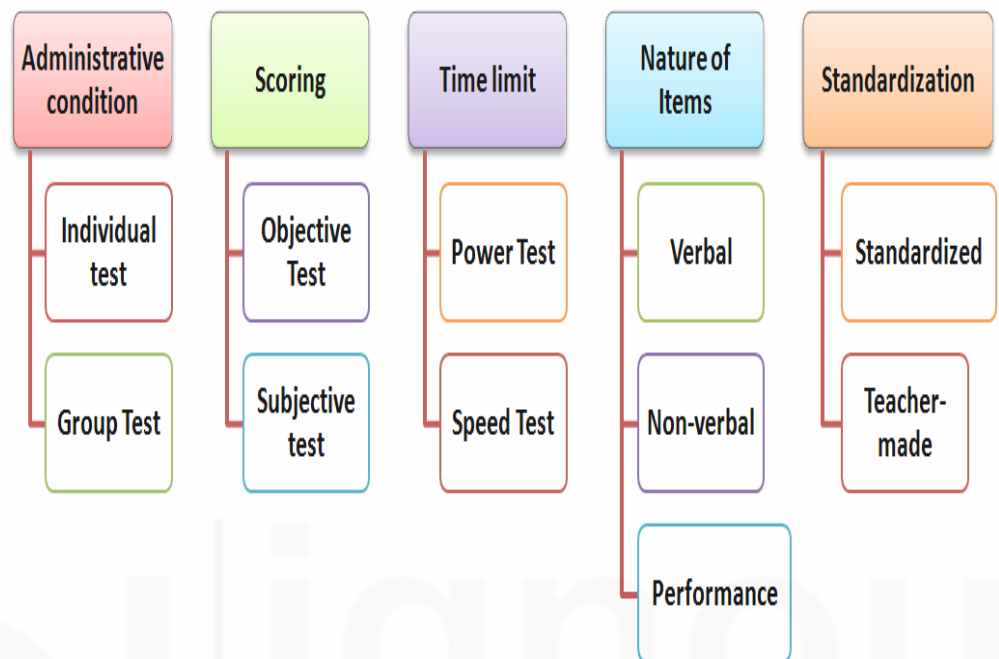
Figure 9: Common Criteria of Tests

Figure 9 analyses certain common criteria of developing and use of tests. As shown in the figure, we can say that a test can be administered individually or in group. The scoring procedures in objective and subjective tests are different. Time limits for power and speed test is also another concern. Generally, more time is provided for power test but very less time is provided for speed test to complete the task. Nature of items in the tests can also vary such as the items are may be verbal, non-verbal or performance based items. On the basis of the purpose of test use, it may be standardized or teacher-made.

You can find many more classifications like based on attributes, etc. Characteristics of a good test and steps of test construction and standardization have been discussed in Unit 9, 10 and 11 of Block 2 of Course, BES-127.

1.7.3 Examination

Examination is considered as a formal system to know how much one has achieved or where one stands in comparison to others. It is basically a test to see how good somebody is at something.

Generally examination is considered in two senses : one, to know about how good one is, and other, to know the shortcomings, or, where is one lacking? Example of first is semester or annual examination, and example of other is unit test, diagnostic tests, etc. Both have their importance in educational setting as both are complementary to each other. You must have realized that examinations are some formal sort of testing mechanism, where syllabus, format of test-paper, medium, nature of test items, duration, scoring pattern, etc. are pre-decided and mostly standardized one. Examination may be classified in various types based on certain criteria, like:

Figure 10: Types of Examination

MODE	• Written • Oral • Practical
PURPOSE	• Diagnostic • Performance • Promotion
COVERAGE	• Annual • Semester • Monthly
OBJECTIVE	• Academic • Professional • Competitive
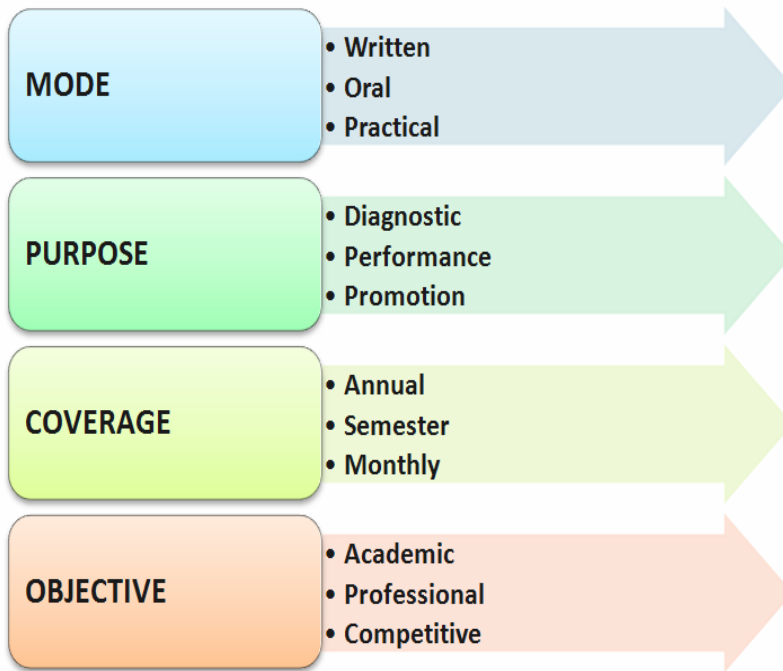
Check Your Progress 7

Note: (a) Write your answer in the space given below.

(b) Compare your answer with the one given at the end of this Unit.

9. How will you differentiate test from examination?

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1.8   LET US SUM UP

In this Unit we discussed common terms like measurement, assessment and evaluation. Measurement is defined as a process of quantifying the degree to which someone or something possessed a given trait, i.e., quality, characteristics, or features. The characteristics of measurement and also four scales of measurement i.e. nominal, ordinal, interval and ratio are discussed to help you in adopting appropriate measurement tool and technique. The Unit also discussed about assessment as a systematic procedure for collecting information that can be used to make inferences about the characteristics of people or object. A brief discussion about assessment for learning, of learning and as learning will help you to understand these aspects. We have also discussed that evaluation is value judgment. The relationship of measurement, assessment and evaluation has been explained with help of examples. Role of evaluation in teaching learning-process and assessment for enhancing learning is also explained in this Unit.

The Unit ended with brief discussion on various associated terms like appraisal, tests, examination, etc. This unit will help you to understand and comprehend the coming units of the block and course as well.

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1.10   ANSWERS TO CHECK YOUR PROGRESS

1. The four levels of measurement are : nominal, ordinal, interval and ratio.

2. Nature of measurement and assessment vary for various traits or attributes of the students. It is therefore measuring some attributes required to be defined operationally.

3. In assessment of learning, the role of teacher is very much dominating as it is a teacher-centered approach whereas in assessment for learning, the role of teacher is very much friendly, supportive, and teacher acts as a facilitator for the learners.

4. Self exercise (Refer Figure-2).

5. Reliability, Validity, practicability, fairness, objectivity and usefulness.

6. Self exercise (Refer Figure-5).

7. Teaching-learning process, curriculum, society and parents.

8. Assessment helps in monitoring learning, identify the specific learning difficulties, and feedbacks/comments help to modify learning of the students.

9. Refer 1.7.2 and 1.7.3.

UNIT 2 PERSPECTIVES OF ASSESSMENT

Structure

2.1   INTRODUCTION

In your day-to-day teaching how do you know the progress of learners? You use various verbal and written tests to assess the progress of learners. One of the important roles of teachers is to make professional judgment about learners' performance, and teachers are continuously engaged in decision making process informed by relevant data. Educational assessment is a comprehensive term which includes all the processes and activities reflecting and describing the nature and extent of human learning, reflects   the degree of correspondence with aims and objectives of instructional design and activities and pedagogical approaches designed to attain the objectives.

Assessment is integral component of learning and an ongoing process inherent in day-to-day teaching learning activities. It is most significant indicator of learning, and helps the teacher to gather information about the learning style, strengths and limitations of the learners and adjust his/her teaching strategies accordingly. It is also the process to provide feedback to learners about their own learning. Therefore as a teacher it is essential for you to understand the changing perspective of assessment which evolved over the years to integrate assessment practices in your day to day teaching learning process in an effective manner. In this Unit let us discuss about various perspectives of assessment. We will focus on three major perspectives of learning- the behaviourist, cognitivist and constructivist perspectives of assessment and subsequent changes in assessment practices.

2.2 OBJECTIVES

On completion of this Unit, you should be able to:

● explain the concept of perspectives of assessment;

● elaborate behaviourist, cognitivist and constructivist perspective of assessment;

● explain the shift from assessment of learning to assessment for learning; and

● differentiate between assessment for learning and assessment of learning.

2.3 PERSPECTIVES OF ASSESSMENT

As a teacher you are continuously engaged in assessment of the performance of learners which is one of the important functions of teachers. Before we discuss various perspectives of assessment let us spend few minutes on the assessment practices that have been traditionally used in our country. We all are aware of the annual examination system that has existed in our county and still plays an important role in the school education system. The inadequacy of this system has also been realized and highlighted by various policy documents from time to time and efforts have been made to move away from traditional annual examination system to Continuous and Comprehensive Evaluation (CCE), and most recently the term assessment has replaced the term evaluation. We have also moved away from numerical assessment, that is, from marking to grading system. Have you ever reflected on the principles underlying such shifts? In this Unit, let us focus on those psychological principles which have brought change not only in the conceptualization of how learning takes place but also how it should be assessed. In Course BES 123 (B.Ed. first year) ' Learning and Teaching' we have focused on the changing perspectives of learning. In this Unit we shall discuss how change in the perception of learning brings change in the assessment practices as well.

2.3.1 Behaviourist Perspective of Assessment

Assessment has traditionally been influenced with the behaviourist theories of learning. The behaviourist learning theories are concerned about the influence of external environment on human learning. Learning according to behaviourism is based on three basic assumptions. First, learning is manifested by change in behavior; second, environment shapes the behavior; and third, the principle of contiguity and reinforcement are central to the learning process. Behaviourism has tried to explain action in simple causal terms, as it believes that, competence can be achieved by breaking down tasks and activities in small steps and reinforcing the achievement of each step. All of us have experienced how children show their happiness on getting 'good' or 'fair' in their class work. These comments act as reinforces for further learning among children. Behaviourist theories believe that knowledge could be obtained and transmitted through the manipulation of environment and human beings are passive recipients who have to respond to an active environment. Learners' natural capacities to draw upon and construct their own knowledge, to develop their own capacities to relate to the environment, both, physical and social are of little relevance in such learning.

Behaviourist learning theories considered learning as association of stimulus and response resulting in change in behviour. Reinforcement is central to the behaviourist approach and it focused on objective measurement of ability and achievement. This developed the tradition of defining learning outcomes in observable behaviours. Learner's personal experiences and socio cultural context had very little significance in such type of learning perspective. For instance, the socio-cultural context of a child coming from remote or tribal area is entirely different from the children belonging to urban areas. This may affect their learning but was ignored in the behaviourist perspective that focuss on the outcome. The achievement of learners, therefore, become more important and it is presumed that any thing can be taught using reward and punishment. The overemphasis on learning outcomes results in an examination system that encourages rote memorization, objective types test focuss on recall, completion, matching, and multiple choice tests which fit perfectly with what was deemed important to learn. It also results in neglect of the role of individual experiences and complex learning skills like analysis, synthesis, critical thinking, reflection, problem solving, etc. in learning.

Therefore this perspective of human learning has encouraged schools to function as factories to produce learners with higher academic achievement that have been the sole determinant of quality education. Educational systems influenced with behaviourist perspectives follow the typical transmission mode of teaching learning process to fill the minds of young learners with heaps of information and then assess the learner's ability to recall this information through various means of assessment tools. Behaviourist perspective, thus, encouraged the concept of mastery learning based on the premise that most students can master their learning targets, given enough time and suitable opportunity. The basic premise of behviousit perspective is that competence can be achieved by breaking down tasks and activities into small components or steps. Achievement of each step is acknowledged and reinforced that motivates the learner to move towards the next more complex step. It was assumed that intelligence is evenly distributed amongst learners and can be represented by normal curve. Hence, the purpose of assessment was to place learners at various points of this normal curve. This led to the use of various measurement tools of assessment to discriminate between learners on the basis of their performance. You are familiar with the ranking system where learners are placed according to the marks or grades they obtain in examination, and excellence is determined on how well a learner has performed in comparison to others. The effectiveness of assessment tools from this traditional perspective is based on discrimination index i.e. ability of the test to discrimination between high and low achievers. Consequently both teaching learning process and assessment have predominantly focused on quantification of information.

This traditional behviourist perspective expected you to determine the learning objectives and outcomes, related assessment tasks and criteria, the performance of learners and grades to be awarded. This led to the separation of instruction and formal (summative) assessment with latter being an objective exercise determining learner's level of achievement and level of readiness to move up to the next stage of learning. Consequently, in the whole teaching learning and assessment process learners remained passive at the receiving end complying to the activities given to them. Learners got very little opportunity for self assessment, which may help them in identifying their own learning gaps and determining their own learning objectives.

We have already discussed that testing played central role in behaviourist teaching learning process. You are well aware of unit tests being undertaken at the end of each unit in our schools. The measurement tools/tests are so designed, that, if the learners memorize and reproduce the answer, it is proof of their mastery over content, whereas actually the learners might have to develop very little generalization ability to use their learning gains in real life situations. It is very well reflected in our day-to-day experiences as well.

This perspective considers that assessment has to be uniformly administered on each and every learner, and individualized assessment based on the needs of individual learners is ignored. Due to emphasis on objectivity in assessment, teachers avoid using qualitative assessment procedures which could have ensured a holistic assessment of performance of the learners.

Check Your Progress 1

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

b) Compare your answers with the ones that are given at the end of the Unit.

1. Discuss the basic principles of learning from behaviourist perspective.

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2. What determines the effectiveness of assessment tools from behaviourist perspective?

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2.3.2 Cognitive Perspective of Assessment

In contrast to behviourism the cognitive theorists, such as Piaget believed that learning is an integral process in which new information is assimilated in ones cognitive processes. We have explained in Unit3 of BES123 various developmental stages of learners identified by Piaget, which influence their learning. Let us quickly recall these stages. Piaget identified four stages of cognitive development i.e. sensory motor stage (0-2years), pre-operational stage (2-7 years), concrete operational stage (7-12 years) and formal operational stage (12-adult). According to Piaget these stages play crucial role in the learning of children and they cannot learn certain things until they have reached to that level of cognitive development. In other words the mental readiness of the learner plays a crucial role in learning and should be considered for assessment as well.

The 'child centered' approach to learning evolved out of Piaget's cognitive development theory which was further reinforced by Bruner with emphasis on 'active learning'. Both Piaget and Bruner stressed on the importance of activity in learning which the learner can observe, practice, manipulate, modify and construct his/her own knowledge. They also stressed on relating new learning to the previous experiences of the learners. Piaget recommended giving

challenging tasks to activate the thinking process which may facilitate the learner to reach equilibrium through the process of adaptation. From Piaget's perspective though the task/ activity may be challenging but it should be according to appropriate developmental stage of the learner, otherwise the learner may not be able to learn. Therefore, from the cognitive perspective the cognitive development of the learner determines the assessment method, and tools to be used to assess the performance of learners. Clearly, there is no single or uniform method of assessment from this perspective. Assessment is not linear from this perspective; instead, it is a spiral and continuous process. Therefore as a teacher you have to inbuilt assessment in the activity itself and determine the assessment procedure according to the developmental stage, experience, and exposure of the learner.

2.3.3 Constructivist Perspective of Assessment

Let us now discuss as to how concept of assessment has been reconceptualised due to change in learning theories from behaviourist to constructivist perspectives. As we have already explained in Unit 3 of BES123 constructivism believes in active involvement of learner in the process of learning. Learner's personal experiences play important role in constructivist learning and each learner generates his/her own rules and mental models which are used to make sense of experiences. According to constructivism, knowledge is actively constructed by the individual and learning is an adoptive process based on these experiences. Consequently the mechanistic view of learners as passive recipient of knowledge has been replaced by the view of learners as situated and active knowledge constructors. Therefore while from behaviourist perspective any thing can be taught with the help of reinforcement, from constructivist perspective previous experience of learner is more important and a deciding factor in learning. Knowledge according to constructivist epistemology cannot be transferred uniformly to all learners, hence teaching and learning can not be synonymous. For instance, in a class a teacher teaches the same content to the whole class but learners process the information according to their own experiences and learn differently the same content.

A basic premise of constructivism is that individuals live in their own world of personal and subjective experiences and build new knowledge on the basis of their previous experiences, rather than new knowledge being imposed from outside. This premise of learning includes how children learn, as well as learning with understanding, and not limited to what they learn, that is, the end product acquired through rote memorization. Therefore, assessment is directed towards assessment of understanding the learners rather than their surface knowledge and ability to recall facts. As constructivist perspective of learning emphasizes the experiences of learners and their socio-cultural contexts in the learning process, organizing new information around the existing conceptual framework of learner facilitates learning. Concept mapping, therefore, plays very crucial role in constructivist learning and facilitates transfer of learning and problem solving from one conceptual framework to another. Assessment from this perspective has to be context specific and cannot be uniformly used for all learners. Usually children in schools come from different socio-cultural backgrounds. Tribal children, for instance, often have difficulty in communicating and understanding standard Hindi language due to their unfamiliarity with the standard language used in school. Therefore while assessing the language ability of such children, differential assessment procedure has to be adopted. It is expected to assess

learner's ability to link ideas, apply knowledge and solve problems. The assessment process is expected to challenge the incomplete understanding and pre- concepts of learners, and should help the learner to modify and refine their thinking through appropriate scaffolding and feedback. It means that you cannot use a single standardized test on all the learners and have to adopt a variety of assessment tools.

Assessment from this perspective should provide feedback on how learning is taking place and how it can be ensured in the future. In other words, assessment should reflect not only the present level of development of learner but also the level of potential development. Constructivist learning approach, therefore, encourages an assessment culture where assessment is embedded in the whole teaching - learning process and focuses on 'assessment of the process of learning in addition to that of its product'(Birenbaum *in Segers* et el (ed) 2003). Hence multiple assessment procedures are used to develop learner's profile through authentic, contextualized assessment tools. Learners become engaged participants in sharing and developing criteria, in self and peer assessment , reflecting on their own learning, keeping track of their own performance and utilizing feedback to refine their knowledge, skills and behaviours. Teachers facilitate learners to develop strategies for learning and assessing. Assessment therefore, is spiral and formative while from behaviourist perspective, assessment is considered as linear and summative process. To summarise, the focus of assessment, in constructivist perspective has shifted from assessment of learning to assessment for learning.

Check Your Progress 2

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

   b)   Compare your answers with the ones that are given at the end of the Unit.

3.   How learning is an integral process? Explain it in view of Piaget.

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4.   What is the nature of assessment in constructivist perspective?

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5.   'Learning and teaching can not be synonymous'. Explain it in view of constructivist perspectives of learning and assessment.

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6.   'Learning and teaching can not be synonymous'. Explain it in view of constructivist perspectives of learning and assessment.

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2.4 ASSESSMENT OF LEARNING AND ASSESSMENT FOR LEARNING

In the previous section we have discussed behaviourist, cognitivist and constructivist perspectives of assessment, and the shift in focus of assessment from the outcome to the process of learning itself. Viewed from this perspective assessment can be put into two categories: assessment of learning, and assessment for learning. Recently another category of assessment has also emerged, that is assessment as learning. Let us now discuss these concepts.

2.4.1 Assessment of Learning (AOL)

We have seen that the objective of assessment from behaviourist perspective is to assess the extent of learning that has taken place at a particular point of time, for instance, after teaching a lesson or unit, you might be interested to know the level of achievement of students on the content you have taught and therefore you give them some test for it. The predominant objective of assessment in schools is assessment of learning. You might be using various forms of tests to assess the quantity and accuracy of learners' work represented through grades or marks. This type of assessment tells you as to how well the students are performing in comparison to certain criteria such as 'high and low achievement' or 'pass or fail', etc. School report card of students provide feedback to parents about the progress of their wards as well.

Similarly, at the larger scale, State level or National level surveys are conducted to assess the performance of students at different levels. The focus of such assessment is to rank order students in groups in terms of their position within the group such as first or second, and so on. Although such type of assessment has long historical tradition and is widely accepted by schools and parents alike, but, it has several limitations and doubts have been raised about the reliability and validity of such type of assessment procedures. Assessment from this perspective has been considered as a means to achieve the goal of mastery learning. This approach led to identifying minimum levels of learning (MLL). The National Policy on Education (NPE) 1986, revised in 1992 and its Programme of Action (POA 1992) stressed on minimum levels of learning (MLL) which subsequently led to stage- wise and subject- wise development of MLL by the NCERT. Traditionally assessment of learning has been carried out in our schools with the help of numerical assessment (0-100) or grades (A-E), etc. and is summative in nature reflecting how much a learner has achieved at the end of learning any concept and unit. Assessment of learning, therefore is summative and linear which is carried out with the objective to ascertain what the learner has learnt after teaching is over. It is the end product of learning.

2.4.2 Assessment for Learning (AFL)

In the preceding section of this Unit, you have seen that traditionally assessment of learning is done after the task is completed with the objective to assess the outcome of learning. In this section let us focus on assessment for learning where assessment is inbuilt in the whole process of teaching learning itself.

We have already discussed in section 2.3 the importance of the role of individual differences from cognitivist and constructivist perspective which play crucial role

in human learning and needs to be considered in any decision making. Three things are essential while assessing learners:

- the understanding of how learners learn,

- how a learner is progressing with reference to himself/herself. We have also discussed the concept of Zone of Proximal Development (ZPD) of every learner. Each learner, therefore has to be assessed according to his/her ZPD to ensure maximum learning. Assessment from this perspective tells us how the learner is progressing and what more can be done to facilitate him/her to reach to their maximum capacity; and

- as teacher we are also interested to know the learner's progress with reference to his/her peer group and the criteria set by the teacher.

Therefore, assessment for learning is much broader term and refers to formative assessment, though it is not simply formative assessment, that takes place in order to take decisions to inform the next stage of learning (Earl, 2003).

As learners have different experiences, background and learning styles, and they construct their own knowledge based on these experiences, learning needs to be considered as a continuum. Assessment for learning ensures that the learner is able to translate and reflect in his/her behavior whatever he/she has learned. Hence, Assessment for learning is viewed as spiral and part of the learning process itself in which learners play a central role in evaluating their own progress. It is ongoing and individual process and helps the teacher to take decision on the level of understanding of the learner and plan teaching learning strategies accordingly. It is essential for improving the performance of the learners. For AFL, you have to collect wide range of data so that you can modify your teaching learning strategies according to the needs of your learners. Grading in AFL is not done with the objective of merely making comparative judgment of learners' achievement, but, to know their strengths and limitations and provide them feedback that will help to improve their learning. It also helps the teacher to bring suitable modification in teaching learning process to ensure learning. The crucial question in AFL is 'what comes next in learning'. Both teachers and learners are decision makers in this process and the information about learners' present level of achievement is taken to help them to reach to their Zone of Proximal Development (ZPD).

It is essential to clarify at this point that though AFL is formative in nature, but, it is different from what traditionally has been referred to as formative assessment. While formative assessment is about being more frequent, AFL is about being continuous. Likewise formative assessment is undertaken by the teacher to gain feedback on learner's progress, while AFL is about informing learners about their own progress. Formative assessment tells teachers who is meeting the standards and who is not but AFL tells teachers about the progress of each learner towards meeting the standard while learning is happening and there is still scope to help them.

Therefore, AFL directly influences learning by reinforcing the connection between assessment and instruction. It is interwoven in day-to-day teaching learning process and uses information to plan suitable strategies based on the learning style of learners. It also encourages active participation of learners in utilizing information to self- assess, regulate and monitor their own learning. Teachers

play the role of facilitator, guiding, coaching and scaffolding to lead learners towards a learning destination which is clearly understood by both teacher and students. Clearly AFL is different from formative assessment. AFL is therefore focused on how learners learn instead of what they learn, and facilitates them to improve their learning and not just limited to providing feedback to them about their performance.

Assessment for learning helps the classroom processes and results into instructional interventions designed to increase and not merely monitor learning. These instructional decisions are jointly taken by learners and teachers working as a team. Hence learners become consumer of assessment information and use it for their own progress. NCERT has recently developed class wise learning indicators for English, Hindi, Urdu, Mathematics, Environmental Studies, Science, Social Sciences and Arts Education for the elementary stage. These indicators are supposed to help in a number of ways by:

- Understanding learning as a process.

- Focusing and understanding children's learning on a continuum of learning.

- Respond positively to the diversity and helping all children to participate fully and achieve well.

- Providing a reference point for parents , children and others to understand the learning of every child in a simple way.

- Providing a framework for monitoring, learning and reporting progress about the child. (NCERT 2014, p2).

Therefore assessment for learning helps you to use it as a tool to develop learner's knowledge, understanding, skills and values which they are able to reflect in their behavior.

The third term being used is **Assessment as Learning (AAL)** which occurs when the learner personally monitors his/her own learning, assimilates the required changes, accommodates and adapts to these new changes. It provides opportunity to learners 'to monitor' what they are learning and use feedback to make adjustments to their understanding (Earl, 2003). The learner critically evaluates situation, asks reflective questions to him/herself and considers a range of activities to learn. He/she uses personal experiences and knowledge to construct meaningful learning. In such type of assessment comparison with others becomes unnecessary. The learner compares his/her learning own prior achievement and his/her aspirations and targets for continued learning. For instance, suppose you wish to get 'A' grade in your examination but you received 'B' in your assignment. You try to reflect on the reasons why you could not get 'A' grade, use this feedback on the assignment grade to overcome your shortcomings so that you may improve and get your desired grade. You are engaged in assessment as learning. Assessment as learning therefore includes self - assessment by learners to take informed decisions about their own learning. The reference point here is learner's own previous learning and the desire to achieve some goals specified him/herself instead of being determined by the teacher. Therefore, while in assessment of learning and assessment for learning the teacher plays an important role, in assessment as learning the learner him/herself initiates assessment process with the objective to achieve some goals he/she has set for him/herself.

Check Your Progress 3

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

b)   Compare your answers with the ones given at the end of the Unit.

7.   Explain the concept of 'assessment of learning'.

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8.   Explain the concept of 'assessment for learning'.

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9.   Differentiate the major difference between assessment for learning and formative assessment.

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10. Differentiate between assessment of learning and assessment for learning.

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2.5   LET US SUM UP

In this Unit we have discussed the changing perspectives of assessment from behaviourist to constructivist approach. Traditionally we have been following behaviourist perspective in our schools specifying targets/goals in terms of measurable and achievable behaviours which lead to criterion and norm reference testing procedures using various types of assessment techniques. Concept of minimum levels of learning (MLL) and mastery level of learning emerged from this behaviourist perspective and dominated the education sector for very long period of time. However, slowly the attention is shifting towards considering learning as individual and subjective phenomena based on the experiences of learners, that is the cognitivist and constructivist perspectives. In such circumstance assessment is considered to be inherent in the teaching learning process itself and facilitate the learner to improve further based on their experiences. Hence it is spiral instead of being linear process and focus has now shifted towards indicators of learning performance of students. Assessment of learning and assessment for learning reflect these two perspectives of assessment. In the end we have also discussed about assessment as learning which is a self monitoring mechanism of the learner where he/she evaluates his/her own performance against the goal he/she has set to achieve.

2.6 REFERENCES AND SUGGESTED READINGS

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2.7 ANSWERS TO CHECK YOUR PROGRESS

1. Learning is change in behavior resulting from the interaction of individual with the environment.

2. The tool's ability to distinguish between high achievers and low achievers determines its effectiveness.

3. As per Piaget, learning is an integral process in which information is internalized in ones cognitive processes and learning occurs through internal processing of information through assimilation, accommodation and adaptation. From this perspective how information is presented is equally important and learners perceive the entire situation as a whole then see its various aspects.

4. Self-assessment, peer group assessment, collaborative learning and assessment.

5. Knowledge according to constructivist epistemology cannot be transferred intact from one individual to another and therefore, learning and teaching cannot be synonymous.

6. In constructivist learning, social context plays important role as knowledge is acquired through social interaction. Therefore, collaborative learning and peer interaction facilitate learning.

7. Assessment of learning has little scope for enhancement of learning of the learners. It only assess the performance of the learners in a defined learning task or criterion.

8. Assessment for learning has a wider scope for assessment as well as enhancement learning abilities of the learners. It helps the learners to get feedback of learning and also to acquire new knowledge through the use of assessment techniques.

9. Formative assessment provides feedback to teachers about the achievement of learners so that they may modify their instructional strategies accordingly. While assessment for learning is a part of learning process where learner plays important role and teacher plays the role of facilitator of learning.

10. Self exercise (Refer 2.4.1 and 2.4.2).

2.8 GLOSSARY

Accommodation - Accommodation is a term developed by Jean Piaget to describe the process in which we modify existing cognitive schemas in order to include new information.

Adaptation - Adaptation refers to an individual's ability to adjust to changes and new experiences, and to accept new information. The ability to adapt helps us grow mentally and continually develop.

Assimilation - Assimilation is a cognitive process that manages how we take in new information and incorporate that new information into our existing knowledge.

Behaviourism - Behaviorism defines learning as a more or less permanent change in behaviour. In behaviourism, the learner is viewed as passively adapting to their environment.

Cognitivism - Cognitivism involve how we think and gain knowledge. Cognitivism involves examining learning, memory, analysis, synthesis, problem solving skills, and intelligence.

Concept Mapping - Concept mapping visually illustrates the relationships between concepts and ideas. Concept maps begin with a main idea (or concept) and then branch out to show how that main idea can be broken down into specific topics.

Constructivism - Constructivism is often divided into two aspects: Social Constructivism (based on the work of, e.g., Vygotsky) and Cognitive Constructivism (based on the work of, e.g., Piaget). Constructivism revolves around the notion that learners construct new knowledge based on their existing knowledge; constructivism builds on this idea by maintaining that this process happens most effectively when the learner is in the process of constructing their knowledge. See also Social Constructivism.

Contiguity - Contiguity is a behaviourist approach that states, for learning to occur, the response must occur in the presence of or very soon after a stimulus is presented, or an association will not occur. In essence, this is a behaviourist view based on the idea that learning will occur only if events occur relatively close together in time.

Internalization - Internalization is the process of acquiring learning and to learn something so that it can be used as the basis for production whenever required.

Mastery learning - Mastery learning refers to a category of instructional methods which establishes a level of performance that all students must master before moving on to the next unit/class (Slavin, 1987).

Minimum Levels of Learning (MLL) - Expected learning outcomes defined as observable terminal behaviours in a subject at a particular standard.

Reinforcement - The process of encouraging or establishing a belief or pattern of behaviour. Positive feedback leads to reinforcement.

Stimulus – An object or event that elicits a sensory or behavioural response in an organism.

UNIT 3 APPROACHES TO EVALUATION

Structure

3.1 INTRODUCTION

In Unit 1 and 2 of this Block, we have discussed about the purpose and perspectives of assessment. We have also discussed that assessment is an integral part of teaching-learning process and assessment helps in enhancing learning of the learner. In this context, you have already learnt the concepts of 'assessment for learning' and 'assessment of learning'. As a student teacher, you need to understand various approaches to evaluation appropriate for different purposes.

This Unit basically caters to discuss on various approaches to evaluation. We usually use three approaches of evaluation in assessing the student's performance in the school. They are: placement, formative, diagnostic and summative evaluation (on the basis of types and functions of evaluation); internal and external evaluation (on the basis of school practices); and norm-referenced and criterion-referenced evaluation (on the basis of nature of reference).

Discussion in this Unit will make you understand the purposes and processes of using the above three approaches of evaluation in the school with examples.

*[**Note:** IGNOU Programmes, B.Ed. (ES-333), D.El.Ed. (BES-002) and CPPDPT (BES-052) have been referred to develop this Unit]*

3.2   OBJECTIVES

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

- explain placement, formative, diagnostic and summative evaluation;

- distinguish between formative and summative evaluation;

- explain internal and external evaluation;

- distinguish between internal and external evaluation;

- describe norm-referenced and criterion-referenced evaluation;

- distinguish between norm-referenced and criterion-referenced evaluation; and

- explain the processes involved in construction of criterion-referenced tests.

3.3   APPROACHES TO EVALUATION : PLACEMENT, FORMATIVE, DIAGNOSTIC AND SUMMATIVE

Assessment is conducted in different phases of the teaching learning process. We carry out assessment before the beginning of the teaching-learning process; during the teaching-learning process and at the end of the instructional process. Approaches of Evaluation on the basis of its types and functions can be classified as follows :

- Placement evaluation

- Formative evaluation

- Diagnostic evaluation

- Summative evaluation

Each of four types of evaluation serves different purposes. In the teaching-learning process, evaluation starts with placement evaluation and ends with summative evaluation. All four types of evaluation are important, and are unique in their functions. The four types of evaluation and their functions are diagrammatically presented in Table 3.1 for your understanding.

Table 3.1 Types of Evaluation and their Functions

Areas of Function	Types of Evaluation and their functions
Before instructional process	*Placement evaluation* (to know entry behaviour)
During instructional process	*Formative evaluation* (to know mastery in content)
	Diagnostic evaluation (to solve learning difficulties)
After instructional process	*Summative evaluation* (to certify the learner)

Table 3.1 shows different types of evaluation which are conducted in teaching-learning process. Generally, evaluation starts with measuring the entry behaviour of the learners and conditions till the judgement of their terminal behaviour. Let us discuss the main purpose and functions of each type of evaluation.

3.3.1 Placement Evaluation

Placement evaluation can be defined as a type of evaluation that provides information to the teachers about the learners to whom he/she deals with relating to their existing knowledge and experiences based on that the teacher designs to teach new knowledge. You have seen in Table 3.1, placement evaluation is conducted before undertaking the teaching-learning activities. It is basically used to measure the entry behaviour or existing knowledge of the learners. Another purpose of placement evaluation is to know whether the learner is able to acquire the new learning experiences based on his/her previous knowledge. The key word which is used for placement evaluation is the "entry behaviour". Assessment of entry behaviour is done just before teaching starts. In the teaching-learning process, before teaching a new topic, teacher should know the previous knowledge of students. This helps teacher to organise teaching-learning activities according to the previous knowledge of learners. The technique of introducing a lesson by asking certain questions from the previous knowledge of the students is related to the topic taught or by any other techniques like demonstrating something, telling a story, doing a role play, etc. are also the examples of placement evaluation. In other way, conducting a type of entrance examination for selecting learners to a particular course is also example of placement evaluation.

3.3.2 Formative Evaluation

For the first time in the year 1967, Michael Scriven used the concept of formative evaluation while working on curriculum evaluation. According to Scriven (1991), *"Formative evaluation is typically conducted during the development or improvement of a programme or product (or person, and so on) and it is conducted, often more than once, for in house staff of the programme with the extent to improve"*. If we analyse the definition, it is clear that the purpose of conducting formative evaluation is to monitor the learning progress of the learner. Though initially the concept of formative evaluation coined in the area of curriculum development but subsequently the term got familiar to use in the teaching pedagogy and the process of teaching and learning. It is also conducted to know whether the learning objectives are being achieved or not. The key word in formative evaluation is learning progress. As shown in Table 3.1, formative evaluation is considered as the second stage of evaluation which is conducted during the teaching-learning process. The first stage of evaluation is the placement evaluation . Formative evaluation starts from the very beginning of designing instruction and it continues till the end of the course/instruction. Conducting unit end examination, monthly examination, quarterly examination, half-yearly examination, etc. are the examples of formative evaluation. It provides feedback to the teachers to know effectiveness of their teaching and modification required and the learners to know the progress of their learning. It also provides scope for diagnostic evaluation. The salient features of formative evaluation are as follows:

- It builds on the prior knowledge, and experiences of the learners, and ensures learner friendly assessment.

- It helps in enhancing the learning abilities of the learner.

- It provides scope for the use of variety of activities, and various tools and techniques for promoting holistic development of the learners.

- It ensures learning in a non-threatening and supportive environment.

- It provides descriptive feedback to children for realising their strengths and weaknesses.

- It provides a chance to the learners to reflect on their performance, as it realises the role of motivation and self-esteem of students learning.

- It encourages learners to understand the criteria/parameters that have been used to judge their performance.

- It helps learners to actively and continuously engage in learning.

- It provides feedback to the teachers to use teaching strategies according to the needs of the learners.

- It is diagnostic and remedial, formal and informal approach of assessment.

Formative evaluation supports for continuous and comprehensive evaluation of the learners. It provides scope both to the teachers and the learners to establish a continuous assessment culture in the classroom (see Figure 3.1).

Figure 3.1: Components of formative evaluation culture in the classroom
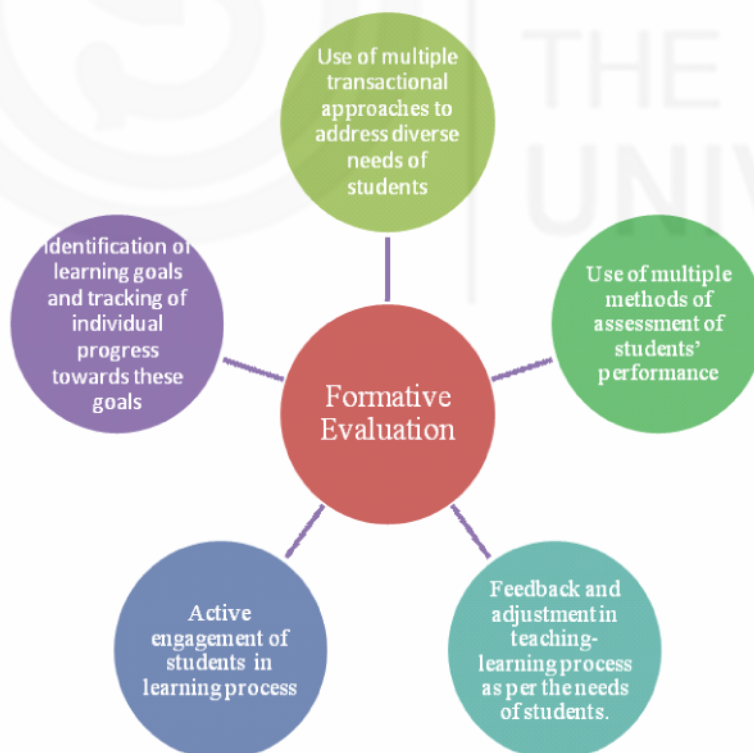
We use a variety of tools and techniques for conducting formative evaluation. The use of tools and techniques are decided keeping in view the subject/topic being taught, the abilities of the learners and learning objectives we want to assess. Central Board of Secondary Education (2010) and Kendriya Vidyalaya - Zonal Institute of Education and Training (2012) suggested to use the following tools and techniques in assessment of the progress of learners.

Table 3.2: Tools and techniques used in formative evaluation

Tools	Techniques
Questionnaire	Examination
Observation schedule	Assignments
Interview schedule	Quizzes and competitions
Checklist	Projects
Rating scale	Debates
Anecdotal records	Elocution
Document analysis	Group discussions
Tests and inventories	Action plan
Portfolio analysis	Experiments
	Worksheet
	Seminar
	Symposium
	Survey

*(**Source**: CBSE, 2010, p.29 and KV-ZIET, 2012)*

It is essential for teachers to realise, that they do not need to always use the formal unit tests or performance tests; instead they should integrate formative assessment in their day-to-day classroom practice in various ways, such as:

- Observation during classroom activities;

- Non- verbal facial expressions of children;

- Classroom discussion and homework review;

- Informal question – answer sessions;

- Classroom activities where children make presentations, such as, presentation of project reports, etc;

- Student feedback periodically collected by the teacher on teaching- learning process;

- Self –evaluation of children on different activities; and

- Maintenance of reflective journals by teachers which are reviewed by them periodically.

The above aspects of assessment of learners performance can be done by the teachers in daily teaching or periodically as per the situation and scope.

The use of any particular tool or technique depends on the nature of topic being discussed, nature of activities undertaken, and the level of children involved in these activities. We may often need more than one assessment tool/technique to have comprehensive formative assessment. As example, if we practice

'presentation of project' as a technique of assessment in the class, we can equally use the portfolio as a technique for assessment periodically. The learners will make their portfolio periodically where presentation of project which has already presented by the learners can also be preserved and included in the portfolio for periodical evaluation.

3.3.3 Diagnostic Evaluation

Diagnostic evaluation is conducted along with formative evaluation during the instructional process. It is carried out based on the data obtained from formative evaluation. Diagnostic evaluation is specially conducted to identify and remove the learning difficulties of learner if it is observed and found during the formative evaluation. For example, if a learner couldn't understand certain concepts in a particular subject and continuously performing poorly in that subject, we conduct diagnostic test to know the causes of the difficulties and accordingly provide them remedial treatment to overcome the difficulties. The key word in diagnostic evaluation is identifying of 'learning difficulties'. Diagnostic evaluation not only solves learning difficulties of learners but also identifies and provides remedies for personal, physical and psychological problems. This can be exemplify as sometime you may find that few students in your class are very nervous to come forward and say something, tendency of fear towards the friends and teachers, suffering certain psycho-social disorders and physical disorders.

3.3.4 Summative Evaluation

Summative evaluation is used to find out the extent to which the instructional objectives have been achieved at the end of a terminal period. It is used primarily for assigning course grades or for certifying student's mastery of the intended learning outcomes at the end of a particular programme. The techniques used for summative evaluation are determined by the instructional objectives. For this evaluation, both external and teacher-made tests are used. Although the main purpose of summative evaluation is assigning grades or marks, it also provides information for judging the appropriateness of the course objectives and the effectiveness of instruction.

So far we have discussed four types of evaluation. Though all types of evaluation are conducted in teaching-learning process, but the use of formative and summative evaluation are popular among them. You might have observed the similarities and differences among them. The similarity among them is that all are concerned with the assessment of learning. All are conducted at different phases of the teaching-learning process. But they differ in terms of their purposes, processes, techniques and tools used in collecting evidences, processes of providing feedback, functions, time/period in the teaching-learning process and their uses for future purposes. We can summarize summative evaluation as follows:

- It is conducted after the completion of the instruction in a term, a course or a school session.

- It 'Sums-up' how much a student has learnt over a period of time.

- It focuses mostly on assessing the scholastic abilities of the children.

- It contributes to the over all grading and certification of the children.

- It is mostly structured and formal approach to assessment of learning;

- It provides terminal feedback, both, to the teacher and the children to re-design their teaching and learning accordingly.

In the next section we will discuss about the differences between formative and summative evaluation. But before that you should undertake an activity.

Activity 1

In case you observed in your class that a student is paying very less interest in Mathematics and continuously getting less marks in the subject, as a teacher, how will you deal with that student and help him/her to solve the problem?

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Check Your Progress 1

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

b) Compare your answers with the ones given at the end of the Unit.

1. What is the most important objective of formative evaluation?

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2. Write any two purposes of using summative evaluation.

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3.4 DISTINCTION BETWEEN FORMATIVE AND SUMMATIVE EVALUATION

In the Section 3.3 you have studied about the concept and processes of using various types of evaluation including the formative and summative evaluation. In this Section we will focus on the differences between formative and summative evaluation. We can differentiate between formative and summative evaluation based on different parameters. Table 3.3 will make you understand how both are different from each other.

Table 3.3: Distinction between formative and summative evaluation

Parameters	Formative Evaluation	Summative Evaluation
Time of use	• During the process of instruction.	• At the end of a • term/semester or session
Purpose	• To know the progress and mastery of learning. • To provide feedback both to the learners and teachers. • To provide data for summative evaluation.	• To certify and grade the learners. • To provide feedback to the learners for further study. • It includes formative evaluation.
Learning Objectives	• Are related with the topic taught. • Are limited in scope.	• Are related with the objectives of the course and the programme. • Are vast in nature.
Process	• By classroom observation • Can be conducted through oral and written teacher made tests. • By conducting peer and group assessment. • Mostly internal in nature. • It supports criterion-referenced evaluation. • Formative evaluation is usually a quick evaluation.	• By conducting term end examination. • Mostly external in nature. • By conducting mostly written type of examination. • By using teacher-made as well as standardized tests. • It supports norm-referenced evaluation. • Output of formative evaluation can be used in summative evaluation.
Tools and Techniques used	• By using varieties of assessment tools and techniques like text, questionnaire, scale, schedule, checklists, portfolios, quiz, debate and discussions, role play, dramatization, etc.	• Can only be conducted through written test, paper and pencil test.
Product	• Enable learners to know their progress in learning, difficulties they face and the ways to remove those difficulties. • Enable the learners for their continuous and comprehensive development. • Provide suitable remediation for further development of the learners.	• Award and certify the learners. • Make them enable and eligible to pursue further educational courses/ programmes.

Activity 2

Collect an annual progress report of any secondary school student and analyse the progress report in view of formative and summative components of assessment. Write your observations.

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3.5 INTERNAL AND EXTERNAL EVALUATION

In the Section 3.3 of the Unit, you have learnt about formative and summative evaluation. You know that the formative evaluation is mostly internal in nature which is highly based upon formal and informal observation of the students in various activities. Summative evaluation is a type of external evaluation as the external experts are engaged in setting the question papers, evaluating the answer scripts, and also conducting viva-voce of the students. Various education committees and commissions at different times have emphasized balancing internal and external evaluation in the school system. Keeping in view the above, in this Section we will discuss the nature of internal and external evaluation with their strengths and weaknesses.

3.5.1 External Evaluation

When examinations are organized and conducted by an agency other than the institution giving instruction to the students, and all the students of the group of institutions come together under the perview of the agency, the evaluation carried out is regarded are an external evaluation. To this extent, the public examinations in our country are conducted by the appropriate school boards are external evaluation. In such public examinations, the teachers concerned do not get directly involved in the process of evaluation. Ordinarily in such public examinations are not conducted with a specific objective in view. Thus a public examination may be conducted and the results of such an examination utilized for a large number of purposes. Actual testing is restricted to a candidate answering a question paper or a series of question papers each within a set time-limit.

Also when the examinations are conducted by the same institution which teaches but tests are prepared and marked by persons other than the ones who teach the group, the evaluation is called external. Thus when the teacher who teaches is not involved in the evaluation process, the evaluation should be called external.

3.5.1 Internal Evaluation

During the last decade, the popularity of internal evaluation has been increased. Most of the continuous and comprehensive evaluation is conducted by internal evaluation system. Internal evaluation supports formative and diagnostic evaluation. This is conducted to know the learning progress of the students and the difficulties that they face during the process of teaching and learning. Internal evaluation is also provides a base for remedial teaching to the identified students. The criteria that followed for internal evaluation are: evaluating the involvement of the students in the teaching-learning activities of the class; setting of the question paper by the class teacher teaching that class; and conduct of the examination vis-à-vis evaluation of the scripts by the teacher himself or herself. In the present days, internal evaluation in the school is quite popular and it is conducted by observation, peer evaluation, using portfolios, projects, discussions, demonstrations, etc.

3.5.3 Strengths and Limitations

The teacher concerned has always been regarded as the best judge of a student. Based on this principle, internal assessment of the students by teachers of the institution concerned has been adopted by many institutions in our country and elsewhere. In an internal assessment, it is necessary that a variety of tests are administered and proper statistical weightages are given to each and then an over-all grade is arrived at, as a true index of the capabilities of a student. There are also other aspects in internal assessment of different sections in a class. If a class has four sections and each section is taught by a different teacher, what will be the procedure adopted to realize uniformity in the evaluation. As like uniformity in internal assessment within different sections in a class within the school is an issue, the uniformity of internal assessment between schools are also equally an issue. Even an internal assessment requires continued research to improve its reliability and validity. Favouring attitude of the teachers to few students is also again an issue of internal evaluation. Although, certain demerits of internal assessment are there, still it is widely used in the system as it is realized that the teachers those teach the students are the best person in judging the abilities and over all performance of the students.

To minimize the limitations of internal evaluation, the popularity of external evaluation has also been realized. It is always a debate between the educationists and the teachers to determine the percentage of contribution for internal and external evaluation. It has always been observed that the percentage of external evaluation is more in comparison to internal evaluation specially in the board classes like 10th or 12th classes, but in class examinations, it is realized that the percentage of internal and external evaluation is more or less equal. The merits of external evaluation system is that the teacher evaluate the students hardly know to them earlier, so very rare chances are left in favour of a particular student whereas it has also realized that a major part of students evaluation should not be given in the hands of the external evaluation as they are least concerned about the continuous development of the students. Only the class teacher can be a best evaluator.

Activity 3

Visit a near by Secondary School and interact with the head teacher about the internal and external examination that they conduct in their school. Write the way they conduct the external examination.

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Check Your Progress 2

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

b) Compare your answers with the ones that are given at the end of the Unit.

3. Define external evaluation.

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4. Why does internal evaluation is getting popularity these days?.

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3.6 NORM-REFERENCED AND CRITERION-REFERENCED EVALUATION

The alternative approaches to educational testing that must be thoroughly understood are norm-referenced and criterion-referenced testing. This classification of test is also called as the typology of nature of reference. Although there are similarities between these two approaches to testing, there are also fundamental differences between norm and criterion referenced testing. Their

differences are based upon their construction and interpretation of the scores. Let us understand, about norm-referenced and criterion-referenced evaluation.

3.6.1 Norm-referenced Evaluation

When we measure one's relative position in a well defined known group, we usually use the norm-referenced test. As example, if we want to know Sudhir's rank or position in the 10th Board Examination held in 2017 in the State of West Bengal, that can be done through the norm-referenced test. In this example, we compare Sudhir's performance with others performance in that group. Let us take another example. Suppose a student secured 70 marks in English. The mark 70 is an individual score which provides very limited interpretation. A single score never provide us the interpretation like how good or how poor the student is in English. The individual score gives certain meaning when it is compared with the other scores in the group. Norm-referenced test is also a type of standardized test. The procedure followed for developing a standardized test is also followed for developing norm-referenced test.

According to Nayak and Rath (2010), the various procedures adopted for norm-referenced evaluation are as follows:

(i) When marks are evaluated with reference to average, it is norm-referenced evaluation because the average is based upon the obtained scores. If it is to be used, as measure of variability which shows the scatter of the scores, should be taken into account.

(ii) We can express a mark in terms of its standing in the group. It is clearly understood but it has certain difficulties. The 7th rank in a group of 10 does not have same meaning as the 7th rank in a group of 100. If number of candidates is not the same, we cannot compare the merit of a student in different examinations in terms of ranks.

(iii) Standing in terms of grades may serve the purpose. But, sometimes, scores are converted in to grades, such as A,B,C,D & E, etc. is not precise because grades cannot be added or averaged.

(iv) Standing or a rank may be expressed by percentile norms. It is more precise than a grade report and comparable in precision with a rank report.

Norm-referenced achievement tests are more familiar. The norm may be set up on a local, state or national group depending upon the use of the result. As the norm-referenced tests are prepared for the wide range of the population, so the test items are generally retained which are average in difficulty value. It means that the very easy and difficult items are rejected. There are several procedures to determine the standing positions of a student. We can not say that a single method or approach is most comprehensive and accurate. All approaches have its own merits and limitations. The methods are used in different situations based on the nature of the test and nature of comparison.

3.6.2 Criterion-referenced Evaluation

Criterion referenced evaluation is related to performance of the students in a well defined learning task. It has nothing to do with the norms or relative rank or position of students in any well defined group. As example, if we say that Sudhir successfully solves 60 percent of questions in the chapter of 'Modern

History' in class-IX text of History, is rightly an example of criterion-referenced evaluation. In this example, the performance of Sudhir is defined in relation to a learning task i.e., chapter of 'Modern History' in the class-IX text of History. Thus in contrast to a norm-referenced evaluation we can refer an individual performance to a pre-determined criterion which is well defined. In criterion-referenced evaluation, a criteria is fixed i.e. a fixed standard in a learning task, say 50% or 60%. In it, the individual's status is ascertained with respect to some performance standard. The standard is the measure representing the criterion, the criterion itself being a specified performance. In criterion-referenced evaluation, there is no question of comparing one student with the other in it. To conclude, we can say, if we want to select the students who have achieved a particular level of performance, we seek criterion-referenced evaluation but if we want to select a particular percentage or number of students, we prefer norm-referenced evaluation to criterion-referenced evaluation. In the next section, we will discuss in more detail about the distinction between norm-referenced and criterion-referenced evaluation.

3.6.3 Distinction between Norm-referenced and Criterion-referenced Evaluation

After reading the earlier sections, you might have understood the concept and purposes of developing and use of criterion-referenced and norm-referenced evaluation. Let us discuss, how both of them are distinct and different from each other.

Table 3.4: Distinction between norm-referenced and criterion-referenced evaluation

Parameters	Norm-referenced Evaluation	Criterion-referenced Evaluation
Time of use	• At the end of a term, naturally school board examination.	• During the progress of instruction, like conduct of class examination.
Similarities with other tests	• It supports summative evaluation. Standardized tests are suitably used.	• It supports formative and diagnostic evaluation. Teacher-made tests are usually used.
Purpose	• To know the relative position rank of the students in a well defined known population or group. • Comparison of a student is possible with other students or groups.	• To know individual performance in a well defined learning task. • No comparison is possible with other students, only standard of a student can be defined in relation to a learning task i.e. called criterion.
Relative or Absolute	• A norm-referenced test is used to ascertain an individual's status with respect to the performance of other individuals on that test.	• A criterion-referenced test is used to ascertain an individual's status with respect to a defined achievement domain.
Instructional Objectives	• No instructional objectives are fixed. • Course objectives are given importance.	• Specific instructional objectives are developed, which may defined as a standard.

Parameters	Norm-referenced Evaluation	Criterion-referenced Evaluation
Population	● This is organized on a vast population, like students in a State, region etc.	● Can be carried out within a limited area, even in a school, class or section.
Process of the development	● All the steps of standardizing a test are followed. ● Reliability, validity, norm, item difficulty, discrimination, etc. are calculated. ● Is a type of external evaluation.	● A teacher-made achievement test can be used in determining the content validity. ● Can be used without knowing the reliability, validity, etc. ● Mostly internal in nature.
Type of test items	● Can be used both in objective and essay type of items. ● Popularly, objective items are mostly used.	● All types of items can be taken.
Comprehensive-ness of the Test	● A norm-referenced test typically measures a more general category of competencies, knowledge, or aptitude. ● A single norm-referenced test covers many criterion-referenced tests.	● A criterion-referenced test typically focuses on a more specific domain of examinee behaviours. ● Many criterion-referenced tests categorically provide shape of a norm-referenced test.
Product	● Can be used to certify or grade the students. ● Can also be used to provide placement to the students for higher study and to get entry in various job fields as well.	● Can be used to know the learning progress and also to identify the learning difficulties of the students. ● Minimum Level of Learning of the students and mastery of the students on any learning task can be determined. ● This can help the teachers to know the entry behavior of the students and accordingly they can plan for new teaching. ● On the bases of criterion-referenced evaluation, remedial instruction can also be possible to provide to the identified students.

Activity 4

Cite one example each in norm-referenced and criterion-referenced evaluation and also discuss the purpose they are used.

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Check Your Progress 3

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

b) Compare your answers with the ones given at the end of the Unit.

5. Define norm-referenced evaluation.

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6. Define criterion-referenced evaluation.

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7. Write any two differences between norm and criterion-referenced evaluation.

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3.7 CONSTRUCTION OF CRITERION-REFERENCED TESTS

There are varieties of criterion-referenced tests. Due to confusion in the nature and scope of such tests, it is quite difficult to provide clear cut guidelines for their construction. However, keeping in view the basic tenets of criterion-referenced tests, the following steps can be suggested. Criterion referenced test is highly used in the schools by the teachers. Some of these steps may be combined while others can be split up into two or more steps. Steps of norm-referenced test are not discussed here as it follows the entire process of test standardization and development of norms for its use. Test standardization has been discussed in Block-2 of this course.

i. **Identification of subject area:** The first step in the development of criterion-referenced test is the decision about the subject matter area to be worked out. For example, one may take up Mathematics, English, Environmental Studies etc. depending upon the need of the area and the resources one can utilize for one or more subject areas.

ii. **Selection of unit/topic:** After the decision taken about the area, the next step is to select the unit on which the test is to be developed. This unit may have more than one modules/sections/domains which comprise the total unit. Depending upon the need, one or more than one sections or chunks of content may be taken up for test construction.

iii. **Delineation and description of domain of testing:** Since domain refers to a particular segment of the content, one may examine topic and delineate it into various segments which can be developed into well defined separate sub-domains. Each sub-domain can then be analyzed in terms of facts, concepts, principles, processes, etc. That may be arranged in order of their increasing complexity. Description of sub-domain is very important as it provides the basis for item writing; it should reflect clearly the nature and scope of the content specification in sequential, hierarchical or development order.

iv. **Specification of domain objective:** Having decided about content elements of a domain selected, the next task is to formulate the instructional objectives on expected learning outcomes which may be categorized in terms of knowledge, understanding, application, skills, attitudes, etc. These objectives should be stated so precisely that the performance of students is clearly interpretable in terms of adequacies or inadequacies of intended learning outcomes. For more clarification, sample prototype items can be framed, that may accompany each specific objective.

v. **External review of steps (iii) and (iv):** The tasks identified in steps (iii) and (iv) should be reviewed by those who are not involved in identifying the domain and its descriptions in terms of the content elements and the specific objectives. However, a teacher who teaches that particular subject may also be involved in this task so that he/she may be able to clarify doubts, if any, raised by the external reviewers. The main purpose of this review is sharpen domain description and the specific objectives in order to make them more realistic and functional. For this, sample items accompanying the specific objectives bare checked for their congruence with each objective and content elements.

vi. **Internal review:** As step (v), the internal reviewer, i.e. the constructor himself/herself will examine all specific objectives along with one or more sample items which accompany each specific objective. The focus of this review is on sharpening the specific objectives further, if necessary.

vii. **Construction of test forms A & B:** It is desirable to develop two forms of test, A & B so that one of the two could be used after post instructional remedial measures. Moreover, it would be easier to compute reliability on the two forms. A copy of the key or the correct answer should accompany the test and may be returned by the developer. As far as the construction of items is concerned, these items are to be developed in accordance with the domain description. This is, however, not always possible or practical, especially, in teacher made test. Therefore, in teacher made tests, only one test form will do.

viii. **Internal review of step (vii):** An internal review by the teacher is essential after the test is ready, i.e. after step (vii). The purpose of this review is to see whether all questions in the test are congruent with the specific objectives, besides, having a cursory check for any glaring deficiencies in the test e.g. placement of key, arrangement of items, sufficiency of instructions etc. It is at this stage that items can be further improved and the congruence of items with the specific objective is ensured.

ix. **External review of the test:** Prior to the field trail, the test may be re-examined by the practicing teachers. The main purpose is to detect content flows, language clarity, and check for congruence of items with the domain description. This should be done preferably by those very people who do external review for steps (iii) and (iv) as mentioned under step (v).

x. **Field trial of the test:** At this stage, the test may be tried out on a limited number of students, say 5 to 10. It is better that the subject teachers other than those involved in the development of the test, administer these tests. However, one team member of the developers may accompany them in order to meet the queries, if any, relating to the content of procedure that might arise during try out of the test. This is possible only if the member who is conversant with the development of the test is associated in the field try-out.

xi. **Internal review:** After step field trial, internal review would provide a last look. Internal review would depend on the changes, if any, that have been made as a result of the review or the field try-out. The purpose of this review is to certify the final format of the test and pass it for print or use.

xii. **Final form of the test:** Now the final form of the test is ready for use and may be administered after having it published, depending upon the size of the group to which the test is to be given. A sign-off sheet may be used to accompany the various steps as they move from step (i) to (xii). Each test may be kept in a folder to which the signed sheet may be attached. This enables the developer to keep track of the given test. To monitor the progress of the test as it goes through various stages of development, a master progress sheet can be used.

xiii. **Using the test in a classroom:** Test copies can now be used in the classroom. The test can be administered to test the domains which are covered by the test. The domains being tested can be arranged according to the needs of the teacher and administered accordingly. Students' responses may be recorded and tabulated in accordance with the scheme of analysis which has to be mostly in terms of specified domain objectives.

xiv. **Finding validity and reliability of the test:** Since the data are now available on the test, we may find out the reliability and validity of the test using various techniques.

Activity 5

Select a chapter/unit of any subject of school text that you teach and prepare a small criterion-referenced test. Finalize the test by obtaining the content validity and trying it out on ten students. Write the detail process of preparing it.

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3.8 LET US SUM UP

In this Unit, we discussed various approaches to evaluation such as placement, formative, diagnostic and summative evaluation; criterion and norm referenced evaluation; and internal and external evaluation. On the basis of functions of evaluation, we discussed placement, formative, diagnostic and summative evaluation. On the basis of school practices, we discussed internal and external evaluation. On the basis of nature of references, we discussed norm-referenced and criterion-referenced evaluation. We have also discussed the distinction between various types of evaluation such as formative and summative; and norm-referenced and criterion-referenced evaluation.

In nut shell, you are acquainted with assessing existing knowledge of the students by placement assessment; get an idea about the progress of the learners and solving their difficulties by conducting formative and diagnostic evaluation; and grading or certifying students by conducting summative evaluation. Further, you are acquainted with the importance of conducting both internal and external evaluation for certifying the students. Finally, the usefulness of criterion and norm referenced tests have also been discussed which the teachers, usually use in their teaching.

By reading this unit you might be acquainted with the techniques and tools used for different types of evaluation and also you might have realized that evaluation is not a task of the teacher to evaluate achievement of the students, rather it is equally important for the learners to acquaint them with self assessment techniques and enhancing learning of their own. After all, the soul purpose of any assessment strategy is to empower the teacher as well as the learner to get feedbacks and modify their teaching-learning behavior.

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3.10 ANSWERS TO CHECK YOUR PROGRESS

1. To know mastery of the students on the learning task and also to identify the learning difficulties of the students and accordingly to provide them remedial instructions.

2. To know the terminal behavior of the students and also to certify and grade the students.

3. When the tests are prepared and evaluated by persons other than the ones who teach the students is called external evaluation.

4. Internal evaluation is popularly used because to make assessment is an integral part of teaching-learning process; to help the learners to enhance their learning through assessment techniques; and to make assessment continuous and comprehensive.

5. To know one's relative position/rank in a well defined known group.

6. To know one's performance/achievement in a well defined learning task.

7. In norm-referenced evaluation, individual performance is compared with the performance of group or other students in that group whereas individual performance in a learning task is analyzed in criterion-referenced test. Norm-referenced test follow all the steps of test standardization for its development whereas teacher-made test are used in criterion-referenced test.

UNIT 4 ISSUES, CONCERNS AND TRENDS IN ASSESSMENT AND EVALUATION

Structure

4.1 INTRODUCTION

You have studied the concept and purpose of assessment and evaluation in Unit-1; context and perspectives of assessment in Unit-2; and various approaches of evaluation that we use in school system in Unit-3 of this Block. From the previous units, you might have understood the basics of assessment and evaluation. In the present Unit, we discuss the issues, concerns and trends in assessment and evaluation.

You might be aware of the recommendations of various committees and commissions on reforms in examination and initiations taken by the stakeholders in this regard. However, even today, the system of examination is a matter of concern. Various measures for improving assessment practices in schools have been taken in the near past. They are implementation of continuous and comprehensive evaluation; emphasis on making assessment as an integral part

of teaching-learning process; use of ICT in the process of assessment; and emphasis on informal and formal assessment.

Keeping in view the above, the present Unit has been designed to throw light on major issues and concerns in educational evaluation. In addition, recent trends and developments in the field of educational evaluation such as : question bank; semester system, choice based credit system; marking and grading system; on-demand; online; and computer based assessment system have been discussed in this Unit.

4.2 OBJECTIVES

After going through the Unit, you should able to:

- describe major issues in educational assessment and evaluation;

- list down recent trends in educational evaluation;

- describe the characteristics of learner-centered assessment techniques;

- discuss the merits and demerits of question banks;

- describe semester system along with its features, merits and demerits;

- discuss marking and grading system of evaluation;

- describe the features of continuous internal evaluation;

- explain the concept of choice-based credit system (CBCS);

- explain open book examination;

- explain the concept of on-demand and online examination; and

- discuss the application of computer in examination.

4.3 ISSUES AND CONCERNS IN ASSESSMENT AND EVALUATION

As discussed in the previous Units, you might have understood the importance of assessment and evaluation in the process of teaching and learning. Time and again starting from the independence of India, all most all the education committees and commissions have stressed upon reform in examination system in schools and higher education. Recommendations are given by the education commissions concerning the issues such as : making assessment and evaluation child-centred, objective based, assessing all aspects of child development, integrating assessment in the process of teaching and learning, use of ICT in assessment, making assessment a continuous process, introducing internal and external assessment system, developing question banks, marking vs grading, etc. Keeping in view the above issues and concerns, this section of the Unit will discuss criteria of assessment, how to interpret it, and possible errors in assessment.

4.3.1 What is to be Assessed?

In any educational system, there are three main components i.e. input, process and product. For improving the quality of education, it is essential that high

quality inputs in terms of human and physical resources should be provided. This helps in improving various administrative and academic processes in the educational system. Appropriate inputs and effective processes ultimately results in better educational outcomes (product). Our present system emphasises more on the output not on the input and the process. Our evaluation efforts are mostly on enhancing educational achievement of students. However, no attention is paid by the teachers and administrators towards quality of curriculum transaction processes and evaluation practices adopted by the educational institutions.

Many of the teachers believe that there is a need to assess the processes as well as the products or outcomes. But what exactly, 'process' means must be explicit and transparent for students and teachers. For example, if you want to assess 'the level of interaction', how can you ensure that the students reach at 'an outstanding' level? What is 'an outstanding' level? This example raises the question of how you can confidently know the level of interaction that has taken place. Hence, it is essential that you should involve the students in the teaching-learning process and observe their behaviour regularly. In this context, the techniques of self-assessment and peer-assessment may be used by the teachers. So, in addition to evaluation of educational outcomes, the ongoing educational processes must be evaluated so as to improve the process of learning.

4.3.2 Criteria to be used to Assess the Process and Product

In the present assessment and evaluation system, the criteria is decided by the teachers (in case of internal evaluation) or the certifying agencies (in case of external board or university examination). A student getting certain percent of marks or a particular grade is declared pass or fail. Such criteria is not objective in nature, because, it lacks in describing the specific areas of development of children. Even these criteria differ from institution to institution and teacher to teacher. The examining bodies appoint a large number of examiners to evaluate the answer scripts which results in inter-examiner variability in-case of on essay type and short answer type questions. In marking system, one percent mark can change the status of a student. (For example, a student with 49 percent marks has third division and with 50 percent marks, it is second division).

Any effective evaluation system must include specific, objective and description of the performance criteria such as : ability in language acquisition, skill of analysing and comprehending Mathematics and other concepts, description of life skill areas etc. for evaluating students' performance. Criteria for the assessment can be determined by teachers, students or through consultation between the two. Any continuous and comprehensive evaluation system can be most successful when students are involved in establishing their own criteria for assessment through consultation with teaching staff. These criteria are then used to assess and grade the performance of the students. A clear understanding of the intended learning outcomes of the subject is useful starting point for determining criteria for assessment. Once these broader learning requirements are understood, a consideration of how the learning task, and criteria for assessment of that task, fit into those broad requirements can then follow. The criteria for the process and product of learning may be decided separately than to attempt to do both at once.

4.3.3 Who will Apply the Assessment Criteria and Determine Marks or Grades?

The present evaluation system has an inherent feature that it is more teacher-centric in nature and not context-based. The prevailing examination system has many ills like; subjectivity, favouritism, use of unfair means by the students to get good grades and so on. The marks or grades of the students mostly depend upon student's relation with the teacher. It is seen that students who are more close to the teacher gets good marks or grades than those students who are comparatively better in studies. The students' grades are decided according to the teachers' wishes and desires and not by the students' abilities and skills. This is a major weakness of existing evaluation system. Assessment parameters are implemented by the teachers in accordance with their own requirements and convenience. This issue needs to be seriously addressed if we wish to improve the quality of evaluation practices and overall educational processes. The students should be well informed about the criteria of assessment and the procedure of its implementation in advance. Evaluation should be a collaborative effort which must ensure the participation of other teachers and students while evaluating and awarding grades to a student. Self-assessment, peer-assessment and opinion of other teachers should be essential aspects of grading a student.

4.3.4 How will the Scores or Grades be Interpreted?

Interpretation of evaluation results depends on how the assessed or measured traits are expressed. In India, you can observe that both marking and grading system of assessment are used. It is true that at the present time, grading system is highly used for assessing achievement of the students in schools and colleges as well. Different boards of education use different grade points for assessment. Under a definite grade, you will find there are certain percentage limits. Let us understand the grading system use by CBSE for the secondary stage classes.

Table 1: CBSE grading system for secondary stage classes

Marks Range	Grade	Grade Point
91-100	A1	10
81-90	A2	9
71-80	B1	8
61-70	B2	7
51-60	C1	6
41-50	C2	5
33-40	D	4
21-32	E1	-
20 and below	E2	-

(*Source : CBSE, 2010*)

The above Table shows CBSE 9-points grading system for the secondary stage classes. According to the grading system, the evaluation is made on 9-points, starting from A1 grade to E2 grade and corresponding percentages starting from 91-100 marks range to 20 and below. As per the grading system, the secondary students in the CBSE system are getting their certificate.

4.3.5 Sources of Error in Examination

In the process of evaluation, there is a possibility of committing certain errors either as a human error, deliberate error or other technical errors. But, our efforts should be to make evaluation error free or to minimise the errors. The main sources of errors in the present examination system may be summarized under the following points:

● Errors due to subjectivity in marking by the same examiner or different examiners.

● **Errors due to biased selection of topics for asking questions:** The emphasis on different topics to be covered in the examination is not equitable and certain topics have no questions related to them in the test.

● **Errors in selection of students' abilities to be evaluated:** The main emphasis of examinations is to assess the memorization ability (understanding ability to certain extent) of the students. Application and other higher order abilities are not given due place in the examination.

● **Errors due to arbitrary time limits in examination:** The imposed time limit in the examination produces a variation in students' marks or grade which is not related to variation in students' real attainment.

● Errors due to improper evaluation conditions.

● **Errors due to choice of questions in examination:** The marks of students due to choice of questions in examination may not be a true score of his/ her abilities. This is because different questions may not have same difficulty level.

● **Errors due to assumption of addition of marks:** For obtaining a final score of student, marks on different questions are added and it is assumed that marks are of equal weightage and scale in nature. This is not true and leads to variation in evaluation.

Check Your Progress 1

Note: a) Write your answer in the space given below.

b) Compare your answer with the one given at the end of the Unit.

1. Explain briefly two major issues of educational evaluation of students.

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4.4 RECENT TRENDS IN ASSESSMENT AND EVALUATION

In the last section, we discussed about certain concerns of evaluation system and also hinted upon new trends in evaluation. In this section, we will discuss the emerging trends to make our examination system effective. Before discussing the trends, let us highlight the issues concerning suitable use of examination.

● The obtained results should be carefully systematized and conclusions should be scientifically drawn and reported to the stakeholders involved in the system including the students.

● The number of external examination should be reduced. More scientific and systematic methods of evaluation need to be devised.

● While conducting evaluation, the student's work throughout the year should be assessed.

● Evaluation procedures should include variety of techniques and tools, new types of tests among which objective type tests are of considerable importance.

● In testing performance of students focus should be on what and how much the student knows, not on what he does not know. Scoring should be objective and transparent.

● The evaluation should be treated, not as the end, but only as the means, since the purpose of evaluation is to aid education/learning in achieving its primary goals.

● Oral testing should be given a suitable place in the system of evaluation.

● Evaluation should be in parts and not at one stroke.

● There is great need for reform and improvement in the question papers employed in the prevailing system.

● The questions should be so designed that the child is stimulated to think for himself seeking for the answers. Questions to test higher abilities should be included.

● Evaluation needs to be diagnostic, comprehensive and continuous. Stress should be on performance in both scholastic and co-scholastic areas.

Keeping the above points in consideration, many new initiatives and trends are recently being witnessed in our evaluation system. Let us discuss the trends of evaluation in detail.

4.4.1 Learner-centered Assessment Strategies

Learner-centred assessment is intended primarily to inform students and teachers about what students need to do, as they are doing it, to improve their learning. As we have studied in the earlier units (Unit-3 of this Block) that evaluation of learning is often classified into two categories: formative and summative. While summative evaluation may involve a suite of evaluation tasks, formative evaluation involves ongoing evaluation to provide timely and constructive feedback to students about the progress of their learning. In contrast to summative evaluation, formative evaluation is often more learner-centered. It is true that students tend

to perform better when they are actively involved in their learning, when they are under less stress and when assessment is woven into everyday classroom activities. Under such conditions, the students are more easily and accurately able to show what they know and can do.

The main features of learner-centered assessment strategies are as follows:

- Learners are actively involved in assessment process.

- Learner-centered assessment relates to students' learning goals.

- Learner-centered assessment has explicit criteria that can be negotiated, thus the focus may vary between the learners.

- Learner-centered assessment involves multiple data sources.

- Learner-centered assessment is multimodal i.e. it allows for a range of learning preferences.

- Learner-centered assessment involves a range of skills, depending on the needs of the learners.

- Learner-centered assessment may include individual and collaborative elements.

In learner-centered assessment strategies, you should be a skilled observer and take time to carefully watch the students at work, monitoring their behaviour, interactions with others and the way the students approach to various learning tasks. You should observe each student closely on a regular basis. In learner-centered assessment, you need to think about how you can involve students in making decisions about their learning and assessment and how the assessment data can be used for improving learning among students.

To sum up, we may say that strategic learner-centered assessment is primarily intended to make students and teachers aware about how learning among students can be facilitated. Learner-centered assessment involves various strategies like continuous and comprehensive evaluation, formative evaluation, diagnostic evaluation, on-demand examination, open book examinations, portfolio assessment, self and peer evaluation and such other informal strategies which involve students in evaluation process for improving their learning levels.

Check Your Progress 2

 Note: a) Write your answer in the space given below.

   b) Compare your answer with the one given at the end of the Unit.

2. Write any three features of learner-centered assessment.

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4.4.2 Question Banks

Question banks are databases of questions that can be shared between courses and programmes of study. A question bank is the list of questions from the concerned subject. In other words, a question bank is a planned library of test items pooled through cooperative efforts for the use of students, teachers and evaluators. Question banks have been called by other names also, such as; 'item-banks', 'item pools', 'item collections', 'item reservoirs' and 'test item libraries'. A 'question bank is a collection of large test items developed by a group of trained and experienced professionals and printed on index cards or stored in the memory of a computer along with certain supporting data and capable of being reproduced whenever needed (Aggrawal, 2005)'. Question banks are searchable so that questions meeting specific criteria can be drawn from them to create assessment. The question banks allow users with the appropriate access to create questions. A question bank serves many purposes. It can be used by teachers at the pre-testing stage, for setting question papers, for measuring learners' achievement, etc. Questions for the question banks should be prepared by practicing teachers. Enrichment of questions by updating, discarding, replacing, modifying and adding new questions should be a continuous process. In question banks, all types of questions, such as objective type, short answer type as well as long answer type that could be on a particular topic are included. These question banks are of immense importance from teaching and general examinations, competitive examinations and entrance tests. Large scale public examinations involving wider content coverage can enhance the significance of question banks.

The following are the main reasons for preparing question banks:

- to meet the need of increasing number of students in various courses;

- to increase in knowledge and facing competition in all walks of life;

- to devising more reliable, valid, comprehensive, fair and objective testing techniques;

- to arrange more efficient, economical and comprehensive testing programmes; and

- to exploit the scientific and technology devices for data processing so as to increase the efficiency of testing programmes.

Question bank can play an important role in making testing techniques more efficient and objective. We shall now discuss the merits and demerits of a question bank.

Merits :

- There is a least chances of leakage of question paper as even experts do not know whether their questions have been included in the test or not.

- The teachers know what types of questions are to be asked in the examination. So, they teach accordingly.

- Question papers can be set immediately or in emergency.

- The students will be aware of as to what type of questions will be asked in the examination.

- Question bank helps in facilitating learning from various angles.

- Question bank helps as a guide for paper setters.

- Objectivity in evaluation is quite obvious as many teachers and experts take part in item construction.

- Question banks are also used for admission and examination purpose.

- Question banks improve overall validity of examination.

- Due to standardized scoring procedure, reliability and objectivity of test results is maintained.

- Sample tests drawn from the bank may be safely assumed to be parallel or equivalent in all respects and the problem of non-comparability of marks over time or years is solved.

- Question banks may be used by teachers to get feedback for improvement of teaching-learning process.

Demerits :

- Educators do not have uniform opinion with regard to secrecy of the question bank.

- Originality lacks in the construction of questions for question papers.

- In the present set-up, when examination aim is to pass or fail, there is no justification of such banks for students and teachers.

- It requires subject specialization and special training on the part of item-writers.

- It requires proficiency in the techniques of test construction on the part of item-writers.

- The item writer may not be well-versed with the psychological characteristics of the students for whom the test is to be constructed or used.

4.4.3 Semester System

Semester system came into existence as an improvement over the annual examination system. When a particular course of study is divided into different equal parts not on the basis of the session but on the basis of months and examination is conducted after the completion of every part, it is called as semester system. For example, if course of study is of two years, four semesters will be there and a three year degree course will be divided into six semesters. Under this system, a student failing in one subject in one semester is not declared to be failed, rather he is admitted to the next semester and is given an opportunity to re-study the subject and re-appear the examination in that particular subject in that semester. In semester system, examination becomes a part and parcel of the daily routine and the system no more produces any sort of stress and strain among the students. The main objective of the semester system is to broaden the outlook of the students and instil in them a sense of confidence and responsibility. The semester system is a very proactive system as it engages both the faculty and the students throughout the year in academic activity.

Semester system not only involves students throughout the year but also reduces examination burden.

Both the systems have its merits and demerits. Let us know the merits and demerits of the semester system.

Merits :

- It keeps the students engaged in studies throughout the year.

- The progress of the students is constantly assessed and continuously their knowledge gets improved.

- It allows greater interaction with teachers and students.

- It reduces workload among students as few courses are studied in a semester and the workload gets equally distributed in all semesters.

- The semester system discourages students to study at the last minute and encourage rote memory.

- Continuous internal assessment and periodical test is one of the greatest merits of this system.

- Students are free to discuss their performance and transparency in the assessment is ensured.

- It reduces stress and strain and makes learning purposeful, pleasant and joyful.

Demerits :

- Because of continuous examination in the semester system, students are constantly under the hammer of examinations.

- This system suits only to higher education.

- It is a difficult task to frame proper syllabus of each semester.

- A gap between the semesters sometime is loss for the students.

- The workload on teachers and students is increased.

- Sometimes, it is felt that examination is more than study.

- Students get involved in the curriculum, other aspects of students' development gets hampered.

4.4.4 Continuous Internal Evaluation

You might be aware that the students spend most of their time in the class\school. The teachers, who deal with the students everyday are the right person to judge their progress. It is therefore, many a time, emphasized that internal assessment of the performance of the students in different areas should be conducted. At present, continuous internal evaluation is an integral part of the teaching-learning process. The objectives of implementation of continuous internal evaluation are as follows :

- To make an overall assessment of students personality.

- To motivate students and teachers to make the teaching-learning process effective.

- To provide feedback to teachers, students and the parents as well.

- To lay less emphasis on memorization and rote learning.

- To lay emphasis on the assessment of co-scholastic areas of child's personality.

- To make evaluation system more meaningful, reliable, valid and objective.

The characteristics of continuous internal evaluation are as follows :

- It involves both ongoing observation and periodic testing of students by teachers who teach them.

- It serves both formative and summative purposes. Formative in the sense that it is used to improve instruction and summative because it is used to supplement final examination results.

- It enhances rapport between students and teachers.

- It incorporates both cognitive and other areas of students personality.

- The system compels the students to remain alert and regular throughout the course of their studies.

Apart from its usefulness in the system of teaching and learning, the following weaknesses have also been observed.

- The system requires a reasonable teacher-taught ratio in the class.

- In this system, the teachers have ample opportunities for favouritism.

- The system requires a healthy atmosphere in the institution.

- In this system, the students who arrange recommendations, impress their teachers or show closeness to their teachers get more marks/grades than they deserve.

- Due to undue pressure, teachers may feel insecure.

- Proportion of internal and external assessment in the system is also a subject of debate.

4.4.5 Choice-Based Credit System (CBCS)

Choice-Based Credit System (CBCS) essentially implies a redefining of the curriculum into smaller measurable entities or 'modules' with the hours required for studying / learning (not teaching) these modules. The primary focus is to combine the modules in different ways so as to qualify for a certificate, diploma or degree. In a sense, therefore, the completion of a single 'module' of learning can pave the way for learning other modules either in the same institution or elsewhere and a combination of modules in keeping with the needs and interests of the learners. It is therefore inter and intra institutional mobility of the students is possible.

Features of CBCS : As highlighted by the UGC (2015), the features of CBCS are:

- Enhance learning opportunities of the learners.

- Match the learners' scholastic abilities and aspirations.

- Inter-institution transferability of learners (following the completion of a semester).

- Part-completion of an academic programme in the institution of enrolment and part-completion in a specialized (and recognized) institution.

- Improvement in educational quality and excellence.

- Flexibility for working learners to complete the programme over an extended period of time.

- Standardization and comparability of educational programmes across the country and global scenario as well.

Choice-based implies that the learner has the choice to select the subjects that he/she would like to learn within the prescribed time period and the programme parameters. For example, a learner who wants to major in Accountancy wishes to study History may be permitted to study. The CBCS enables a student to obtain a degree by accumulating required number of credits prescribed for that degree. The number of credits earned by the student reflects the knowledge or skill acquired by him/her. The CBCS enables the students to earn credits across departments and provides flexibility in duration to complete a programme of study. The CBCS facilitates transfer of credits earned in different departments/centers of other recognized/accredited universities or institutions.

The following are the main advantages of CBCS :

- Teaching and learning process is shifting from teacher-centric to learner-centric education.

- All activities are taken into account - not only the time learners spend in lectures or seminars but also the time they need for individual learning and the preparation of examinations etc.

- Learning is self-pacing and self-directed.

- Learners may undertake as many credits as they can cope with without having to repeat all the courses in a given semester. In case they fail in one or more courses. Alternatively, they can choose other courses and continue their studies.

- Affords more flexibility to the learners by allowing them to choose interdisciplinary courses, change majors, programmes, etc.

- Respects 'learner autonomy'. It allows learners to choose subjects according to their own learning needs, interests and aptitudes.

- Helps in learner mobility. It offers the opportunity to study at different times and in different places.

- Beneficial for achieving more transparency and compatibility between different educational structures.

4.4.6 Marking versus Grading System

The performance of students is represented in 'marks' or 'grades'. 'Marks' are used to indicate the raw scores of a student in a test like marks in a subject 40, 45, 67, 39, 86, etc. On the other hand, grading system is a qualitative assessment of achievement of a student. On the basis of the quality of the answer, the examiner gives various grades to different examinees by keeping the parameters from 'excellent to very poor'. In grading, an attempt is made to identify relatively uniform score intervals in a hierarchical order ranging from very poor to outstanding performance and vice versa. As discussed in Table 1 of this Unit, CBSE has implemented 9-point grading system with a 'Letter Grade' (A1, A2, B1, B2, C1, C2, D1, D2, E) corresponding to a percentage limits (91-100, 81-90, 71-80, 61-70, 51-60, 41-50, 33-40, 21-32, and 20 and above). Grading can also be made in five or seven points scale. In Indira Gandhi National Open University (IGNOU), five-point grading system is implemented. (A, B, C, D, and E).

Sometimes, the performance of students is also reported in terms of Grade Point Average (GPA) which is obtained by assigning the letter grades to each question separately and awarding numerical weights. Such system of grading is adopted by IGNOU for evaluation of students' performance in many of its programmes of study. In the statistical grading method, the teachers mark the answer books as usual in terms of numerical scores and then grades are assigned. Here, scores are converted into grades by fixing range of scores. Let us discuss the merits and demerits of grading system.

Merits :

● Achievement of examinees in different subjects can be known separately.

● Errors of measurement are reduced to minimum base i.e. achievement of different students may by easily compared.

● In grading system, inter-subject comparison of the same examinee and inter-examinees comparison in a particular subject is possible.

● Grading system takes the emphasis away from marks.

● This system is much more meaningful and feasible in comparison to marking system.

● This system is a boon to weak students than the brights.

● It reduces fear and complexities among the students.

Demerits :

● There is lack of consensus among the educators with regard to points of the scale.

● The grade system is very sensitive. While awarding marks, examiner may switch over from 60 to 65 easily, but the same is not in the case of grades.

● Subjectivity in evaluation is possible like marking system.

● It is easy to convert marks into grades but vice-versa is difficult.

● Lack of uniformity in grading creates confusion and interpretation of the result.

4.4.7 Open Book Examination

An "open book examination" is one in which examinees are allowed to consult their class notes, textbooks, and other approved material while answering questions. The essential difference between closed book examination and open book examination is that the former can still be used to evaluate how much the students have memorized, while the latter cannot. An open book question provides the candidates with the theory the question is examining and then asks them to demonstrate their ability to apply the theory to a scenario. A closed book question will require the candidate to state the theory from memory. In this respect, the open book examination is closer to the working environment where the employee has access to manuals and examples of past work to draw on. An open book question will rarely use the words 'describe' or 'state' or even 'explain' since these words usually preface a question which requires the candidate to recall a theoretical approach from memory. Open-book examinations often comprise of tasks based on a problem or argument to which the student is required to respond, employing their knowledge of the subject and making use of the reference material as appropriate. The open-book examination measuring high-level skills such as conceptualizing, problem solving and reasoning corresponds almost completely to a total, real-world situation, less stressful, less memorization, more room for logical and creative thinking.

There are two kinds of open book examination, the restricted type and the unrestricted type. In the restricted type of open book examination, students are permitted to bring into the examination room one or more specific documents approved by the course instructor. In the unrestricted type of open book examination, students are free to bring books, documents whatever they like. When used properly, it will be pointless for students taking the unrestricted open book examination to consult any material they have brought, because the questions will be designed in such a way the answers will not be found in the textbooks, handouts or class notes.

Open Book Examination has the following merits and demerits :

Merits :

- OBE not only tests students' capacity to construct a coherent response to the assessment task, but also require a demonstration of their ability to use resource material effectively in doing so.

- By allowing students access to relevant reference material, open-book examination reduces the need to memorise information, and can therefore allow students to concentrate on demonstrating their ability to understand and apply this information to the question.

- By providing students with reference material prior to the assessment, it may give them greater confidence when taking examination and therefore produce a more accurate account of their achievements.

- Students can use revision time more constructively, focusing on reinforcing their understanding of the subject rather than attempting to memorised information.

Demerits :

- The students would stop studying and simply copy from the open book provided at the examination hall.

- Where textbooks are allowed, teachers and other staff must either ensure that students are provided with clean copies of the appropriate text or make clear in the assessment strategy any alternative arrangements i.e. allowing students to make notes on the text.

- It is possible that arbitrary factors may be introduced into the process i.e. whether students have the appropriate material, or whether any notes used are the student's own.

- Teachers and staff must provide students with more detailed guidance on what they may or may not take into the examination.

- Board examinations would lose their importance and no one would like to assess the ability and competence of an individual on the basis of marks or grades awarded by the board or any certifying agency.

Check Your Progress 3

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

   b)   Compare your answers with the ones given at the end of the Unit.

3.   Highlight any two objectives of continuous internal evaluation.

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4.   Explain the concept of semester system.

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5.   Discuss the advantages of Choice Based Credit System.

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6.   Why grading system is better than marking system?

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7. Differentiate between Open Book and Close Book system of examination.

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4.5 ICT SUPPORTED ASSESSMENT AND EVALUATION

You might have realised that Information and Communication Technology is an integral part of teaching-learning process. From last few decades, ICT is being used in the curriculum, teaching-learning process, evaluation, and recording & reporting results of the students. But, during these days, the use of ICT in education in general and evaluation processes in particular has been increased. In this section, we will study ICT support to assessment and evaluation, particularly, the online and on-demand examination and also application of computers in examination. You will study the details about the ICT support in assessment processes in Unit-8 of Block-2 of this Course.

4.5.1 Application of Computer in Examination

Use of computers in education is very wide. This is used not only for teaching-learning process but also for assessment & evaluation and for various educational administrative purposes. In every school, every year a lot of information and data relating to record of attendance, account of income and expenditure, annual results etc. can be easily prepared, stored and retrieved with the help of computers. Many schools have started using e-portfolio for assessment purpose, which is possible through the use of computers. Information about the family background, personal qualities, achievement and aspirations regarding every student should be essentially made available and used for preparing portfolios of students so that the areas of their strengths and weaknesses could be identified and appropriate educational guidance could be made available to them to improve their educational standards. Computers can go a long way in helping to do this job. By pooling the student-related data and making it available instantly to each teacher and the counsellor, the computer can make full scale individualized instructional planning a reality. Computers can be used as counsellors too. They may be programmed to initiate the behaviour of a human counsellor. A computer may be taught to interact with individual students so as to render diagnosis.

The Central and various State Governments have launched various schemes on the use of ICT in schools and have provided them computers. It is successfully working in many schools but at the same time, it faces many difficulties in implementation because of the following reasons :

● Dedicated computer lab has not been developed in the schools for its use.

● Regular computer orientation is not given to the teachers for its use.

● Full time computer instructors are not appointed in schools.

● Heavy rush of students is also another difficulty to manage computer classes.

4.5.2 On-demand Examination

The scheme of on-demand examination is a comprehensive ICT enabled system of examination which provides the learners an opportunity to appear in the examination as per their preparation and convenience. In fact, it is a blended scheme of ICT and traditional examination system wherein students can walk-in any time at the selected examination centres and take examination. The demand of flexibility in education system and changing profile of learners has necessitated starting such innovative scheme which has made the existing examination system more flexible and learner-friendly. This is very much successful in distance education system as most of the distance learners in higher education are working people; they normally do not get leave from their organizations for several days at a stretch for term end examination, and hence they fail to complete their courses in stipulated time limit. Most on-demand examination are conducted through ICT. Its objective is to enable the learners to appear in the examination as per their preparation and convenience on the date and time of their choice.

The **features** of on-demand examination system are as follows:

- Learner-friendly innovative scheme of examination.

- More flexible and independent of traditional fixed time frame in examination.

- No need to wait for the six monthly term end examination.

- Different sets of question papers generated on the day of examination.

- A particular software specially developed for the purpose are used.

- Least possibility of malpractices or unfair means.

- May reduce load on the term-end exam in future.

- It reduces workload of students, teachers and also the entire system of examination.

On-demand examination makes use of ICT to solve problems which arise due to human limitations. The major advantages of on-demand examination are as follows:

Advantages :

- It makes possible instant generation of parallel question papers, and facilitates authorised data entry at different points, leaving no chance for human error.

- It has very silently reformed the system of evaluation without making abrupt changes.

- It is not only simple and user friendly but it is also cost effective and saves time and effort in setting question papers.

- It generates individualised and unique question papers on the day of examination by picking up the questions randomly from the question bank as per the blueprint & design.

- It removes frustration, loss of self esteem, and depression that are generally characterized by the term-end examination.

4.5.3 Online Examination

Online examination, sometimes referred as e-examination, are the examination conducted through the internet or in an intranet (if within the organization) for a remote candidate(s). A dedicated software is used to manage the entire online examination system. Candidates have to sign up and create an account as per their student profile and sign in for its use for a limited time to answer the questions and after the time of expiry, the answer paper is disabled automatically and answers is sent to the examiner. The examiner evaluates answers, either through automated process or manually and the results are being sent to the candidate through email or made available in the website. Internet will be used as a media for disseminating and conducting tests. The progress reports can be printed at any point of time by just providing the necessary details of a candidate. Generally question banks are prepared for online examination. The online examination system is a web based application. The system can be modified and customized to suit the needs of any educational institution; primary and secondary schools, colleges, professional and vocational institutes, universities or coaching academies. This system aims at reducing costs associated with conducting examination over a period of time and achieving total automation of examination system and its related tasks like registration, publication of results, which leads to a very high degree of system efficiency.

Check Your Progress 4

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

b) Compare your answers with the ones given at the end of the Unit.

8. Write any three features of on-demand examination.

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9. Explain the characteristics of online examination.

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10. Enlist the works in which computers can be used in a school system.

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4.6 LET US SUM UP

In this Unit, we have discussed about major issues and concerns related to educational assessment and evaluation. Reforms in examination system are a continuous work. This has been focused in many education committees and commissions. Although, many attempts have been made particularly in Indian context to bring reforms in the examination system, still it requires making it more goal oriented and productive. We discussed two major sections in this Unit, i.e. trends in evaluation and ICT support in assessment and evaluation.

In the section on recent trends in educational evaluation, we discussed development of question banks, semester system, choice-based credit system (CBCS), grading system, continuous internal evaluation and open book examination which is the priority in bringing systemic changes in assessment and evaluation. In ICT support assessment and evaluation, we discussed on-demand and online examination and computer applications in assessment and evaluation which are at present largely used by schools.

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4.8 ANSWERS TO CHECK YOUR PROGRESS

1. To make evaluation student-centered and bring objectivity in evaluation.

2. Learners are actively involved in evaluation process; directly relates to the students' learning goals; and involves multiple data sources in evaluation.

3. (a) To make an overall assessment of child's personality; and (b) To motivate students and teachers to make teaching-learning process effective.

4. When a particular course of study is divided into different equal parts not on the basis of the session but on the basis of months and examination is conducted after the completion of every part, is called a semester system. Ideally, an annual system is divided into two parts (six months each) for the semester pattern.

5. CBCS makes education more broad based. One can take credits by combining unique combinations of the subjects. It helps in learner mobility. It offers opportunity to the students to study at different times and in different places. It also helps students to study diverse subjects.

6. Self exercise. (Refer 4.4.6)

7. Open book examination is one in which examinees are allowed to consult their class notes, textbooks, and other approved material while answering questions whereas the close book system of examination is like our traditional system of examination where no learning materials are provided to the learners during the examination. The essential difference between closed book examination and open book examination is that the former can still be used to evaluate how much the students have memorized, while the latter cannot.

8. Learner-friendly innovative scheme of examination; more flexible and independent of the traditional fixed time frame in examination; and no need to wait for the six monthly term end examination.

9. Online examination, sometimes referred to as e-examination, are the examination conducted through the internet or in an intranet (if within the organization) for a remote candidate(s).

10. Self exercise. (Refer 4.5.1)