

UNIT-1

MEASUREMENT, ASSESSMENT AND EVALUATION

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CONTENTS

<i>Sr. No</i>	<i>Topic</i>	<i>Page No</i>
	Introduction.....	
	Objectives	
1.1	Concept of Measurement Assessment and Evaluations.....	
1.2	Classroom Assessment; Why, what, How and When.....	
1.3	Types of Assessment	
1.4	Characteristics of Classroom Assessment	
1.5	Role of Assessment	
1.6	Principles of classroom Assessment	
1.7	Self Assessment Questions References	
1.8	Suggested	

INTRODUCTION

In order to ensure and enhance the effectiveness of teaching- learning process teachers need to get information regarding students' performance. Based upon this information, teachers make critical instructional decisions for example whether to use a certain teaching method or not, whether the progress of students towards attainment of educational goals is satisfactory or not, what if a student is having learning deficiency, How to motivate a student etc. Measurement, testing, assessment and evaluation primarily aims to yield the information regarding students' performance in order to help the teacher and/or stakeholders to determine a certain degree, to which a learner has acquired particular knowledge, has understood particular concepts or has mastered certain skill. This information is used to scaffold the next step in the learning process.

There is no exaggeration to say that measurement, assessment and evaluation collectively form an integral and indispensable part of the teaching leaning process. Measurement, assessment and evaluation provides comprehensive and objective information through which not only the learning of an individual student is recognized and responded but also through this information the overall effectiveness of an education program can be judged, maintained and/or enhanced.

Therefore for a teacher, it is highly significant to understand the concepts of measurement, assessment and evaluation as for as their role in instruction. He/she must also be able to plan and conduct procedures in an effective way and to interpret and use the information obtained through these procedures to maximize the effectiveness of teaching learning process.

OBJECTIVES

After studying this unit, the prospective teacher will be able to:

- indicate the primary differences among the terms measurement, assessment and evaluation
- explain the types of assessment used in the classroom milieu
- compare and contrast the assessment *for* learning and assessment *of* learning
- summarize the need for assessment
- highlight the role of assessment in effective teaching-learning process
- describe major characteristics of classroom assessment
- identify the core principles of effective assessment

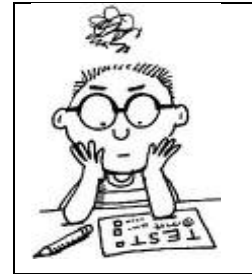
1.1 Concept of Measurement, Assessment and Evaluation

Despite their significant role in education the terms measurement, assessment, and evaluation are usually confused with each other. Mostly people use these terms interchangeably and feel it very difficult to explain the differences among them. Each of these terms has a specific meaning sharply distinguished from the others.

Measurement: In general, the term measurement is used to determine the attributes or dimensions of object. For example, we measure an object to know how big, tall or heavy it is. In educational perspective measurement refers to the process of obtaining a numerical description of a student's progress towards a pre-determined goal. This process provides the information regarding how much a student has learnt. Measurement provides quantitative description of the students' performance for example Rafaih solved 23 arithmetic problems out of 40. But it does not include the qualitative aspect for example, Rafaih's work was neat.

Testing: A test is an instrument or a systematic procedure to measure a particular characteristic. For example, a test of mathematics will measure the level of the learners' knowledge of this particular subject or field.

Assessment: Kizlik (2011) defines assessment as a process by which information is obtained relative to some known objective or goal. Assessment is a broad term that includes testing. For example, a teacher may assess the knowledge of English language through a test and assesses the language proficiency of the students through any other instrument for example oral quiz or presentation. Based upon this view, we can say that every test is assessment but every assessment is not the test.



The term 'assessment' is derived from the Latin word 'assidere' which means 'to sit beside'. In contrast to testing, the tone of the term assessment is non-threatening indicating a partnership based on mutual trust and understanding. This emphasizes that there should be a positive rather than a negative association between assessment and the process of teaching and learning in schools. In the broadest sense assessment is concerned with children's progress and achievement.

In a comprehensive and specific way, classroom 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.
(NCCA, 2004)

In short, we can say that assessment entails much more than testing. It is an ongoing process that includes many formal and informal activities designed to monitor and improve teaching and learning.

Evaluation: According to Kizlik (2011) evaluation is most complex and the least understood term. Hopkins and Antes (1990) defined evaluation as a continuous inspection of all available information in order to form a valid judgment of students' learning and/or the effectiveness of education program.

The central idea in evaluation is "value." When we evaluate a variable, we are basically judging its worthiness, appropriateness and goodness. Evaluation is always done against a standard, objectives or criterion. In teaching learning process teachers made students' evaluations that are usually done in the context of comparisons between what was intended (learning, progress, behaviour) and what was obtained.



Evaluation is much more comprehensive term than measurement and assessment. It includes both quantitative and qualitative descriptions of students' performance. It always provides a value judgment regarding the desirability of the performance for example, Very good, good etc.

Kizlik 2011	http://www.adprima.com/measurement.htm
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Activity 1.1: Distinguish among measurement, assessment and evaluation with the help of relevant examples

1.2 Classroom Assessment: Why, What, How and When

According to Carole Tomlinson "Assessment is today's means of modifying tomorrow's instruction." It is an integral part of teaching learning process. It is widely accepted that effectiveness of teaching learning process is directly influenced by assessment. Hamidi (2010) developed a framework to answer the Why; What, How and When to assess. This is helpful in understanding the true nature of this concept.

Why to Assess: Teachers have clear goals for instruction and they assess to ensure that these goals have been or are being met. If objectives are the destination, instruction is the path to it then assessment is a tool to keep the efforts on track and to ensure that the path is right. After the completion of journey assessment is the indication that destination is ahead.

What to Assess: Teachers cannot assess whatever they themselves like. In classroom assessment, teachers are supposed to assess students' current abilities in a given skill or task. The teacher can assess students' knowledge, skills or behaviour related to a particular field.

Who to Assess: It may seem strange to ask whom a teacher should assess in the classroom, but the issue is of great concern. Teachers should treat students as 'real learners', not as course or unit coverers. They should also predict that some students are more active and some are less active; some are quick at learning and some are slow at it. Therefore, classroom assessment calls for a prior realistic appraisal of the individuals teachers are going to assess.

How to Assess: Teachers employ different instruments, formal or informal, to assess their students. Brown and Hudson (1998) reported that teachers use three sorts of assessment methods – selected-response assessments, constructed-response assessments, and personal-response assessments. They can adjust the assessment types to what they are going to assess.

When to Assess: There is a strong agreement of educationists that assessment is interwoven into instruction. Teachers continue to assess the students learning throughout the process of teaching. They particularly do formal assessments when they are going to make instructional decisions at the formative and summative levels, even if those decisions are small. For example, they assess when there is a change in the content; when there is a shift in pedagogy, when the effect of the given materials or curriculum on learning process is examined.

How much to Assess: There is no touchstone to weigh the degree to which a teacher should assess students. But it doesn't mean that teachers can evaluate their students to the extent that they prefer. It is generally agreed that as students differ in ability, learning styles, interests and needs etc so assessment should be limited to every individual's needs, ability and knowledge. Teachers' careful and wise judgment in this regard can prevent teachers from over assessment or underassessment.

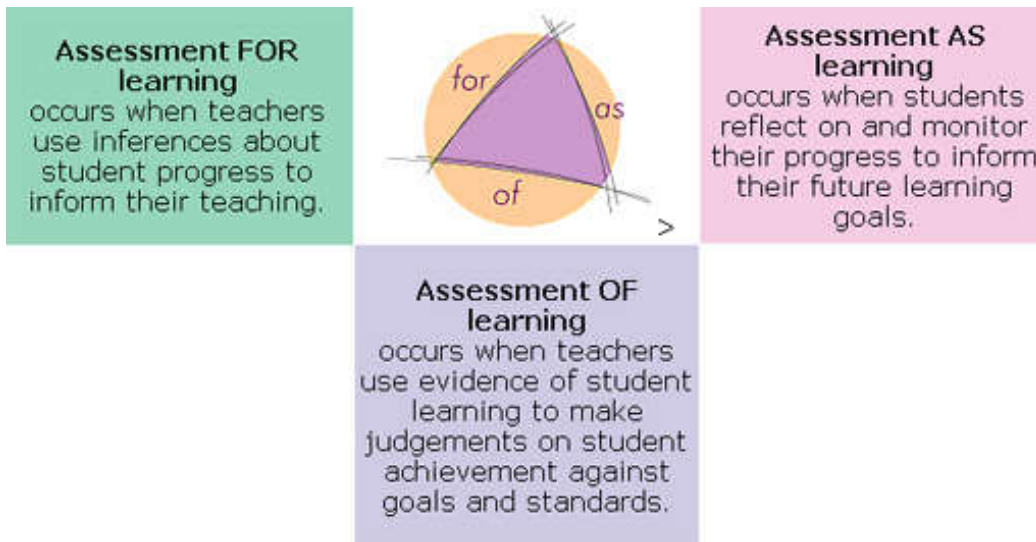
Activity: Critically discuss the significance of decisions that teachers take regarding classroom Assessment.

1.3 Types of Assessment

"As coach and facilitator, the teacher uses formative assessment to help support and enhance student learning, As judge and jury, the teacher makes summative judgments about a student's achievement..."

Atkin, Black & Coffey (2001)

Assessment is a purposeful activity aiming to facilitate students' learning and to improve the quality of instruction. Based upon the functions that it performs, assessment is generally divided into three types: assessment *for* learning, assessment *of* learning and assessment *as* learning.



a) Assessment *for* Learning (Formative Assessment)

Assessment *for* learning is a continuous and an ongoing assessment that allows teachers to monitor students on a day-to-day basis and modify their teaching based on what the students need to be successful. This assessment provides students with the timely, specific feedback that they need to enhance their learning. The essence of formative assessment is that the information yielded by this type of assessment is used on one hand to make immediate decisions and on the other hand based upon this information; timely feedback is provided to the students to enable them to learn better. If the primary purpose of assessment is to support high-quality learning then formative assessment ought to be understood as the most important assessment practice.

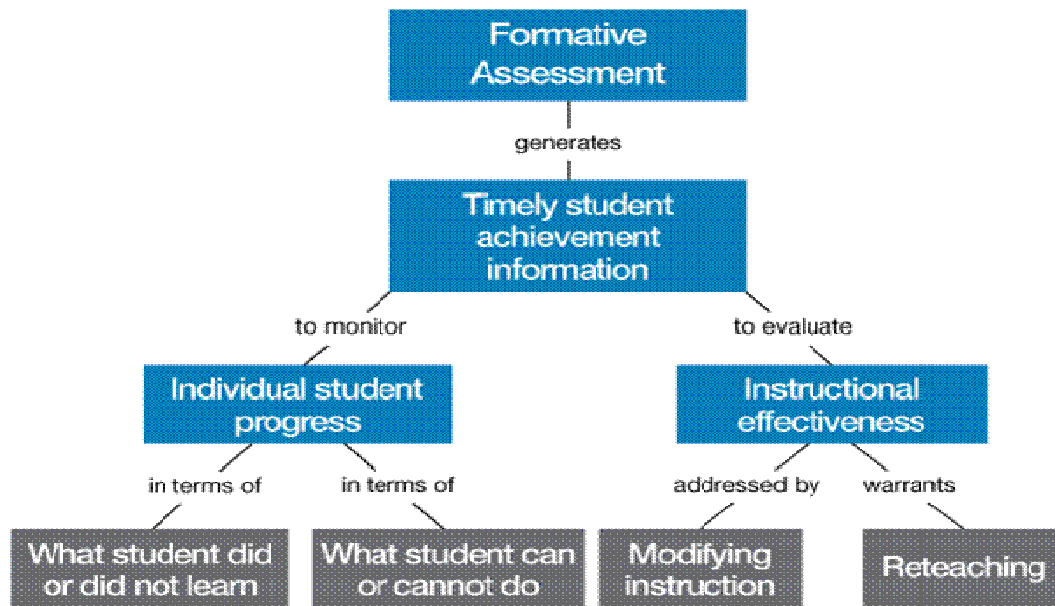
The National Center for Fair and Open Testing (1999).	The Value of Formative Assessment. http://www.fairtest.org/examarts/winter99/k-forma3.html
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Assessment for learning has many unique characteristics for example this type of assessment is taken as “practice.” Learners should not be graded for skills and concepts that have been just introduced. They should be given opportunities to practice. Formative assessment helps teachers to determine next steps during the learning process as the instruction approaches the summative assessment of student learning. A good analogy for this is the road test that is required to receive a driver's license. Before the final driving test, or summative assessment, a learner practice by being assessed again and again to point out the deficiencies in the skill

Another distinctive characteristic of formative assessment is student involvement. If students are not involved in the assessment process, formative assessment is not practiced or implemented to its full effectiveness. One of the key components of engaging students in the assessment of their own learning is providing them with descriptive feedback as

they learn. In fact, research shows descriptive feedback to be the most significant instructional strategy to move students forward in their learning. Descriptive feedback provides students with an understanding of what they are doing well. It also gives input on how to reach the next step in the learning process.

Role of assessment for learning in instructional process can be best understood with the help of following diagram.



Source:

http://www.stemresources.com/index.php?option=com_content&view=article&id=52&Itemid=70

Garrison, & Ehringhaus, (2007) identified some of the instructional strategies that can be used for formative assessment:

- **Observations.** Observing students' behaviour and tasks can help teacher to identify if students are on task or need clarification. Observations assist teachers in gathering evidence of student learning to inform instructional planning.
- **Questioning strategies.** Asking better questions allows an opportunity for deeper thinking and provides teachers with significant insight into the degree and depth of understanding. Questions of this nature engage students in classroom dialogue that both uncovers and expands learning.
- **Self and peer assessment.** When students have been involved in criteria and goal setting, self-evaluation is a logical step in the learning process. With peer evaluation, students see each other as resources for understanding and checking for quality work against previously established criteria.

- **Student record keeping** It also helps the teachers to assess beyond a "grade," to see where the learner started and the progress they are making towards the learning goals.

b) Assessment of Learning (Summative Assessment)

Summative assessment or assessment of learning is used to evaluate students' achievement at some point in time, generally at the end of a course. The purpose of this assessment is to help the teacher, students and parents know how well student has completed the learning task. In other words summative evaluation is used to assign a grade to a student which indicates his/her level of achievement in the course or program.

Assessment of learning is basically designed to provide useful information about the performance of the learners rather than providing immediate and direct feedback to teachers and learners, therefore it usually has little effect on learning. Though high quality summative information can help and guide the teacher to organize their courses, decide their teaching strategies and on the basis of information generated by summative assessment educational programs can be modified.

Many experts believe that all forms of assessment have some formative element. The difference only lies in the nature and the purpose for which assessment is being conducted.

Comparing Assessment for Learning and Assessment of Learning

Assessment for Learning (Formative Assessment)	Assessment of Learning (Summative Assessment)
Checks how students are learning and is there any problem in learning process. it determines what to do next.	Checks what has been learned to date.
Is designed to assist educators and students in improving learning?	Is designed to provide information to those not directly involved in classroom learning and teaching (school administration, parents, school board), in addition to educators and students?
Is used continually?	Is periodic?
Usually uses detailed, specific and descriptive feedback—in a formal or informal report.	Usually uses numbers, scores or marks as part of a formal report.
Usually focuses on improvement, compared with the student's own previous performance	Usually compares the student's learning either with other students' learning (norm-referenced) or the standard for a grade level (criterion-referenced)

Source: adapted from Ruth Sutton, unpublished document, 2001, in Alberta Assessment Consortium

c) Assessment as Learning

Assessment *as* learning means to use assessment to develop and support students' metacognitive skills. This form of assessment is crucial in helping students become lifelong learners. As students engage in peer and self-assessment, they learn to make sense of information, relate it to prior knowledge and use it for new learning. Students develop a sense of efficacy and critical thinking when they use teacher, peer and self-assessment feedback to make adjustments, improvements and changes to what they understand.

Garrison, C., & Ehrlinghaus, M. (2007)	Defining Formative and Summative Assessment http://www.education.vic.gov.au/images/content/studentlearning/forofas.jpg
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Self Assessment: 'Formative assessment results in improved teaching learning process.' Comment on the statement and give arguments to support your response.

1.4 Characteristics of Classroom Assessment

1. Effective assessment of student learning begins with educational goals.

Assessment is not an end in itself but a vehicle for educational improvement. Its effective practice, then, begins with and enacts a vision of the kinds of learning we most value for students and strive to help them achieve. Educational values/ goals should drive not only what we choose to assess but also how we do so. Where questions about educational mission and values are skipped over, assessment threatens to be an exercise in measuring what's easy, rather than a process of improving what we really care about.

2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.

Learning is a complex process. It entails not only what students know but what they can do with what they know; it involves not only knowledge and abilities but values, attitudes, and habits of mind that affect both academic success and performance beyond the classroom. Assessment should reflect these understandings by employing a diverse array of methods, including those that call for actual performance, using them over time so as to reveal change, growth, and increasing degrees of integration. Such an approach aims for a more complete and accurate picture of learning, and therefore, firm base for improving our students' educational experience.

3. Assessment works best when it has a clear, explicitly stated purposes.

Assessment is a goal-oriented process. It entails comparing educational performance with educational purposes and expectations -- those derived from the institution's mission, from faculty intentions in program and course design, and from knowledge of students' own goals. Where program purposes lack specificity or agreement, assessment as a process pushes a campus towards clarity about where to aim and what standards to apply; assessment also prompts attention to where and how program goals will be taught and learned. Clear, shared, implementable goals are the cornerstone for assessment that is focused and useful.

4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.

Information about outcomes is of high importance; where students "end up" matters greatly. But to improve outcomes, we need to know about student experience along the way -- about the curricula, teaching, and kind of student effort that lead to particular outcomes. Assessment can help us understand which students learn best under what conditions; with such knowledge comes the capacity to improve the whole of their learning.

5. Assessment works best when it is ongoing not episodic.

Assessment is a process whose power is cumulative. Though isolated, "one-shot" assessment can be better than none, improvement is best fostered when assessment entails a linked series of activities undertaken over time. This may mean tracking the process of individual students, or of cohorts of students; it may mean collecting the same examples of student performance or using the same instrument semester after semester. The point is to monitor progress towards intended goals in a spirit of continuous improvement. Along the way, the assessment process itself should be evaluated and refined in light of emerging insights.

6. Assessment is effective when representatives from across the educational community are involved.

Student education is a campus-wide liability, and assessment is a way of acting out that responsibility. Thus, while assessment attempts may start small, the aim over time is to involve people from across the educational community. Faculty plays an important role, but assessment's questions can't be fully addressed without participation by educators, librarians, administrators, and students. Assessment may also involve individuals from beyond the campus (alumni/ae, trustees, employers) whose experience can enrich the sense of appropriate aims and standards for learning. Thus understood, assessment is not a task for small groups of experts but a collaborative activity; its aim is wider, better-informed attention to student learning by all parties with a stake in its improvement.

7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.

Assessment recognizes the value of information in the process of improvement. But to be useful, information must be connected to issues or questions that people really care about. This implies assessment approaches that produce evidence that relevant parties will find credible, suggestive, and applicable to decisions that need to be made. It means thinking in advance about how the information will be used, and by whom. The point of assessment is not to collect data and return "results"; it is a process that starts with the questions of decision-makers, that involves them in the gathering and interpreting of data, and that informs and helps guide continuous improvement.

9. Through effective assessment, educators meet responsibilities to students and to the public.

There is a compelling public stake in education. As educators, we have a responsibility to the public that support or depend on us to provide information about the ways in which our students meet goals and expectations. But that responsibility goes beyond the reporting of such information; our deeper obligation -- to ourselves, our students, and society -- is to improve. Those to whom educators are accountable have a corresponding obligation to support such attempts at improvement. (American Association for Higher Education; 2003)

<p>Activity 1.2: Effective assessment involves representatives from across the educational community: Discuss</p>
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1.5 Role of Assessment

"Teaching and learning are reciprocal processes that depend on and affect one another. Thus, the assessment component deals with how well the students are learning and how well the teacher is teaching" Kellough and Kellough, (1999)

Assessment does more than allocate a grade or degree classification to students – it plays an important role in focusing their attention and, as Sainsbury & Walker (2007) observe, actually drives their learning. Gibbs (2003) states that assessment has 6 main functions:

1. Capturing student time and attention
2. Generating appropriate student learning activity
3. Providing timely feedback which students pay attention to
4. Helping students to internalize the discipline's standards and notions of equality
5. Generating marks or grades which distinguish between students or enable pass/fail decisions to be made.

6. Providing evidence for other outside the course to enable them to judge the appropriateness of standards on the course.

Surgenor (2010) summarized the role of assessment in learning in the following points.

- It fulfills student expectations
- It is used to motivate students
- It provide opportunities to remedy mistakes
- It indicate readiness for progression
- Assessment serves as a diagnostic tool
- Assessment enables grading and degree classification
- Assessment works as a performance indicator for students
- It is used as a performance indicator for teacher
- Assessment is also a performance indicator for institution
- Assessment facilitates learning in the one way or the other.

Activity 1.3: Enlist different role of formative and summative assessment in teaching learning process.

1.6 Principles of Classroom Assessment

Hamidi (2010) described following principles of classroom assessment.

1. Assessment should be formative.

Classroom assessment should be carried out regularly in order to inform on-going teaching and learning. It should be formative because it refers to the formation of a concept or process. To be formative, assessment is concerned with the way the student develops, or forms. So it should be *for* learning. In other words, it has a crucial role in "informing the teacher about how much the learners as a group, and how much individuals within that group, have understood about what has been learned or still needs learning as well as the suitability of their classroom activities, thus providing feedback on their teaching and informing planning. Teachers use it to see how far learners have mastered what they should have learned. So classroom assessment needs fully to reach its formative potential if a teacher is to be truly effective in teaching.

2. Should determine planning.

Classroom assessment should help teachers plan for future work. First, teachers should identify the purposes for assessment – that is, specify the kinds of decisions teachers want to make as a result of assessment. Second, they should gather information related to the decisions they have made. Next, they interpret the collected information—that is, it must be contextualized before it is meaningful. Finally, they should make the final, or the professional, decisions. The plans present a means for realizing instructional objectives which are put into practice as classroom assessment to achieve the actual outcomes.

3. Assessment should serve teaching.

Classroom assessment serves teaching through providing feedback on pupils' learning that would make the next teaching event more effective, in a positive, upwards direct. Therefore, assessment must be an integral part of instruction. Assessment seems to drive teaching by forcing teachers to teach what is going to be assessed. Teaching involves assessment; that is, whenever a student responds to a question, offers a comment, or tries out a new word or structure, the teacher subconsciously makes an assessment of the student's performance. So when they are teaching, they are also assessing. A good teacher never ceases to assess students, whether those assessments are incidental or intended.

4. Assessment should serve learning.

Classroom assessment is an integral part of learning process as well. The ways in which learners are assessed and evaluated strongly affect the ways they study and learn. It is the process of finding out who the students are, what their abilities are, what they need to know, and how they perceive the learning will affect them. In assessment, the learner is simply informed how well or badly he/she has performed. It can spur learners to set goals for themselves. Assessment and learning are seen as inextricably linked and not separate processes because of their mutually-influenced features. Learning by itself has no meaning without assessment and vice-versa.

5. Assessment should be curriculum-driven.

Classroom assessment should be the servant, not the master, of the curriculum. Assessment specialists view it as an integral part of the entire curriculum cycle. Therefore, decisions about how to assess students must be considered from the very beginning of curriculum design or course planning.

6. Assessment should be interactive.

Students should be proactive in selecting the content for assessment. It provides a context for learning as meaning and purpose for learning and engages students in social interaction to develop oral and written language and social skills. Assessment and learning are inextricably linked and not separate processes, Effective assessment is not a

process carried out by one person, such as a teacher, on another, a learner, it is seen as a two-way process involving interaction between both parties. Assessment, then, should be viewed as an interactive process that engages both teacher and student in monitoring the student's performance.

7. Assessment should be student-centered.

Since learner-centered methods of instruction are principally concerned with learner needs, students are encouraged to take more responsibility for their own learning and to choose their own learning goals and projects. Therefore, in learner-centered assessment, they are actively involved in the process of assessment. Involving learners in aspects of classroom assessment minimizes learning anxiety and results in greater student motivation.

8. Assessment should be diagnostic.

Classroom assessment is diagnostic because teachers use it to find out learners' strengths and weaknesses during the in-progress class instruction. They also identify learning difficulties. If the purpose of assessment is to provide diagnostic feedback, then this feedback needs to be provided in a form – either verbal or written – that is for learners to understand and use.

9. Assessment should be exposed to learners.

Teachers are supposed to enlighten learners' accurate information about assessment. In other words, it should be transparent to learners. They must know when the assessments occur, what they cover in terms of skills and materials, how much the assessments are worth, and when they can get their results and the results are going to be used. They must also be aware of why they are assessed because they are part of the assessment process. Because the assessment is part of the learning process, it should be done *with* learners, not *to* them. It is also important to provide an assessment schedule before the instruction begins.

10. Assessment should be non-judgmental.

In the classroom assessment, everything focuses on learning which results from a number of such factors as student needs, student motivation, teaching style, time on task, study intensity, background knowledge, course objectives, etc. So there is no praise or blame for a particular outcome of learning. Teachers should take no stance on determining who has done better and who has failed to perform well. Assessment should allow students to have reasonable opportunities to demonstrate their expertise without confronting barriers

11. Assessment should develop a mutual understanding.

Mutual understanding occurs when two people come to a similar feeling of reality. In second language learning, this understanding calls for a linguistic environment in which

the teacher and students interact with each other based on the assessment objectives. Therefore, assessment has the ability to create a new world image by having the individuals share their thoughts helpful in learning process. When learning occurs, this is certainly as a result of common understanding between the teacher and students.

12. Assessment should lead to learner's autonomy.

Autonomy is a principle in which students come to a state of making their own decisions in language learning. They assume a maximum amount of responsibility for what they learn and how they learn it. Autonomous learning occurs when students have made a transition from teacher assessment to self-assessment. This requires that teachers encourage students to reflect on their own learning, to assess their own strengths and weaknesses, and to identify their own goals for learning. Teachers also need to help students develop their self-regulating and met cognitive strategies. Autonomy is a construct to be fostered in students, not taught, by teachers.

13. Assessment should involve reflective teaching.

Reflective teaching is an approach instruction in which teachers are supposed to develop their understanding of teaching (quality) based on data/information obtained and collected through critical reflection on their teaching experiences. This information can be gathered through formative assessment (i.e., using different methods and tools such as class quizzes, questionnaires, surveys, field notes, feedback from peers, classroom ethnographies, observation notes, etc) and summative assessment (i.e., different types of achievement tests taken at the end of the term).

Hamidi, Eameal (2010)	Fundamental Issues in L2 Classroom Assessment Practices. Academic Leadership Online Journal. Volume 8 Issue 2 http://www.sisd.net/cms/lib/TX01001452/Centricity/Domain/2073/ALJ_ISSN1533-7812_8_2_444.pdf
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1.7 Self Assessment Questions

- Highlight the role of assessment in teaching and learning Process
- Discuss critically the principles of assessment with the help of relevant examples
- Differentiate between assessment for learning and assessment of learning