UNIT – V: ASSESSMENT IN PEDAGOGY OF BIOLOGICAL SCIENCE

Measurement and Evaluation - Differentiate between Assessment and Evaluation - Types of evaluation: Formative, Summative, DiagnosticTest– Standardization of Test, Principles and steps involved in the Construction of Achievement test – Blue Print and Question Pattern - Feedback Devices: Meaning, Types, Criteria, - Assessment of Portfolios, Reflective Journal, Field Engagement using Rubrics, Competency Based Evaluation.

UNIT – V

ASSESSMENTINPEDAGOGYOF

BIOLOGICAL SCIENCE

Measurementand Evaluation

"Evaluationistheprocessofascertainingorjudgingthevalueor amount of something by use of a standard of appraisal" Carter V. Good Evaluation is not just a testing programme.

Bloom- "Evaluation is relatively new technical term introduced to designate a more comprehensive concept of measurement that is applied in conventional tests and examination.

The emphasis is upon broad personality changes and major objectives of educational programme. These include not only subject matter achievements but also attitudes, interests, ideals, ways of thinking, work habits and personal and social adaptability."

Ahmann and Glock "Evaluation is the process of delineating, obtaining and providing useful information for judging decision alternatives."

Stufflebeam "Evaluation is the process of gathering and interpreting evidences on change in the behaviour of the students asthey progress through school"

On analysis of the above stated definitions of Evaluation, the meaning of the concept of Evaluation can be summed up as below:

- ✓ Evaluation is a continuous process. Teaching learning process and the evaluation procedure go together.
- ✓ Educational evaluation is the estimation of growth and progress of pupils towards objectives of the curriculum.
- ✓ Evaluation is more comprehensive.It involves objectives, learning experiences and evaluation procedure.
- ✓ Evaluation provides quantitative as well as qualitative description of the outcomes of teaching learning process.
- ✓ Ithelpsinknowingabout thechangesinbehaviourrelatedtothe domains of the learner's behaviour owing to the process of teaching learning.
- ✓ Itisverysystematicandscientific.
- ✓ It gives more importance to learning as compared to teaching. Teaching which does not result in learning by the students is of no value.
- ✓ Evaluation provides greater scope and flexibility for the use of variety of means and techniques rather than limiting itself to certain tests or conventional examinations.
- ✓ Evaluation is aco-operativeprocess involving students, teachers and parents.
- ✓ Itisquantitativeaswellasdescriptive.
- ✓ It represents a comprehensive plan of better testing and measurement for inquiring into the quality of the output in the light of the set objectives.

- ✓ Evaluation provides sufficient value judgement about the progress of the learner, teacher's efforts and effectiveness of the instructional programmes.
- ✓ Evaluation is concerned with the total personality of the student i.e., physical, moral, cultural, social, academic, etc.
- ✓ Evaluation is more concerned with the growth and development of the learner.
- ✓ Evaluationisameanstoan endandnot an endinitself

DifferentiatebetweenAssessmentandEvaluation

ThekeydifferencesbetweenAssessmentand Evaluation

ASSESSMENT	**EVALUATION**
Themeaningofassessmentistoreviewthe data about something or someone from different sources in order to make improvement in the current performance.	The meaning of evaluation is to judge the performance of somethingorsomeoneby measuring the performance on the basis of existing standards.
Anassessment isan ongoing process.	Anevaluationprovide closureontheexisting process.
Thepurposeofassessmentistoimprove the quality of performance.	The purpose of evaluationistojudgethe performance.

Theassessmentisanindividualizedprocess and is not done against already set standards.	Theevaluationisapplied againstthesetstandards.
Theorientationofassessmentisprocess oriented.	Theorientationof evaluation isproduct oriented.
Theoutcomeofassessmentisconstructive feedback.	The outcome of evaluationistoshow shortcomings.
Theassessment is graded.	Theevaluationisnot graded.

ASSESSMENT	EVALUATION
Whileassessingtherelationshipbetween two parties is reflective.	While evaluating the relationshipbetweentwo parties is prespective.
Thecriteriaofassessmentisdecidedbythe mutual understanding of both parties involved in the process.	Thecriteriaofevaluation is solely decided by the evaluator.
Forexample,teacherdoesassessmentof students' performance and provide constructive feedback.	For example, the evaluation of the skillsofacandidateis done before hiring himorherforthejob.

However, evaluation and assessment are both used to review the performance of an individual. But these two terms are used in a completely different context. The assessment is done to provide constructive feedback and the motive behind assessment to improve, whereas, evaluation is done to judge

Typesofevaluation:Formative,Summative

Formative evaluation is used to know the progress that occurred during instruction and to provide continuous feedback to both teachers and students. Feedback given to students reinforce learning success and detect any shortcoming in learning. On the other hand, the feedback to teachers help them to improve their mode of instructions and provide remedial work as per the requirement.

The Formative Evaluation thus is a step for improvement of learning and instructions. Formative evaluation is concerned with making decisions relating to development of students as well as of the course.Itprovidesfeedbackatappropriatestagesoftheteaching

learning process which helps in making changes in the curriculum, teaching strategies and learning environment.

This evaluation is conducted well during the teaching learning process. When a teacher has taught some content or some unit or provided some learning experiences, he has a need to determine the outcome. Similarly, students also need to know about their progress in the path of learning.

The formative evaluation helps in this task by providing useful information to both the teachers and students about the strengths and weaknesses of their teaching and learning. In the light of this information,theymayplanandengageforthemidcoursecorrectionsin pace or content and methodology of instruction.

CharacteristicsofFormativeEvaluationThemajorcharacteristicsof

Formativeevaluationcan be:

- ✓ Itisadministeredduringthecourseofinstruction.
- ✓ It is helpful for the teacher by providing him with qualitativeand quantitative data for bringing necessary modifications in his teaching.
- ✓ It is useful for the students by providing them with the information about their progress, particularly about what they have yet to learn before achieving the set objectives.
- ✓ Itisinformative andcloselyrelated tothethingsbeing taught.
- ✓ It is helpful in guiding the students, planning remedial ways and prompting them to ask for necessary help.
- ✓ Formativeevaluationis donewithfollowing purposes:
- ✓ To monitor students learning for the purpose of providing individualized instruction.
- ✓ Toevaluateteachingeffectiveness.
- ✓ To evaluate courses and curricula with the purpose of modification, updating or replacement if necessary.
- ✓ Toevaluatecurriculum materials.

- ✓ Toevaluatethelearningenvironmentwithaview to improveit.
- ✓ The Formative evaluation may be carried out both in formal ways (like check lists, quizzes, question answers, assignments and tests) as well as informal ways (like observations, listening to students' comments and conversations).
- ✓ Further to state that formative evaluation in no way should be used by the teacher against the students, just as for making comparison among the students or making a certifying judgement.
- ✓ The results of such evaluation should not necessarily appear in any official record.

AdvantagesofFormative Evaluation:

Themainadvantagesorthemajorfunctionsofformativeevaluationare as listed below:

The first and major function of formative evaluation is to provide feedback and guidance to teachers and students.

Formative evaluation make the students aware regarding where and what kind of corrective and remedial measures are to be taken by them. Also, it informs the teachers as to what kind of modification or reform is required to be taken by in his process of instruction.

Formativeevaluationhelpsstudentsinpacingtheirlearningand also in remedying the particular gaps in their learning a particular topic or s specific unit. This makes the process of learning more scheduled and thereby avoiding overwhelming amount to be learnt before final summative evaluation.

The entire sequence of learning, in formative evaluation, is broken down into smaller steps and each step of sequential learning programme is evaluated.

When the whole matter is sequentially arranged, the student has to masterpiece requisite concepts before learning principles or solving problemsbasedonthoseconcepts.Hence,thestudentscanrealisehow

much they have been able to understand facts, concepts, rules,principles etc.and how much more is still required to learn so as to achieve the desired goal. Moreover, mastery of pre requisite units make learning of higher units easier.

When a student learns which items he has got right and which wrongontheformativetest,hewillbeable toreviewaboutwhich ideas he still needs to learn. Thus, formative evaluation provides useful feedback to students by locating their own difficulties. If the analysis of the causes of difficulties encountered is provided to the learner, then necessary steps or suggestions can be taken to overcome these difficulties.

Various remedial measures can be adopted for correcting the difficulties and errors detected during formative tests. The remedial measures adopted by teachers include clearer or simpler explanations, concrete illustrations, alternative simple instructional materials, tutorial assistance, special group co-operation etc. which helps the students to overcome particular difficulty.

One more function of formative evaluation is that it helps to make an analysis of the errors made by the students, which helps to identify the facts, principles etc. with which the students are having difficulty.

If major strata, say more than percent students have not been able to master a particular concept, then this may be regarded as inefficiency of the instructional material or instructional process.

Teacher can attempt to reteach that concept using alternative instructional material and other techniques. Students can seek cooperation of teacher or more able students to remedy their individual difficulties. Hence, it can be said that formative evaluation helps the teacher to modify his instructions.

Formative evaluation material can also be used for quality purposes. If the course is similar in content and objectives, then the performance of one year may be compared with another.

If formative evaluation is implemented properly, all thestudents can achieve the desired objectives.

The student who is continuously evaluated by formative scheme, there is no reason for his failure in the final summative evaluation.

Summative Evaluation is concerned with making judgements about a finished product or process. Terminal examinations whether internal or external are one of the best examples of summative evaluation. Sometimes, summative evaluation may not necessarily be terminal.

Cumulative assessments undertaken solely for the purposes of selection, promotion, prediction, recording and other administrative purposes can also be considered as a series of summative evaluation.

In the process of teaching and learning, summative evaluation is concerned with making judgements, to which extent the instructional objectives have been achieved. Such evaluation is carried at the end of instruction or lesson or unit.

Therefore, it represents a final test or measure of the student's progress or gains made by him as a result of a course of learning. Both formal as well as informal techniques may be used for conducting such evaluation.

The formal techniques include standardized tests, teacher made tests, questionnaires, interviews, rating scale, work assignments,projects etc. Among the informal techniques, may include observations, discussions, comments and feedback given by the students etc.

CharacteristicsofSummative Evaluation

The various characteristics of summative evaluation can be listed as below:

- ✓ Summative Evaluation summarises the final progress of the students as a result of a course of learning unit or lesson.
- ✓ Summative Evaluation is carried out less frequently than formative evaluation, usually at the end of a unit or course of instruction.
- ✓ The results of such evaluation may be safely used for making comparison among students, placing them in order of merit or taking decisions about their promotion and awarding degree or diploma. It is this characteristic of summative evaluation which enables it to be called as certifying evaluation.
- ✓ Advantages of Summative Evaluation Now, let us discuss some advantages of Summative Evaluation:
- ✓ The major function of the summative evaluation in theclassroom is to determinethestatus of achievement at theend of an instruction.
- ✓ Summativeevaluationhelpsto determinehowwellthings went.
- ✓ Formal classroom tests, unit tests, final examinations orsemester end examinations etc. are the most frequently used tools in this type of evaluation.
- ✓ Relative to formative evaluation, there is great finalityassociated with summative evaluation.
- ✓ The information gathered through summative evaluation is less detailed in nature but broader in scope of content or skills assessed.
- ✓ **Formative Evaluation:**
- ✓ Formativeevaluationisusedduringtheteachinglearning process to monitor the learning process.
- ✓ Formativeevaluationisdevelopmentalinnature.Theaimofthis evaluation is to improve student's learning and teacher's teaching.
- ✓ Generallyteachermadetestsareused forthispurpose.

- ✓ Thetest itemsareprepared forlimited content area.
- ✓ Ithelpstoknowtowhatextenttheinstructionalobjectiveshas been achieved.
- ✓ Itprovidesfeed-backtotheteachertomodifythemethodsand to prescribe remedial works.
- ✓ Onlyfew skillscan betestedin this evaluation.
- ✓ Itisacontinuousandregular process.
- ✓ Itconsiders evaluationas aprocess.
- ✓ Itanswerstothequestion,whethertheprogressofthepupilsin a unit is successful?
- ✓ **Summative Evaluation:**
- ✓ Summativeevaluationisusedafterthecoursecompletionto assign the grades.
- ✓ Summativeevaluationisterminalinnature.Itspurposeisto evaluate student's achievement.
- ✓ Generallystandardized testsareusedfor thepurpose.
- ✓ Thetests itemsarepreparedfrom the wholecontent area.
- ✓ Ithelpstojudgetheappropriatenessoftheinstructional objectives.
- ✓ Ithelpstheteachertoknowtheeffectivenessoftheinstructional procedure.
- ✓ Largenumber ofskills canbetestedin this evaluation.
- ✓ Itisnotregularandcontinuousprocess.
- ✓ Itconsidersevaluationas aproduct.
- ✓ Itanswerstothequestion,thedegreetowhichthestudentshave mastered the course content.

DiagnosticTest

Dependingonthebasisoftimingofevaluationandpurposeof evaluation, Evaluation can be classified into three types viz.

- ✓ DiagnosticEvaluation

- ✓ FormativeEvaluation
- ✓ Summative Evaluation

Diagnostic Evaluation is usually done in the teaching learning process in order to find out the specific weakness or strengths of an individual or at class level. Such evaluation is called for when learning difficulties persist. It helps to detect the underlying causes of the problems and to formulate a suitable plan of remedial action.

Diagnostic evaluation task may be performed prior to teachingto help to get information about what the students know about a certain topic, contents or area of learning which is going to be taught to them.In this way it may help the teacher to plan his instructional programmes suitable to the needs, interests and abilities of the students.

One can make its use throughout the delivered lesson or unit of teaching for diagnosing his students' understanding and interest. Whena teacher makes use of this kind of evaluation in his delivered lesson or unit of teaching, it's a way to know the student's understanding and interest.

Making use of evaluation for such ongoing assessment of the teaching learning outcomes during teaching, pushes it near to formative teaching or some specially designed remedial teaching programmes and measures for the students who are diagnosed as suffering from serious learning problems.

Hence main objective of diagnostic evaluation is to find the nature and causes of persistent learning problems and to formulate a plan for seeking suitable remedial actions. This, therefore, helps to design the course and curricula according to the capabilities of the learner to help him overcome his deficiencies in knowledge, skills and abilities.

Thevarious purposesofDiagnostictests are:

- ✓ To study the nature of difficulties of the pupils in the subject matter.

- ✓ To find whether or not the students are performing according to the expectations.
- ✓ Toanalysethedifficulties ofthestudentsinaparticularphaseof the subject matter.
- ✓ To get reliable information concerning the weakness of the pupils in order to overcome them by concentrated action and by remedial teaching.
- ✓ Diagnosiscan bedoneby various ways.

According to Brueckner, the various techniques of diagnosis are as below:

- ✓ Observation of the pupil's work on ordinary daily assignmentsor under standard situations.
- ✓ Systematicanalysisofvariouscharacteristicsofthepupil'swritten work.
- ✓ Systematicanalysisofthepupil'soralresponsesandreactions.
- ✓ Use of objective analytical diagnostic devices to determine the faults of the pupils.
- ✓ Conducting interview either with the pupil, his family members or others of his social group to locate contributory conditions.
- ✓ Various laboratory procedures may be applied to locate the problems. •Carrying out Action Research. This way Diagnostic tests play important role in diagnosing the problems and organising remedial action by way ofthe remedial teaching. The various uses of diagnostic tests may be listed below:
- ✓ Diagnostic tests act as inventory to find out how much the student knows about a particular phase of the subject matter.
- ✓ Diagnostic tests are used to discover and analyse the difficulties of the students to provide specific remedial measures to remove their difficulties.
- ✓ These tests are used to provide appropriate remedial instructions to the individual students as per their need.

- ✓ Diagnostic tests provide reliable data regarding the abilities, interests as well as the difficulties experienced by the students.
- ✓ Diagnostic tests are mainly used for discovering faults, difficulties, handicaps and weaknesses of the students.
- ✓ As discussed above, diagnostic tests are used to find out the causes of unsatisfactory achievement and adjustment.
- ✓ After finding out the causes of weakness, it is the duty of the teacher to remove them. This process of correction is done by Remedial Teaching.

The teacher should keep the following points in mind whileconstructing diagnostic tests:

- ✓ Individual differences of the students in their studies should be kept in mind while constructing any diagnostic test.
- ✓ Theteachershouldselectthevariousitemsofthetestwhile keeping in mind the varying abilities of the students.
- ✓ Theageof students,classandtheir maturitylevelshouldalsobe kept in mind while constructing a diagnostic test.
- ✓ A pilot study is always beneficial before giving a final shape to the diagnostic test.

StandardizationofTest

Standardized tests arc carefully constructed tests that have uniformity of procedure in scoring, administering, and interpreting the test results. A standardized test is generally made by a professional tester or a group of testers. Standardized tests are not restricted to use in a school or a few schools but to a larger population, so that many schools can use such types of tests to assess their own performance etc. in relation to others and the general population for which the test has beenstandardized.Standardized testsarethoseteststhatareconstructed by an individual or by a group of individuals and are being processed and universalized for all situation and for all purposes

1. They consist of items of high quality. The items are pretested and selected on the basis of difficulty value, discrimination power, and relationship to clearly defined objectives in behavioral terms.

2. As the directions for administering, exact time limit, and scoring are precisely stated, any person can administer and score the test.

3. Norms,basedonrepresentativegroupsofindividuals,areprovidedas an aid for interpreting the test scores. These norms are frequently based on age, grade, sex, etc.

4. Information needed for judging the value of the test is provided. Before the test becomesavailable, reliability and validity are established.

5. A manual is supplied that explains the purposes and uses of the test, describesbrieflyhowitwasconstructed,providesspecificdirectionsfor administering,scoring,andinterpretingresultscontainstablesofnorms, and summarizes available research data on the test.

6. Teststhatarestandardizedas theyarepre-determinedandsetthrough norms established.

7. Itissubject-specificandnotrelatedtodifferentsubjects.

Principles and steps involved in the Construction of Achievement test Achievementtest

Achievement test is tool for teachers for evaluationof studentsin school situation. With the help of achievement test we can measure the amount of success of an individual in specific field.

In school environment it is used as an instrument to measure success of an individual in particular subject or group of subjects. It gives the knowledge about what an individual acquire by testing his abilities.

Definitions

Achievement test is the tool which helps in measures the capacities and capabilities of an individual. It is also helpful in upgradingthestandardofeducationinanenergeticwaysothatthe

individual can see with their own eyes that what they achieve by theirpast learning.

Generalprinciplesorstepsforconstructionofachievementtest

Followingarethesteps for constructingan achievement test.

1. **Planningthetest**
   - ✓ Designingthetest
   - ✓ Preparationofblueprint
2. **PreparingPreliminary draft**
   - ✓ Itemwriting
   - ✓ Item editing
   - ✓ Pretry out
3. **Thetryout**
4. **Itemanalysis**
5. **Preparingthefinaldraft**
6. **Establishmentof**
   - ✓ Reliability
   - ✓ Validity

Steps for construction of achievement test is described belowbriefly.

1. **Planningthetest**:

Planning of achievement test will be carried out with the help of two steps.

a. Designingof test

Designing is most important step in the building test. Designer should be careful about planning and making test successful. He should keep this in mind that how and what types of questions are used. He has to decide weightage for different objectives and units in the course. Following points helps designer to design test in systematic way.

- Identificationofobjectives
- Measurementofcontent
- Allotment oftime
- Allotment ofmarks
- Includemultiplechoicequestion
- Emphasisoneach subjectand areaof question

b. Preparation of blueprint After designing preparation of blueprint is the last stage of the planning of test. Here testconstructorput various typeofquestioninblueprintandallotsthemmarksdependingonthe time. The tester writes down his decisions in the form of a blueprint. Following figure is the example of blueprint.

Blue Print of Question Paper: Standard X : English

	Type of Questions			Mental Process										Score	Discourse	Unit
Area	Obj	SA	Essay	1	2	3	4	5	6	7	8	9	10			
Reading	6	5			✓	✓		✓		✓	✓	✓		10	Narrative Essay	2,5
Writing			3		✓	✓	✓			✓		✓		12	Description, Narration	3,4,5,2,1
Literary Skills		8						✓		✓				8	Poems	2,6
Language Elements	4	3				✓		✓	✓					20	Dialogue, Report Description	1,2,4,7

With the completion ofblueprint the remaining decisions ofthe design will become the basis for writing the items.

2. Preliminarydraft

Preliminarydraftispreparedbyfollowingthree stages.

a. Itemwriting: Itisimportantstepinpreliminarydraftandhereblue print is used as a guide writing this draft. Test conductor should have following points in mind when he writes items for preliminary draft.

- ✓ Eachitemcontainssingle idea.
- ✓ Questionsshould be clear.
- ✓ Simpleandeasytounderstand.
- ✓ Doublebarreledquestionshouldbeavoided.
- ✓ Arrangementofitemsshould befromsimpleto complex.
- ✓ Subjectivequestionshouldalsobe avoided.

b. Item editing:Then the item should be edited and reviewed by languageteacherandalsobyexpertsofmeasurement.Languageteacher will check the errors in language and defect in words. By removing defects it is submitting to experts. Experts of measurement measure the level of achievement of items.

c. Pre try out: The draft is modified and remove the shortcomingsof preliminary draft. In this stage constructer is confident for the usability of test.

3. Thetryout

Toensuretheproperoperatingoftestitems andtoremoveshortcoming, itisessentialtohavetryoutofitems.Thishelpsinpredict howstudents will work in actual practices.

At the try out stage, the test should be so timed that nearly 90% of the sampleshouldbeabletoattemptalltheitems ofthetest.Thetestsheets along with answer sheets are collected and answer sheets are used for scoring with the help of scoring keys. Keep following points in mind while testing in sample.

- ✓ Propersittingarrangements.
- ✓ Timeofadministratingthe test.
- ✓ Totaltimerequiredfortest.
- ✓ Propermotivation withthepupil.

4. Itemanalysis

In this stage test constructer examining the responses of respondents in the sample to each test item. It can also be define as it is a statistical procedure by which the appropriate items are selected for the final draft and poor items are rejected. Item analysis is an analysis of responses made to 'teacher made tests' by the pupil in the class.

5. Final draft

In the final draft questions should be arranged in such way that easy, averageanddifficultandagainstarts fromeasyandsoon.Bydoingthis student at least go through whole test because he know that some of remaining questions are easy. When the test is arranged properly with the help of principles, a clear identity of test is appeared.

6. EstablishmentofReliability,ValidityandNorms

With the selection of good items final draft has been prepared and the final step is the establishment of reliability, validity and norms. These test items administered to a larger sample.

a. **Reliability**:Reliability is the degree to which an assessment tool produces stable and consistent results.There are many methods for computing the reliability of a test and the most appropriate method for computing reliability of achievement test is Split-half method.

Typesof Reliability

- ✓ **Test-retest reliability** is a measure of reliability obtained by administering the same test twice over a period of time to a group of individuals. The scores from Time 1 and Time 2 can then be correlated in order to evaluate the test for stability over time.

Example: A test designed to assess student learning in psychology could be given to a group of students twice, with the second administration perhaps coming a week after the first. The obtained correlation coefficient would indicate the stability of the scores

- ✓ **Parallel forms reliability** is a measure of reliability obtainedby administering different versions of an assessment tool (both versions mustcontainitemsthatprobethesameconstruct, skill,knowledgebase, etc.) to the same group of individuals. The scores from the two versions can then be correlated in order to evaluate the consistency of results across alternate versions.
- ✓ Example: If you wanted to evaluate the reliability of a critical thinking assessment, you might create a large set of items that allpertain to critical thinking and then randomly split the questions up into two sets, which would represent the parallel forms
- ✓ **Inter-rater reliability** is a measure of reliability used to assess the degree to which different judges or raters agree in their assessment decisions. Inter-rater reliability is useful because human observers will not necessarily interpret answers the same way; raters may disagree as

to how well certain responses or material demonstrate knowledge of the construct or skill being assessed.

Example: Inter-rater reliability might be employed when different judges are evaluating the degree to which art portfolios meet certain standards. Inter-rater reliability is especially useful when judgments can be considered relatively subjective. Thus, the use of this type of reliability would probably be more likely when evaluating artwork as opposed to math problems.

✓ **Internal consistency reliability** is a measure of reliability used to evaluate the degree to which different test items that probe the same construct produce similar results.

- **Average inter-item** correlation is a subtype of internal consistency reliability. It is obtained by taking all of the items on a test that probe the same construct (e.g., reading comprehension), determining the correlation coefficient for each pair of items, andfinally taking the average of all of these correlation coefficients. This final step yields the average inter-item correlation.
- **Split-half reliability** is another subtype of internal consistency reliability. The process of obtaining split-half reliability is begun by "splitting in half" all items of a test that are intended to probe the same area of knowledge

Theentiretestisadministeredtoagroupofindividuals,thetotal score for each "set" is computed, and finally the split-half reliability is obtained by determining the correlation between the two total "set" scores. Validity refers to how well a test measures what it is purportedto measure. While reliability is necessary, it alone is not sufficient. Fora test to be reliable, it also needs to be valid.

b. **Validity**: It is very important aspect of test and it can be determined as the degree which is capable of measuring achievements and it is design to do so. Valid test is highly reliable. Validity is measured by four methods.

- ✓ Facevalidity
- ✓ Content validity
- ✓ Concurrentvalidity
- ✓ Predictive validity
- ✓ **Typesof Validity**

1. **Face Validity** ascertains that the measure appears to be assessing the intended construct under study. The stakeholders can easily assess face validity. Although this is not a very "scientific" type of validity, it may be an essential component in enlistingmotivationof stakeholders. If the stakeholdersdonotbelievethemeasureisanaccurateassessmentofthe ability, they may become disengaged with the task.

2. **Construct Validity** is used to ensure that the measure is actually measurewhatitisintendedtomeasure (i.e.the construct),andnotother variables. Using a panel of "experts" familiar with the construct is away in which this type of validity can be assessed. The experts can examine the items and decide what that specific item is intended to measure. Students can be involved in this process to obtain their feedback.

3. **Criterion-Related Validity** is used to predict future or current performance - it correlates test results with another criterion of interest. Example: Ifaphysics program designed ameasure to assess cumulative student learning throughout the major. The new measure could be correlated with a standardized measure of ability in this discipline, such as an ETS field test or the GRE subject test. The higher the correlation between the established measure and new measure, the more faith stakeholders can have in the new assessment tool.

BluePrintandQuestion Pattern

ObjectiveType

To mitigate some of the evils of the essay type examinations, objective tests seem to be very useful. Modern educationists lay much stressonthistypeofteststosupplementthetraditionaltypeoftests.

Objective tests are of a large variety. An objective type of test item isone which the response will be objective.
Objectivetypetestitembroadlyclassifiedinto two:

Supplytype(RecallType- The respondenthastosupplythe responses) and

Selectiontype (RecognitionType- Therespondenthastoselect the responses from among the given responses).

ObjectiveType –4 Types

- True–False Items(AlternateResponse Type)
- MultipleChoice Items
- MatchingTypeItemsand
- CompletionTypeTestItems

AdvantagesofObjectiveTypeItems

- ✓ A large amount of studymaterial can be tested in a very shortperiod time
- ✓ Economyoftime.
- ✓ Objectivityofscoring.
- ✓ No bluffing
- ✓ It reduces the subjective element of the examiner to the minimum and
- ✓ If carefully planned, it can measure the higher mental process of understanding, application, analysis, prediction and interpretation.

LimitationsofObjectivetypeitems

- ✓ Difficultyinpreparinggood items.
- ✓ Problemofguessing.
- ✓ Problemofcheating.
- ✓ Inefficiencyintestingcomplicatedskills
- ✓ Highprinting cost and
- ✓ Emphasisontestingsuperficialknowledge.

Matching Items

A matching item consists of two columns: one column of stems or problems to be answered, and another column of responses from which the answers are to be chosen. Traditionally, the column of stems is placed on the left and the column of responses is placed on the right.

It is necessary to answer the multiple-choice item in order to answer the parent matching item. Note also that the responses (item components) in the list at the right have a (s) added to each response in order to eliminate singular-plural extraneous clues.

Because of the nature of the matching task, names with events, forexample,itisclearthatmatchingitemsoftenmeasurerecognitionof factual knowledge rather than higher level mental processes. Here are some hints for writing matching items.

ShortAnswerType

- ✓ A question requiring three value points at most may be defined as a short answer question.
- ✓ Valuepointsdiminishthesubjectivity.
- ✓ Helpin ensuringwidecoverageof content.

Advantagesof ShortanswerTypeItems

- ✓ Largeportion ofthecontent canbecoveredin a test.
- ✓ Noopportunityforguessing.
- ✓ Easytoconstruct,becauseitmeasuresarelativelysimple outcome.
- ✓ Itcanbemadequitobjectivebycarefullyfixingthevaluepoints.
- ✓ Usefulinevaluatingtheabilitytointerpretdiagrams,charts, graphs, etc.

• If carefully prepared, deep level objectives understanding, application and problem-solving skill can be evaluated.

LimitationsofShortanswerTypeItems

- ✓ Itismoresubjectivethan theobjectivetypeof items.

- ✓ Itmayencouragestudenttomemoriesfactanddeveloppoor study habits.
- ✓ Mechanicalscoring isnot possible

Essay Type

- ✓ Itisfreeresponsetestitem.
- ✓ Helpinensuringawidecoverageofcontentandvarietyof objectives.
- ✓ Helpinevaluatingcomplex skills.

Advantages

- ✓ Easytoprepare.
- ✓ Usefulinmeasuringcertainabilitiesandskills.
- ✓ Permittheexamineetowritedowncomprehensivelywhathe knows about something.
- ✓ Promoteoriginalityandcreative thinking.
- ✓ Possibilityofguessworkcanbe eliminated.
- ✓ Reducechanceon thespotcopying.
- ✓ Lowprinting cost.

Limitations

- ✓ Minimum validity.
- ✓ Lackofreliability.
- ✓ No objectivity.
- ✓ Rotememory is encouraged.
- ✓ Itisatime-consumingtestitem

Educationalevaluationiscarriedoutfromtimetotimeforthefollowing purposes:

- ✓ to determine the relative effectiveness of the programme interms of students' behavioural output; Measurement and Evaluation in Education
- ✓ tomakereliabledecisionsabout educationalplanning
- ✓ to ascertain the worth of time, energy and resources invested ina programme

- ✓ to identify students' growth or lack of growth in acquiring desirable knowledge, skills, attitudes and societal values
- ✓ to help teachers determine the effectiveness of their teaching techniques and learning materials
- ✓ to help motivate students to want 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 performances
- ✓ 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 provideajust basisfordetermining at what level ofeducation the possessor of a certificate should enter a career.

FeedbackDevices:

Meaning

Feedback is one of the most effective teaching and learning strategies and has an immediate impact on learning progress. High-quality feedback is specific and ongoing. When delivered on time, Hattie's research shows feedback has an effect size of 1.13 on learning achievement.

Types

Effectivefeedbackfromthepractitioner tothe learner

- ✓ focusesonthequalityofthelearner'sworkproductand/orprocesses
- ✓ motivatesandchallengesthelearnertofurtherdeveloptheir knowledge and skills
- ✓ doesnot givepraise,reward or punishment
- ✓ recognizesthatwhichthe studenthasdone wellandidentifies what has been misunderstood or not understood
- ✓ focusesonthequalityofthe workandis specific
- ✓ isdirectlylinkedtothelearningintentionsandsuccesscriteria
- ✓ maybespoken,agesture or formalizedin writing.

Feedbackfromlearnerto practitioner

Listening to answers to questions and looking closely at thework of learners on learning tasks provides practitioners with powerful feedback about the level of learner understanding and their practice. This evidence supports reflection and can provide strategies to more effectively assist learners to make progress with their learning.

Feedbackfromandtopeers

Feedback often comes informally from and to peers. It can be improved and used productively if learners are taught concretestrategies for evaluating one another's work against the learning intentions and the success criteria and providing appropriate feedback. Knowing the questions to ask when evaluating learning assists learners in the process of self-assessment.

Criteria

Feedbackisakeyelementoftheincrementalprocessofongoing learning and assessment. Providing frequent and ongoing feedback is a significant means of improving achievement in learning. It involves the provision of information about aspects of understanding and performance and can be given by practitioners, peers, oneself and from learners to practitioners.

Effective feedback assists the learner to reflect on their learning and their learning strategies so they can make adjustments to make better progress in their learning.

Reporting to parents and families commonly occurs at least twice per year in a formal written statement from the school. Involving parents and families in the learning process by providing them with more frequent feedback about their child's learning progress and strategies they may use to assist their child to improve is effective in improving student achievement.

This enables the learners to measure their performance in terms of both mastery of the set task and the processes inherent in it. It also helps them to be clear about future goals.

The success criteria set the performance by which achievement of the learning intentions will be measured. The success criteria are made known to the learners and for learning to be most effective the success criteria are co-constructed with the learners.

Effective feedback informs the learner about their progress towards meeting the success criteria.

Purposeoffeedback

Effective feedback is designed to determine a learner's level of understanding and skill development to plan the next steps towards achieving the learning intentions or goals.

Givingandreceivingfeedback

Feedback provides the practitioner and learner with evidence about current knowledge and skill development. Understanding the learner's progress and level of achievement enables the practitioner to make decisions about the next steps to plan in the learning program. It enablesthelearnertoreflectontheirlearningstrategiestoconfirmthem or make changes to improve their learning.

Characteristicsofeffectivefeedback

Feedback improves learning

Feedbackisdesignedtobringaboutanimprovementinlearners' performance and achievement. Feedback can be given by the practitioner or by peers. It can be either formal or informal. It can be oral or written, it can be formative or summative, but overall it must provide the learner with specific advice on how to improve their performance.

Feedbackstartswithlearningintentions

The process of giving feedback begins with the practitioner and learnerclarifyingthelearningintentions(orgoals)fortheactivitiesthey are undertaking and the success criteria by which they will assess the level of achievement to be demonstrated by learners.

Feedbackis timely

Feedbackneeds to betimely.It needs to begiven whilethereis

Feedback needs to be timely. It needs to be given while there is still time for the learners to act on it and to monitor and adjust their learning.

Feedbackisclearandfocusesonimprovementstrategies

Feedback on learning tasks also needs to be regular andprovided as soon as possible after completion. Written, descriptive comments need to be in the language that is accessible to the learners and should refer back to the preliminary discussion of learning goalsand success criteria.

Effective feedback provides specific guidance on how to improve learning outcomes and it enables the learner to think about the learning involved in the task and not just the activity of completing the task

Feedbackencouragesreflection

Theamountof feedback needstobelimitedtowhatlearnerscan reasonably accept. Effective feedback does not merely correct learners' errors but actively requires them to reconsider their work and think

Errorsmeasure misunderstandings

It is recognized that making errors is a fundamental point in improving learning. Feedback on where the misunderstandings and misconceptions are occurring assists learners to move to greater understanding and success, to become more self-directed and to believe in their ability to complete tasks and reach goals.

Feedbackismorethana grade

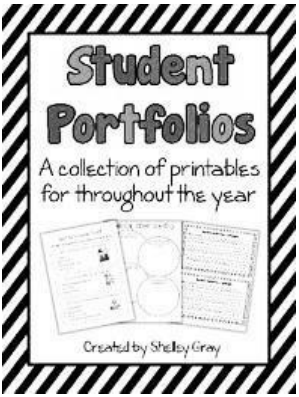
Feedback on formal tasks that just include marks or grades or comments that discuss the level of performance and suggest that the learning journey is finished should be avoided.

This can prevent the learner from fully considering and actingon the feedback. Multiple forms of feedback, such as comments, questions, and discussion provided frequently during learningencourage engagement and motivation to succeed.

Tipsforgivingeffectivefeedbacktolearners

- ✓ Explain to the learners that you are focusing on helping them to understand the assessment of their learning
- ✓ Encouragelearnerstoaskquestionsabouttheir feedback
- ✓ Makearegulartimetodiscussfeedbackwithlearnersonan individual or small group basis
- ✓ Adviselearnersthattheywillhaveanopportunitytoask questions about their assessment
- ✓ Encouragethem tonotedowntheir questions
- ✓ Trytogivefeedbackasclosetothelearningandassessmenttask as possible
- ✓ Bespecificandexplicitaboutfeedback,providingexamples where possible
- ✓ Establishthat thestudent understandswhat isbeing discussed
- ✓ Askthestudentwhat they thinkthey needto improveon
- ✓ Offeryouradviceabout futurestepsfor improvement

- ✓ Invite conversations by asking learners to discuss the work with you and/or with their peers



Assessmentof Portfolios

A portfolio is a systematic collection of student work that represents student activities, accomplishments, and achievements over a specific period of time in one or more areas of the curriculum. There are two main types of portfolios:

ShowcasePortfolios:

Students select and submit their best work. The showcase portfolioemphasizestheproductsoflearning. **Developmental Portfolios**:

Students select and submit pieces of work that can show evidence of growth or change over time. The growth portfolio emphasizes the process of learning.

In both types of portfolios, students write reflective essays or introductory memos to the faculty/assessment committee to explain the work and reflect on how the collection demonstrates their accomplishments, explains why they selected the particular examples, and/or describes changes in their knowledge/ability/attitude.

Portfoliosas adata-collectionmethod for assessment

Portfolios can be created for course assessment as well as program assessment. Although the content may be similar, the assessment process is different.

Course Portfolio	ProgramPortfolio
Course portfolios contain products of student	Program portfolios draw from several courses, extracurricular activities, internships, and other experientiallearningrelatedtotheprogram.

learning within a course, within a single term.	Program portfolios can serve the same purpose as an exit exam: provide evidence of the cumulative effect of the program.
Students include items from a single course.	Students select items from multiple courses and mayberequiredtosubmititemsfromco-curricular activities, internships, employment, etc.
Students write a reflectiveessayor cover memo to explain the portfolioandtheir learning.	Students write a reflective essay or cover memo to explain the portfolio and their learning.
All students in a single course participate.	Allstudents inthe program participate.
Course instructor scores portfoliobyusinga scoring rubric(s).	Multiple faculty members, not the instructor, score the portfolio by using a scoring rubric(s).
Usually every item and every student'sportfolio is scored.	Either all portfolios or a sample of portfolios is scored. In some cases, particular items are scored from the portfolio.

Advantagesof a portfolio

- ✓ Enables faculty to assess a set of complex tasks, including interdisciplinary learning and capabilities, with examples of different types of student work.

- ✓ Helps faculty identify curriculum gaps, a lack of alignment with outcomes.
- ✓ Promotesfacultydiscussionsonstudentlearning,curriculum, pedagogy, and student support services.
- ✓ Encouragesstudentreflectionontheirlearning.Studentsmay come to understand what they have and have not learned.
- ✓ Providesstudentswithdocumentationforjobapplicationsor applications to graduate school.

Disadvantagesofa portfolio

- ✓ Faculty time required to prepare the portfolio assignment and assist students as they prepare them. Logistics are challenging.
- ✓ Students must retain and compile their own work, usually outside of class. Motivating students to take the portfolio seriously may be difficult.
- ✓ Transfer students may have difficulties meeting program-portfolio requirements.
- ✓ Storage demands can overwhelm (which is one reason why e-portfolios are chosen).

4. Usingportfoliosinassessment

Showcase portfolio*:*

Consider starting with one assignment plus a reflective essay from a senior-level course as a pilot project. A faculty group evaluates the "mini-portfolios" using a rubric. Use the results from the pilot project to guide faculty decisions on adding to or modifying theportfolio process.

Developmental portfolio*:*

Consider starting by giving a similar assignment in two sequential courses: e.g., students write a case study in a 300-levelcourseand again in a400-level course. In the 400-level course, students also write a reflection based on their comparison of the two casestudies.Afacultygroupevaluatesthe"mini-portfolios"usingarubric.

Use the results to guide the faculty members as they modify the portfolio process.

Suggested steps:

- ✓ **Determine the purpose of the portfolio**. Decide how the resultsofaportfolioevaluationwillbeusedtoinformtheprogram.
- ✓ **Identifythelearningoutcomestheportfoliowilladdress**.
- ✓ **Decide what students will include in their portfolio.**Portfolios can contain a range of items–plans, reports, essays, resume, checklists, self-assessments, references from employers or supervisors, audio and video clips. In a showcase portfolio, students include work completed near the end of their program. In a developmental portfolio, students include work completed early and late in the program so that development can be judged.
- ✓ **Identifyordevelopthescoringcriteria**(e.g.,arubric)tojudge the quality of the portfolio.
- ✓ **Establishstandardsofperformanceandexamples**(e.g., examples of a high, medium, and low scoring portfolio).
- ✓ **Createstudentinstructionsthatspecifyhowstudentscollect, select, reflect, format, and submit.**

  Collect – Tell students where in the curriculum or co-curricular activitiestheywillproduceevidencerelatedtotheoutcomesbeing assessed.

  Select–Askstudentstoselecttheevidence.Instructstudentstolabel each piece of evidence according to the learning outcome being demonstrated.

  Reflect–Givestudentsdirectionsonhowtowriteaoneortwo-page reflective essay/memo that explains why they selected the particular examples, how the pieces demonstrate their achievement of the program outcomes, and/or how their knowledge/ability/attitude changed.

  Format–Tellstudents theformat requirements(e.g., typeof binder,

fontandstyle guiderequirements, onlinesubmission requirements).

Submit– Givesubmission (and pickup)dates and instructions.

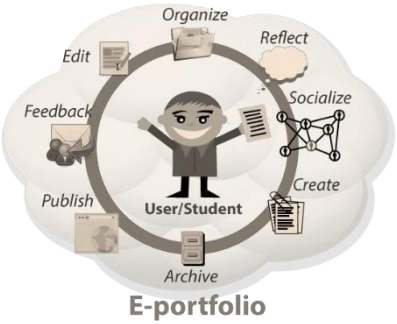
- ✓ A faculty group scores the portfolios using the scoring criteria. Use examples of the standards of performance to ensure consistency across scoring sessions and readers.
- ✓ Sharethe results andusethem toimprovethe program.

Questionstoconsiderbeforeadoptingaportfoliorequirement

- ✓ Whatis thepurposeoftheportfolio requirement?
- ✓ Todocumentstudentlearning?
- ✓ Demonstratestudent development?
- ✓ Learnaboutstudents'reflectionsontheirlearning?
- ✓ Createadocumentuseful to students?
- ✓ Help students growthroughpersonal reflection on theirpersonal goals?
- ✓ Willportfolios beshowcaseor developmental?
- ✓ When and how will students be told about the requirement, including what materials they need to collect or to produce forit?
- ✓ What are the minimum and maximum lengths or sizes for portfolios?
- ✓ Whowilldecidewhichmaterialswillbeincludedinportfolios- -facultyor students?
- ✓ What elements will be required in the portfolio- -evidence only from courses in the discipline, other types of evidence, evidence directlytiedtolearningoutcomes,previouslygradedproductsor clean copies?
- ✓ Will students be graded on the portfolios? If so, how and by whom?
- ✓ How will the portfolios be assessed to evaluate and improve the program?

- ✓ What can be done for students who have inadequate evidence through no fault of their own? (E.g., transfer students)
- ✓ What will motivate students to take the portfolio requirement seriously?
- ✓ How will the portfolio be submitted–hard copy or electronic copy?
- ✓ Who "owns" the portfolios–students or the program/university? If the program/university owns them, how long will the portfolios be retained after the students graduate?
- ✓ Whohasaccesstothe portfoliosandforwhat purposes?
- ✓ Howwillstudent privacyand confidentialitybeprotected?

E-Portfolios(Electronic Portfolios)



Traditional portfolios consist of papers in a folder. Electronic or "e-portfolios" consist of documents stored electronically. Electronic portfolios offer rich possibilities for learning and assessment, with the added dimension of technology.

- o Critical considerations
- o Whataboutanelectronic portfolioiscentraltothe assessment?
- o Whois the audienceforthe portfolio?
- o Willthataudiencehavethehardware,software,skills,time,and inclination to access the portfolio electronically?
- o Does the institution have the hardware and software in place to create portfolios electronically? If not, what will it cost and who will install it?
- o Does the institution have the IT/technical staff to support e-portfolios?

- What is the current level of computer skills of the students and faculty members involved in this project?
- Whowillteachthemhowtousethetechnologynecessaryto create and view electronic portfolios?

E-PortfolioAdvantages:

- Easytosharewithmultiplereaders simultaneously.
- Allowsforasynchronoususe forboth studentsand faculty.
- Allowsformulti-mediaproduct submissions.
- Offerssearchstrategiesforeasyaccesstomaterials.
- Makesupdatingentrieseasier.
- Creatingnavigationallinksmayhelpstudentsseehowtheir experiences interrelate.
- Providesstudentstheopportunitytoimproveaswellasdemonstrate their technology skills.
- Allows faculty to remain in touch with students after graduation if the portfolio can become students' professional portfolio.

E-PortfolioDisadvantages:

- Timeisneeded tomaster the software.
- Studentsmay nothave sufficientcomputer skillstoshowcase their work properly.
- Faculty and students may be reluctant to learn a new softwareprogram.
- RequiresITexpertiseandsupportforbothstudentsand faculty.
- Costassociatedwithdevelopinganin-houseplatformorthe purchase of a commercial product may be expensive.
- Costassociatedwithmaintainingportfoliosoftware.
- Ongoingsupport andtraining are necessary.
- Anexternalaudiencemaynothaveaccesstoproprietary software. Proprietary software may hinder portability.
- Requireslargeamountsofcomputerspace.
- Privacyand security.

ReflectiveJournal

Reflective journals are personal records of students' learning experiences. Students typically are asked by their instructors to record learning-related incidents, sometimes during the learning process but more often just after they occur.

Entries in journals and learning logs can be prompted by questions about course content, assignments, exams, students' ownideasorstudents'thoughtprocessesaboutwhathappenedinaparticular class period.

Journals and learning logs are then submitted to the instructorfor feedback. Both paper-based and online journals or logs can beturned in before or after each class period or at any other designated time.

A student's writing style for journals and logs can be informal and sometimes inappropriate. However, to help students learn more about a particular subject or content, you can require students to write moreformalentriesusingcorrectterminology,facts,and connectionsto course content. Consider providing guidelines and/or rules to help students write meaningful and authentic journals or logs.

Journals have long been used in exploratory writing activitiesbut also can benefit the student beyond learning how to write. As with any instructional or learning activity, selecting to use reflective journals or learning logs as part of a course should fit your teaching style and also connect with the course learning goals and objectives Because it takes time for students to write in their reflective journals or learning logs, so too, it will take time for you to read and respond.

Journals have long been used in exploratory writing activitiesbut also can benefit the student beyond learning how to write.

The literature is not consistent in defining the differences between reflective journals and learning logs.

One may be considered less personal than the other; one might incorporate more instructor prompts and questions while the othermight be more student-driven. “Journals often focus subjectively on personal experiences, reactions, and reflections while learning logs are more documentary records of students’ work process (what they are doing), their accomplishments, ideas, or questions” However, there is evidence that the art of reflection can help boost students’ critical thinking skills, encourage students to think about their own thinking (meta-cognition), and help students prepare for assignments and examinations

Improvementcouldmeanprogress,development,growth,maturity,enhancement,oranynumberofwordswhichcouldimply change. In education, wewant students tochangeforthe better,to grow whilelearningandtomatureintoknowledgeableadults.Recording whathashappened,reflectingonprocessesandanalyzingtoimprove deeperlearningallcan leadto newdimensions of students’ inner selves.

There are a number of stages through which students’ progress when writing reflective journals or learning logs. Each source outlines the stage or process somewhat differently yet with a similar approach.

The essence of these models is presented below as the fundamental method of reflective journal and learning log entries. Note thateachoftheitemsbelowcouldbemodifiedtofitapersonalsituation (for the reflective journal) or a learning environment/situation (for the learning log).

MethodofCreatingReflectiveJournalsandLearningLogs

It is suggested that students capture all formal and informal events which will prove useful when the time comes to return to the reflective journal or learning log for review.

Students should focus on the areas which pose the most problems or difficulty in addition to those which are less problematic. Key to reflective journals and learning logs is to see progression over a period of time and to “gain a sense of achievement”

Key to reflective journals and learning logs is to see progression over a period of time and to “gain a sense of achievement.”

Write,record

- Describe the situation (the course, the context)
- Whowasinvolvedwiththe situation?
- What did they have to do with the situation?

Reflect,think about

- Whatareyourreactions?
- Whatareyourfeelings?
- Whatarethe goodand thebadaspects of the situation?
- Whatyouhave learned?

Analyze,explain,gain insight

- Whatwasreallygoingon?
- Whatsensecanyou makeof the situation?
- Canyouintegratetheory intothe experience/situation?
- Can you demonstrate an improved awareness and self-development because of the situation?
- What can be concluded in a general and specific sense from this situation/experience and the analyses you have undertaken?

Personalaction plan

- What are you going to do differently in this type of situationnext time?
- What steps are you going to take on the basis of what you have learned?"

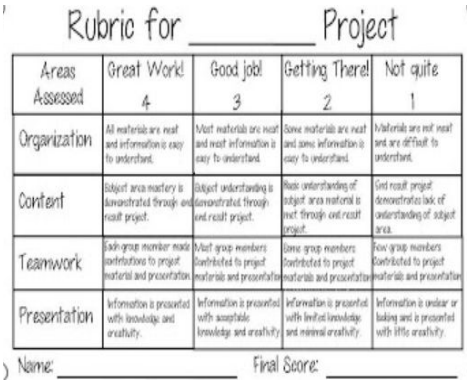
Reflectivejournals and learninglogs can beuseful as ateaching and learning tool. Either format can be adopted in any discipline where you can determine what students are learning and in what areas they need assistance. Be open to read entries by students who might request feedback more often than scheduled.

Field Engagementusing Rubrics

A rubric is a great tool for teachers because it is a simple way to set up a grading criterion for assignments. Not only is this tool usefulforteachers, itis helpfulforstudentsaswell.A rubricdefinesinwriting

what is expected of the student to get a particular grade on an assignment.

Heidi Goodrich Andrade, a rubrics expert, defines a rubric as "a scoring tool that lists the criteria fora piece of work or 'what counts.'" For example, a rubric for an essay might tell students that their work will be judgedonpurpose,organization, details, voice, and mechanics.



Rubric for _____ Project

Areas Assessed	Great Work! 4	Good job! 3	Getting There! 2	Not quite 1
Organization	All materials are neat and information is easy to understand.	Most materials are neat and most information is easy to understand.	Some materials are neat and some information is easy to understand.	Materials are not neat and are difficult to understand.
Content	Subject area mastery is demonstrated through oral and visual project.	Subject understanding is demonstrated through oral and visual project.	Basic understanding of subject area material is met through oral visual project.	Oral visual project demonstrates lack of understanding of subject area.
Teamwork	Each group member made contributions to project material and presentation.	Most group members contributed to project materials and presentation.	Some group members contributed to project materials and presentation.	Few group members contributed to project materials and presentation.
Presentation	Information is presented with knowledge and creativity.	Information is presented with acceptable knowledge and creativity.	Information is presented with limited knowledge and minimal creativity.	Information is unclear or lacking and is presented with little creativity.

Name: _____ Final Score: _____

A good rubric also describes levels of quality for each of the criteria. These levels of performance may be

- ✓ written as different ratings (e.g., Excellent, Good, Needs Improvement) or
- ✓ asnumericalscores(e.g.,4,3,2, 1)

Whyuserubrics?

- When students use rubrics regularly to judge their own work, they begin to accept more responsibility for the end product. It cuts down on the "am I done yet?" questions.
- Rubrics reduce the time teachers spend grading student work and makes it easier for teachers to explain tostudentswhy they got the grade they did and what they can do to improve.
- Parents usually like the rubrics concept once they understand it, and they find rubrics useful when helping with homework. As one teacher says: "They know exactly what their child needs to do to be successful."

Involveyourstudents

- ✓ Understandinga Rubric
- ✓ Creatinga Rubric
- ✓ Listthecriteriathat will beusedin assessingperformance
- ✓ Determineyourperformanceratings/levels

- ✓ After**use,**evaluateandreviserubricas needed.

CompetencyBased Evaluation.

As educators, we are constantly striving to ensure what we are teaching our students is preparing them for the real world that lies ahead, but how can we know for sure?

Assessment can have different meanings depending on who you ask, but ultimately it is a measure to ensure that you are on track towards, or meeting, your goals.

So, how do you measure if the broad goal of preparing students for the world ahead of them is being met with the skills we are teaching in our day-to-day lessons? Competency-based assessment is one viable answer.

WhatisCompetency-BasedAssessment?

Everyone remembers the "fast facts" math tests or lengthy multiple choice exams that quizzed learners on remembering content that has been committed to memory. Competency-Based Assessment (CBA) is definitely not that! CBAs are opportunities created forstudents to apply the skills and methods they have learned in their lessons to real world problems and situations to determine if students can synthesize, apply, and evaluate their learning in a purposeful way.

The skills in focus should be transferable, that is, skills that are relatedtobeing"thinkers"or"contributors"totheworldaroundus,like collaborating with a group or communicating their reasoning. As you can see, the focus is on skills rather than content, and you can understand why. Content is readily accessible at the touch of a finger these days, but skills take time to develop, nurture, and finesse.

Competency-based assessment in education typically beginswith a self-assessment, where students reflect on their abilities andgoals and create a profile for what they feel are strengths and what are areastodevelop.Itmaysurprisemanytohearthatstudentscandothis

as young as kindergarten! Simply identifying on a scale of 1-4 how comfortable they are with a new skill initiates the self-assessment process.

After this step, teachers will provide students with learning opportunities aligned with the goals that are by and large collaboratively-designedandprovideauthenticformativeassessments for students to assess their progress along the way.

WhataretheBenefitsofCompetency-BasedAssessment?

Competency-based assessment provides myriad benefits,starting with the involvement and engagement of the learner. Students are both motivated by authentic tasks and also become involved in reflectingontheirownlearningandleadingtheirowngoalsettingwhen competency-based assessment is meaningfully embedded intoclassroom practice.

When students see purpose in the assessment at hand, like a performance task that requires students to utilize math skills to navigate a multi-step real world problem, student engagement increases and in turn provides a truer picture of what students are able to do because of their desire to demonstrate their abilities.

Further, competency-based assessment affords opportunities for teachers to naturally involve students in the cycle of continuous improvement, bringing students back to analyze and discuss their work, track progress over time, and set new goals for themselves as learners and thinkers that they can measure with future CBAs.

Competency-BasedAssessmentMethodstoUsein YourClassroom

As mentioned, one easy entry point is just beginning with a rating scale where students become familiar with (and frequently reference) a four point scale to assess their comfort and ability with certain skills in focus.

(1) Iam not surewheretostart,

(2) Iremember this but need practice,

(3) Ican do this on my own,

(4) I can teach someone else. As learners get older, the complexityofsuchaself-assessmentcanbecomefarmoresophisticated but will still be grounded in those basic competency levels.

The assessment process is interwoven with the learning process to create a continuous cycle for improvement where assessment guides and informs the new learning activities. Formative assessments become a critical component to CBA where intermittent checks are taken of student progress to inform if the skills they are learning are developing to a level where students can utilize them independently and inauthentic ways. Teachers will collaborate with students after aformative CBA to engage the student in discourse around where they found success and what challenges remain.

Rubrics with skill competencies are easy to utilize (once developed) across content areas, so that students are continuing toassess these "life skills" as they develop across various learning experiences.

For example, a student may be required to assess their collaborative skills using a four-point collaboration scale for mathgroup work, writing conferences, scientific inquiry, and social studies research. As you can see, CBA can be used across any content area, as long as the focus is on skills and the authentic use of them.

Another critical element to competency-based assessment is engaging students in the design of what mastery will look like. Having students grapple with what a learning outcome will look like,identifying criteria, and then reflecting on their learning with that self- designed criteria, are all meaningful steps in CBA that can be applied across any content area.