UNIT – I

CONCEPT OF ASSESSMENT AND EVALUATION

Test

The test is a tool to measure the knowledge level of your students and adjust the learning material accordingly.

A test is one which tests the knowledge level of the students. Mostly this is done with a series of questions. The questions can differ in form or format, but in the end you want your students to answer questions so you can grade them and see what result they get.

Examination

Examination system was first invented by Henry Fishel or Henry Mishel

In education an examination is a test to show the knowledge and ability of a student. A student who takes an examination is a candidate. The person who decides how well the student has performed is the examiner. It may be a written test, an on-screen test or a practical test. The exam consists of a series of questions. They can both multiple choice or free text questions, or a different format.It is considered as the terminal activity in any Education process -a month, a term, or end of the year.

Difference between test and examination

Test	Examination
A procedure intended to establish the quality, performance, or reliability of something, especially before it is taken into widespread use.	A detailed inspection or study. A formal test of a person's knowledge or proficiency in a subject or skill.
An assessment to see how much one remembers or understands.	An inspection to see how well one is doing.
More informal	More Formal
Checks shorter period of study, e.g. a few lessons	Checks longer duration of study, e.g. end of the year examinations
Short assessment to test for something specific.	Longer, more general test just to ensure that nothing is wrong.

Relation between test and examination

A test and an exam both test the knowledge of a student. So, in most cases tests and exams are synonyms. Both test the knowledge of the students with a series of questions and will grade the questions to get a result.Examination tests you if a student passed or failed in a class. Test is used to

see how much a student remember after a particular class on the particular lesson. Test is less important. Examination is given more importance than test.

They differ in one aspect: An exam is more formal then a test.

Measurement

Measurement requires the use of numbers but does not require the value judgments be made about the numbers obtained from the process. We measure achievement with a test by counting the number of test items a student answers correctly, and we use exactly the same rule to assign a number to the achievement of each, student in the class.

Example:

Raman got 93 marks in a test of Mathematics.

Measurement is all about the numbers and being able to quantify the performance or the abilities. Measurements are more objective as they have numerical standards to compare and record.

It answers the question "how much".

Assessment

Assessment refers to the process of gathering and synthesizing information from multiple sources some or all of which may be tests for the purposes of discovering and documenting students' strengths and weaknesses, planning and enhancing instruction.

Assessment is the process of documenting knowledge, skills, attitudes and beliefs, usually in measurable terms. The goal of assessment is to make improvements, as opposed to simply being judged. In an educational context, assessment is the process of describing, collecting, recording, scoring, and interpreting information about learning.

Assessment & test

Assessment is a broad term that includes testing. A test is a special form of assessment. Tests are assessments made under contrived circumstances especially so that they may be administered. In other words, all tests are assessments, but not all assessments are tests.

Evaluation

Evaluation is a process that critically examines a program. It involves collecting and analyzing information about a program's activities, characteristics, and outcomes. Its purpose is to make judgments about a program, to improve its effectiveness, and/or to inform programming decisions .

Evaluation is the process of determining merit, worth, or significance; an evaluation is a product of that process" -Scriven

"An educator [whose] success is to be judged by what others learn" rather than a "referee [for] a basketball game" who is hired to decide who is "right" or "wrong". -Cronbach

To evaluate is to assess or appraise. Evaluation is the process of examining a subject and rating it based on its important features. We determine how much or how little we value something, arriving at our judgment on the basis of criteria that we can define.

In short, evaluation is judgmental.

Example:

Ravi got 90 marks in a science examination.

His performance is good.

Purposes of evaluation

Evaluation can be conducted for the purposes of decision making, judgements, conclusion, findings, new knowledge, organizational development and capacity building in response to the needs of identified stakeholders leading to improvement, decisions about future programming, and/or accountability ultimately informing social action ameliorating social problems and contributing to organizational or social value.

Relation between Evaluation and Measurement

- Evaluation is integrated with entire task of education, and not only with test, examination and measurement.

- Evaluation encompasses test and measurement but also goes beyond it.

- Evaluation depends upon measurement, but it is not synonymous with it.(It means that measurement and evaluation is not same)

- Measurement is Quantitative determination of how much an individual performance has been while evaluation is Qualitative judgement of how good or how satisfactory an individual performance has been.

- Measurement describe a situation, Evaluation judges its work.

- Measurement is only a tool to be used in evaluation.

Appraisal

The act of examining someone or something in order to judge their qualities, success, or needs.

An appraisal is a judgment of something especially an estimate of how much its worth.

It is a process executed to assess the performance or contribution of each employee over a given period of time against the predefined goals.

Performance appraisal is a process carried out to reward the best employees with promotions/ pay increases or both and provide more direction to the low performing employees so that they can improve.

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- Measurement is all about the numbers and being able to quantify the performance or the abilities. Evaluation using the data and information to judge success or fail.

- Measurement is only a tool to be used in evaluation.

  Evaluation: Judging the score 20 as poor, 50 as average and 95 as excellent.

Difference between measurement and evaluation

Measurement	Evaluation
Measurement is the process of assigning numbers to events based on an established set of rules.	Evaluation is concerned with making judgments about instruction, a curriculum, or an educational system, assessment is concerned with the students' performance.
It is an old concept	It is a new and technical concept
It answer the question "how much"	It answer the question "how good" or how satisfactory
Scope of measurement is narrow	Scope of evaluation is wider
It simply indicates the numerical value.	It gives the value judgement to the numerical value.
It is objective.	It is subjective.

Differences between Assessment and Evaluation

Assessment	Evaluation
The meaning of assessment is to review the 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 something or someone by measuring the performance on the basis of existing standards.
An assessment is an ongoing process.	An evaluation provides closure on the existing process.
The purpose of assessment is to improve the quality of performance.	The purpose of evaluation is to judge the performance.
The assessment is an individualized process and is not done against already set standards.	The evaluation is applied against the set standards.
It is process oriented.	It is product oriented.
The outcome of assessment is constructive feedback.	The outcome of evaluation is to show shortcomings.

Purpose of assessment

Assessment is an integral part of instruction, as it determines whether or not the goals of education are being met. It plays a major role in how students learn, their motivation to learn, and how teachers teach.

Assessment is used for various purposes.

- **Assessment *for* learning**: where assessment helps teachers gain insight into what students understand in order to plan and guide instruction, and provide helpful feedback to students.

- **Assessment *as* learning:** where students develop an awareness of how they learn and use that awareness to adjust and advance their learning, taking an increased responsibility for their learning.

- **Assessment *of* learning**: where assessment informs students, teachers and parents, as well as the broader educational community, of achievement at a certain point in time in order to celebrate success, plan interventions and support continued progress.

Principles of Assessment

- It is central to classroom practice.
- It should be educative.
- It should be fair.
- It should be designed to meet their specific purposes.
- It should lead to informative report.
- It should lead to school wide evaluation process.

- It focuses on out students learn.
- It should be valid.
- It is reliable.
- It is objective.
- It is a key professional skill.
- It is a part of effective instructional planning.
- It is sensitive and collaborative.
- It should be inclusive and equitable.
- Information of an assessment should be explicit, assessable and transparent.

Characteristics of good assessment tool

- Reliability

- Validity

- Objectivity

- Practicability

- Comprehensiveness

Reliability

Reliability of a tool refers to the degree of consistency and accuracy with which it measures what it is intended to measure. If the evaluation gives more or less the same result every time it is used, such evaluation is said to be reliable.

Validity

A test is said to be valid when it measures what it needs to measure. It should fulfill the objectives for which it is developed. Validity of a test refers to it's truthfulness. Suppose you want to know whether a Numerical reasoning test is valid. If it really measure the reasoning ability, the test can be said to be valid.

Objectivity

A tool is said to be objective if it is free from personal bias of interpreting its scope as well as in scoring the responses. Objectivity of a test refers to two aspects:

- Item objectivity

- Scoring objectivity

Item objectivity

It means the items of the test must need a definite single answer. If the answer is scored by different examiner the marks would not vary.

Scoring objectivity

It means that by whosoever scored, the test would fetch the same score.

Practicability

The test or evaluation system should also be as practical as possible. For meeting this criteria, it should be easy to prepare, easy to administer, easy in scoring etc.

Comprehensiveness

It refers to its length and extensiveness as to cover the complete course or learning experiences to be tested. It should be competent enough to test all the stipulated objectives in terms of knowledge, understanding, skills, abilities, interests and attitudes etc.

Unit-II

Perspectives on Assessment and Evaluation

Learning theories

Learning theories are an organised set of principles explaining how individuals acquire, retain and recall knowledge. By studying and knowing the different learning theories we can better understand how learning occurs. The principles of the theories can be used as guidelines to help select instructional tools, techniques and strategies that promote leaning.

Three learning theories:

- Behaviorism

- Cognitivism

- Constructivism

Behaviorism learning theory

The behaviorism learning theory is the idea that how a student behaves is based on their interaction with their environment. It suggests that behaviors are influenced and learned from external forces rather than internal forces. Behavioral learning theory is the basis for psychology that can be observed and quantified. According to behavioral psychology, there are two major types of conditioning:
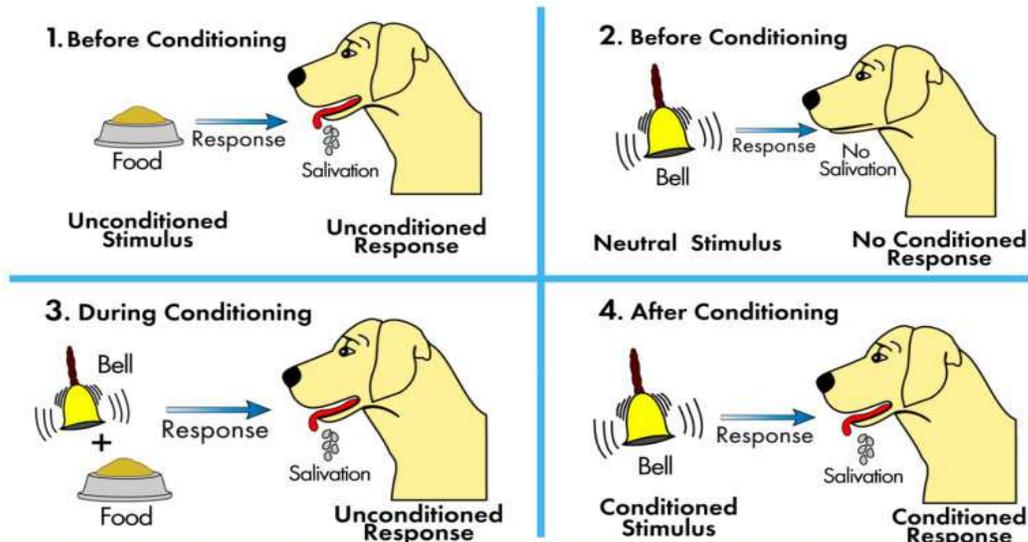
- Classical conditioning

- Operant conditioning

Learning process

The learning process of based on objectively observable changes in human behavior. Behavior theorist define learning simply as the acquisition of new behavior or change in behavior. Learning begins when a cue or stimulus from the environment is presented and the learner reacts to a stimulus with some type of response. Consequences that reinforce the desired behavior are

arranged to follow the desired behavior. The new behavioral pattern can be repeated do it becomes automatic. The change in the behavior of the learner signifies that learning has occurred.

Classical Conditioning theory – Ivan Pavlov

Classical conditioning is a technique in which a neutral stimulus is paired with a naturally occurring stimulus. Eventually, the neutral stimulus comes to evoke the same response as the naturally occurring stimulus, even without the naturally occurring stimulus presenting itself.

Operant Conditioning theory – Skinner
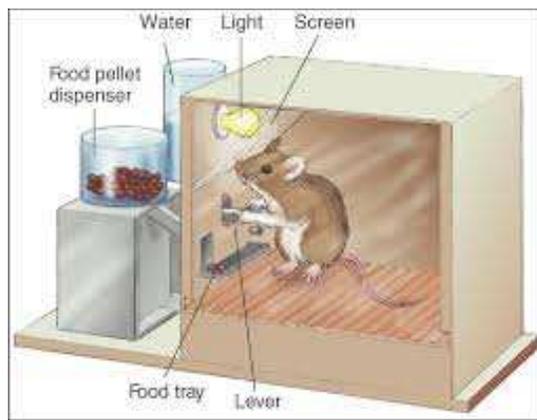
Operant conditioning is a method of learning that occurs through reinforcements and punishments. Through operant conditioning, an association is made between a behavior and a consequence for that behavior. Rewards increase the likelihood that behaviors will be repeated, while punishments decrease the likelihood of repetition.

Application of behaviorist learning theory

- Drill/ Rote work

- Repetitive practice

- Bonus points

- Participation points

- Verbal reinforcement

- Establishing rules

Teachers in a classroom can utilize positive reinforcement to help students better learn a concept. Students who receive positive reinforcement are more likely to retain information moving forward, a direct result of the behaviorism theory.

Cognitivism

Cognitivism is a learning theory that focuses on the processes involved in learning rather than on the observed behavior. As opposed to Behaviorists, Cognitivists do not require an outward exhibition of learning, but focus more on the internal processes and connections that take place during learning. It is also known as cognitive development. The underlying concepts of cognitivism involve how we think and gain knowledge. It involves examining learning, memory, problem solving skills, and intelligence.

Cognitive learning theory

Cognitive learning theory looks at the way people think. Mental processes are an important part in understanding how we learn. The cognitive theory understands that learners can be influenced by both internal and external elements. Plato and Descartes are two of the first philosophers that focused on cognition and how we as human beings think. Piaget is a highly important figure in the field of cognitive psychology, and his work focuses on environments and internal structures and how they impact learning. At the most basic level, the cognitive theory suggests that internal thoughts and external forces are both an important part of the cognitive process. And as students understand how their thinking impacts their learning and behavior, they are able to have more control over it.

Cognitive learning theorists believe learning occurs through internal processing of information. It pays more attention to what goes on inside the learners head and focus on mental processes rather than observable behavior. Change in behavior are observed and used as indicators as to what is happening inside the learners mind.

Piaget's theory of cognitive development

Stage	Age	Key information
Sensorimotor	0–2 years	Infants start to build an understanding of the world through their senses by touching, grasping, watching, and listening. Infants develop object permanence.

Preoperational	2–7 years	Children develop language and abstract thought. Children begin to use symbolic play ("playing pretend"), draw pictures, and talk about things that happened in the past.
Concrete operational	7–11 years	Children learn logical concrete (physical) rules about objects, such as height, weight, and volume. Children learn conservation, the idea that an object, such as water or modeling clay, remains the same even when its appearance changes.
Formal operational	11+	Children learn logical rules to understand abstract concepts and solve problems.

Application of cognitive learning theory

- Classifying or chunking information

- Linking concepts

- Providing structure

- Real world examples

- Discussions

- Problem solving

- Analogies

- Imagery/providing pictures

- Mnemonics

The cognitive learning theory impacts students because their understanding of their thought process can help them learn. Teachers can give students opportunities to ask questions, to fail, and think out loud. These strategies can help students understand how their thought process works, and utilize this knowledge to construct better learning opportunities.

Constructivism

Constructivism is basically a theory based on observation and scientific study about how people learn.

Three basic assumptions underlie Constructivism:

- Learners construct knowledge.

- Learners have prior knowledge and experiences that they use in the learning process.

- Learning is both an active and reflective process.

Behaviorism is often seen in contrast to constructivism. Constructivists are more likely to allow for experimentation and exploration in the classroom and place a greater emphasis on the experience of the learner. In contrast to behaviorists, they feel that an understanding of the brain informs teaching.

Constructivism learning theory

The Constructivism learning theory is based on the idea that students actually create their own learning based on their previous experience. Students take what they are being taught and add it to their previous knowledge and experiences, creating a unique reality that is just for them. This learning theory focuses on learning as an active process, personal and unique for each student. Constructivist theorists also contend that learning is developmental in the sense that people make sense of their world by assimilating, accommodating or rejecting new information. When individuals assimilate, they incorporate the new experience into an already existing framework without changing that framework. In contrast, when individuals' experiences contradict their internal representations, they may change their perceptions of the experiences to fit their internal representations. According to the theory, accommodation is the process of reframing one's mental representation of the external world to fit new experiences.

Jerome Bruner proposed three modes of representation:

- Enactive representation (action-based)

- Iconic representation (image-based)

- Symbolic representation (language-based)

Enactive(0-1 years)

A person learns about the world through actions on physical objects and the outcomes of these actions.

Iconic (1 - 6 years)

Information is stored as sensory images (icons), usually visual ones, like pictures in the mind.

Symbolic (7 year onwards)

Information is stored in the form of a code or symbol, such as language.

Application of constructivist learning theory

- Case studies

- Research projects

- Problem based learning

- Brainstorming

- Collaborative learning/Group work

- Discovery learning

- Simulations

Teachers can utilize constructivism to help understand that each student will bring their own past to the classroom every day. Teachers in constructivist classrooms act as more of a guide to helping students create their own learning and understanding. They help them create their own process and reality based on their own past. This is crucial to helping many kinds of students take their own experiences and include them in their learning.

Application of learning theories in teaching

Teachers can create specific strategies and techniques to apply these learning theories in their classroom. Teachers need to first focus on getting a well-rounded education to learn about all kinds of techniques for teaching and classroom management. Teachers need to understand learning theories to be prepared to utilize them in their classroom. An understanding of learning theories helps teachers connect to all different kinds of students. Teachers can focus on different learning styles to reach different students, creating teaching that focuses directly on student needs and aptitudes.

Classification of assessment based on purpose

- Formative assessment

- Summative assessment

- Prognostic assessment

- Diagnostic assessment

Michael Scriven coined the terms formative and summative evaluation in 1967,

Formative Assessment

It refers to a wide variety of methods that teachers use to conduct in-process evaluations of student comprehension, learning needs, and academic progress during a lesson, unit, or course. It help teachers identify concepts that students are struggling to understand, skills they are having difficulty acquiring, or learning standards they have not yet achieved so that adjustments can be made to lessons, instructional techniques, and academic support. Formative assessments are generally low stakes, which means that they have low or no point value. Participating in formative assessment involves students in active learning, keeps them on task, and focuses them on learning goals.

It can be a formal and/or informal assessment procedure employed by teachers during the learning process. Effective formative assessment includes qualitative feedback (rather than scores or grades),

which allows the student opportunities to remediate or fill in any gaps in their learning. It also provides helpful information (to the instructor) on the impact of instruction, and identifies opportunities for alteration of teaching methods to ensure the greatest student achievement.

Examples of formative assessments include asking students to:

- Quizzes

- Assignments

- Homework

- Test

- Short discussion

- Summarizing the main points in a lecture

- Questioning strategies

- One minute paper

- Exit card

- In-class games

- Group presentations

Summative assessment

Summative assessment sums up what a pupil has achieved at the end of a period of time, relative to the learning aims and the relevant national standards. The period of time may vary, depending on what the teacher wants to find out. There may be an assessment at the end of a topic, at the end of a term or half-term, at the end of a year or, as in the case of the national curriculum tests, at the end of a key stage. Summative assessments are often high stakes, which means that they have a high point value, take place under controlled conditions.

Summative assessments are all about the end result.

- What have students learned?

- What did they retain?

- How much have they progressed?

Examples of summative assessments include asking students to:

- Quarterly ,Half yearly and Annual examination

- Final exams

- End of project

- Midterm exams

- Cumulative work over an extended period such as a final project or creative portfolio

- State assessments

- Standardized tests(SAT)

- End-of-unit or chapter tests

- Semester exams

Formative vs. summative assessment

"When the cook tastes the soup, that's formative assessment. When the customer tastes the soup, that's summative assessment."

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT
It is conducted during the instructional process.	It is conducted after the instructional process.
It is diagnostic in nature.	It is evaluative in nature.
It is an assessment for learning.	It is an assessment of learning.
It includes little content area.	It includes complete chapters or content area.
It purposes is to enhance student learning.	It purposes is to evaluate student achievements.
Monitor student learning.	Evaluate student learning.
It is low-stake test.	It is high-stake test.
To monitor student learning process.	To provide grades.
It is process oriented.	It is product oriented.
It is mostly informal	It is formal.

Diagnostic Assessment (pre-assessment)

Diagnostic assessment is one which is given at the beginning of the course or the beginning of the unit/topic, is known as diagnostic assessment. This assessment is used to collect data on what students already know about the topic. Diagnostic assessments are sets of written questions (multiple choice or short answer) that assess a learner's current knowledge base or current views on

a topic/issue to be studied in the course. The goal is to get a snapshot of where students currently stand - intellectually, emotionally or ideologically - allowing the instructor to make sound instructional choices as to how to teach the new course content and what teaching approach to use.

Just like formative assessment, diagnostic assessments intended to improve learner's knowledge. Besides, it looks backward rather than looking forward. It reviews what the learner knows and difficulty that they are facing in learning. It takes place before instruction. It is usually low-stakes test. Diagnostic assessments provide instructors with information about student's prior knowledge and misconceptions before beginning a learning activity and also diagnose students' strengths and areas of need. These assessments also provide a baseline for understanding how much learning has taken place after the learning activity is completed.

Advantages

- It clarifies misconceptions the students may have.

- It enables the teacher to build on their students' strengths.

- It shows how much groundwork the teacher will have to do to introduce new concepts or information.

- At the end of the course the teacher can show the students their pre-tests and point out how much their knowledge has grown.

- Indicate students' prior knowledge.

- Assess the learning that has occurred during a teaching/learning session.

- Can help instructors adjust content and activities to encourage more effective learning.

- Can help students understand the value of a lesson, module, or entire course.

- May motivate students to seek accurate information and practice.

- Demonstrate to students that their instructors care about them as people and about their success as learners.

Prognostic assessment

Prognostic assessments act as a means of estimation and prediction of the future career. Prognostic assessment combines basic aspects taken from an assessment of learning processes and an assessment of learning achievements and tries to formulate a diagnosis for the student's future. This type looks at a student's future development.

It asks questions like: how can we support the individual development and the positive learning processes?

Prognostic assessments become very important at different stages in a student's academic life:

- school enrolment

- switching classes/schools

- transfer to a different type of school (for example, special education)

- transfer to a higher school

Classification of assessment based on Scope

- Teacher made test

- Standardised test

Teacher-made tests

These are specially designed by the teacher to his class for a special purpose, not developed by measurement expert. So these tests are commonly known as teacher-made tests. A large number of tests covering the content of specific courses or part of courses are prepared by teachers for use in their own classrooms. These tests would likely to reflect what was actually taught in classrooms. The distinguishing feature of these tests is that they are constructed by the teachers and covered only the materials taught in a particular course and unit within the course. They are not field tested and revised and they are not administered to a norm group. A particular test is prepared for a particular class, probably have never been given to any other classes. Thus, teacher-made tests are developed for a specific situation, on the basis of a specific set of objectives and a specific group and they are prepared for a single administration. The content of these tests is more circumscribed being based on the curriculum of a particular course of a school. There is a need for properly planned and carefully prepared teacher made tests to evaluate knowledge of the content taught in the class. Preparing and using teacher-made test in teaching and learning is a regular task of teachers. For preparing teacher-made tests, objective type or essay type items or both can be constructed.

Important features of Teacher made test

- It is simple to use.

- It permit the teacher to assess the student strength weaknesses and needs.

- It motivates the student.

- Its purpose is to assess the student achievement in a particular unit or content.

Construction of teacher made test

- Identifying instructional objectives

- Making the design

- Preparing blueprint

- Writing the test items

- Developing marking scheme

Standardized test

Standardization literally means "brought to a level". A standardized test is a test that is given to students in a very consistent manner; meaning that the questions on the test are all the same, the time given to each student is the same, and the way in which the test is scored is the same for all students.

It is a test that is administered, scored, and interpreted in the same way for all test-takers.

A standardised test is one that has been carefully constructed by experts in the light of acceptable objectives or purposes; procedure for administering, scoring and interpreting scores are specified in detail so that no matter who gives the test or where it may be given, the result should be comparable; and norms or average for different age or grade levels have been pre-determined. Many assessment experts consider standardised tests to be a fair and objective method of assessing pupils, mainly because the standardised format reduces the potential for favouritism, bias, or subjective evaluations.

Characteristics of a Standardized test

- It is constructed by a experts or test specialists.

- It covers the wide range of content matter as well as objectives.

- It is reliable and valid.

- Students are based on uniform curriculum at state or National level.

Teacher -made Test	Standardized Test
It is constructed by Teacher	It is constructed by expert or test specialist.
It is constructed in a hurried manner.	It is constructed after carefully defining instructional objectives involves test, blueprints, item analysis and revision.
No uniform directions are available for administrating and scoring.	Specific instruction, standardized administration and scoring procedures
Only classrooms norms are available	Decides local, national, school, district norms are available.
Best suited for measuring particular objectives set by Teacher and for intra class comparison.	It is broader curriculum objectives and for inter-class, inter-school and national level comparison.
Teacher-made tests are easy to prepare.	Development of standardized tests involve substantial costs.
It is designed to operate within the restricted situation of a given classroom.	It is designed for a larger operational situation crossing the barriers of a classroom.

Classification of assessment based on attribute

- Achievement test

- Aptitude test

- Attitude test

Achievement test

- Any test that measures the attainment and accomplishment of an individual after a period of learning or training is called Achievement Test.

- Achievement test is a test designed to measure a persons knowledge, skill, understanding etc., in a given field taught in a school.

- A test of educational achievement is one designed to measure knowledge, understanding, or skills in a specified subject or group of subjects.

- The tests which are constructed to measure cognitive, conative and affective changes occurring as a result of teaching school subjects, are called achievement test.

Example of achievement test

- A math exam covering the latest chapter in your book

- A test in your social psychology class

- A comprehensive final in your Sanskrit class

Aptitude

Aptitude means inherent competence to undertake specific tasks. It is the potential, an intrinsic property in an individual and helps undertake particular types of tasks. It is also related to the natural ability to learn particular things. For example, individuals with good aptitude in mathematics are highly likely to do well in computer science as this ability comes naturally to them. It is more about specific abilities that make an individual different from others.

Nature and Characteristics of Aptitude

Bingham has clarified the nature of aptitude in the following points :

- Aptitude of a person is the total sum of his present qualities which points towards the future capacities.

- A particular aptitude of a person indicates his fitness for doing a particular task.

- Aptitude is an abstract noun and not a concrete object or ability, which expresses a specific quality in the whole personality of a person.

- Aptitude exists in the present but it indicates the future capacities.

- There is close relation among aptitude interest, inclination and satisfaction.

- Aptitudes of different people are different and they are more or less in degree.

- Aptitude is the chief cause of individual differences.

- Generally, an aptitude is stationary, very few changes can be effected in it

Aptitude test

An aptitude test is designed to assess what a person is capable of doing or to predict what a person is able to learn or do given the right education and instruction. It represents a person's level of competency to perform a certain type of task.

It is often used to assess academic potential or career suitability and may be used to assess either mental or physical talent in a variety of domains.

Examples of Aptitude Tests

- An aptitude test is given to high school students to determine which type of careers they might be good at.

- A computer programming test to determine how a job candidate might solve different hypotheticaal problems.

Attitude

"An attitude is the degree of positive or negative effect associated with some psychological object "– *Thurston.*

"An attitude is a dispositional readiness to response to certain situations, persons or objects in a consistent manner, which has been learned and has become one's typical mode of response"- *Freeman*. Measuring attitude in this way was started by Thurston in 1927.

Nature and Characteristics of Attitude

- Attitude is a mental talent of a person towards an object, person, activity or thought.

- Attitude can be either positive or negative.

- Attitude is related to one's own experiences.

- Emotions prove helpful in the development of attitude.

- Development of attitudes occurs due to social relations.

- Attitudes of a person are stable so long he does not experiences otherwise; they are subject to change on the basis of environment and experiences.

- Attitudes influence the personality of a person.

Classification of assessment based on Nature of information gathered

- Qualitative

- Quantitative

Quantitative Data

Quantitative Data, as the name suggests is one which deals with quantity or numbers. It refers to the data which computes the values and counts and can be expressed in numerical terms is called quantitative data. In statistics, most of the analysis are conducted using this data. Quantitative data that deal with quantities, values or numbers, making them measurable.Sources of Quantitative Data

- Tests

- Experiments

- Structured interviews

- Non cognitive data such as attendance and discipline.

- Surveys, whether conducted online, by phone or in person. These rely on the same questions being asked in the same way to a large number of people.

- Observations, which may either involve counting the number of times that a particular phenomenon occurs, such as how often a particular word is used in interviews, or coding observational data to translate it into numbers.

Qualitative Data

Qualitative methods of assessment are ways of gathering information that yield results that can't easily be measured by or translated into numbers. They are often used when you need the subtleties behind the numbers – the feelings, small actions, or pieces of community history that affect the current situation. They acknowledge the fact that experience is subjective – that it is filtered through the perceptions and world views of the people undergoing it – and that it's important to understand those perceptions and world views.

Qualitative data can be used to ask the question "why." It is investigative and is often open-ended until further research is conducted. Generating this data from qualitative research is used for theorizations, interpretations, developing hypotheses, and initial understandings. It is difficult to use for very large number of responds. They may involve asking people for "essay" answers about often-complex issues, or observing interactions in complex situations. When you ask a lot of people for their reactions to or explanations of a community issue, you're likely to get a lot of different answers. When you observe a complex situation, you may see a number of different aspects of it, and a number of ways in which it could be interpreted.

Sources of Quantitative Data

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- Experiments

- Structured interviews

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- Observations, which may either involve counting the number of times that a particular phenomenon occurs, such as how often a particular word is used in interviews, or coding observational data to translate it into numbers.

Qualitative Data

Qualitative methods of assessment are ways of gathering information that yield results that can't easily be measured by or translated into numbers. They are often used when you need the subtleties behind the numbers – the feelings, small actions, or pieces of community history that affect the current situation. They acknowledge the fact that experience is subjective – that it is filtered through the perceptions and world views of the people undergoing it – and that it's important to understand those perceptions and world views. When you ask a lot of people for their reactions to or explanations of a community issue, you're likely to get a lot of different answers. When you observe a complex situation, you may see a number of different aspects of it, and a number of ways in which it could be interpreted. qualitative approach is inductive in nature, leading to the development or creation of a theory rather than the testing of a preconceived theory of hypothesis.

Sources of Qualititative Data

- Texts and documents

- Lesson plan

- Concept map

- Audio and video recordings

- Images and symbols

- Interviews, which may be structured, semi-structured or unstructured.

- Focus groups, which involve multiple participants discussing an issue.

- Secondary data, including diaries, written accounts of past events, and company reports.

- Observations, which may be on site, or under 'laboratory conditions', for example, where participants are asked to role-play a situation to show what they might do.

Classification of assessment based on mode of response

- Oral & written

- Selection & supply

Oral(viva voce)

The oral examination in which the candidate gives spoken responses to questions from one or more examiner. It is the oldest form of assessment; it has certainly been traditional practice in academic life. The purpose of oral exams is to confirm a student´s knowledge of a subject matter and/or confirm a grade.

Oral assessments gauge students' knowledge and skills based on the spoken word, typically guided by questions or small tasks. Oral assessments can take on different formats, including: -

- Presentation on a prepared topic

- Interviews or discussions to assess a student's knowledge or skills

- Simulations or demonstrations of skills individually or with others

The oral test is practiced in many schools and disciplines in which an examiner verbally poses questions to the student. The student must answer the question in such a way as to demonstrate sufficient knowledge of the subject. Many science programs require students pursuing a bachelor's degree to finish the program by taking an oral exam, or a combination of oral and written exams, to show how well the student has understood the material. They are also subjective, there isn't just one correct answer to the test questions.

Advantages of Oral Assessments

- Can assess depth of knowledge and skills, allowing for a more comprehensive view of students' abilities, cognitive processes, and conceptual misunderstandings.

- Opportunity for interaction, leading to a greater sense of connection for instructors and students, particularly in the remote environment.

- More authentic form of assessment if students are solving problems, demonstrating skills, and communicating using disciplinary language and scenarios.

- May increase learning, as students often spend more time preparing for oral exams.

- Opportunity for clarification of ambiguous questions in the moment.

- Can prevent some academic integrity issues because follow-up questions can be asked to clarify students' thinking and understanding.

- It takes account of diversity and enables students to develop verbal communication skills that will be valuable in their future careers.

- Some students find it difficult to write so they do better in oral assessments.

- It is an alternative form of examination for students with writing problems in grades below or in college.

Disadvantages of Oral Assessments

- More time to administer than written exams and not typically suitable for larger classes.

- Often more stressful for students, which can interfere with their performance. Students may be unfamiliar with the format, leading to fear and anxiety. Oral exams may be particularly stressful for students with mental health concerns.

- Potential for issues with reliability and fairness if students are asked different questions.

- Potential for bias and subjective grading, as grading cannot be anonymous. Students' articulateness, shyness, speed of thought, gender, ethnicity, language skills, accent, etc. can influence judgments about their knowledge and skills.

- Potential for academic integrity issues as students can pass on questions to others who are taking the exam later.

- Some students find it challenging to present their ideas to a group of people.

Written test

Written test are tests that are administered on paper or on a computer (as an eExam). A test taker who takes a written test could respond to specific items by writing or typing within a given space of the test or on a separate form or document.

Features of written examinations

Written examinations are typically characterized by supervision and time- restriction for completion. Examinations can include a variety of question types including:

- Multiple choice questions

- True/false (T/F)

- Matching items

- Fill-up

- Short answer

- Extended answers or essays

Multiple choice questions (MCQs): It is a series of answers where only one of the offered answers is correct.

True/false (T/F) questions: It offers only two opposing answers. T/F questions can effectively diagnose a learner's level of understanding of complex concepts but can be subject to guesswork.

Matching items : It has two lists of terms are provided and the learner is asked to match terms from one list with terms on another list in terms of certain specifications.

Fill up (or) Completion items: It formed similarly to MCQs but without the offered answers. Learners have to write an answer into the free space provided for it, emphasis is placed on assessing the ability of a learner to produce an appropriate response, not just identify the correct alternative. Learners must know the correct answer to complete structured response questions.

Short answer or structured response questions : Short answer question generally ask for brief text based response. It prompt examines to produce their response rather than selecting from a list. The correct response is a single word or very short phrase. Short answer question go beyond simple recall or recognition.

Extended answers or essays: It emphasis is on testing integration and development of hypotheses.

Merits of Written Tests

- It can provide us a reliable, stable and valid type of evaluation

- It can be planned carefully, keeping in view the objective, contents and learning Experience

- Easy to construct and use several students can be evaluated at a time out at various

- Easy to list educational aims

Limitations

- Difficult to give equal importance to all units

- Difficult to assess the quality of the answer

- The examiner may be carried away by the flowery language or hand writing of the pupils (In essay type)

- There is less reliability and more subjectivity.

Classification of assessment based on nature of interpretation

- Norm-referenced assessment (NRA)

- Criterion-referenced assessment(CRA)

- Self-referenced assessment(SRA)

Criterion-referenced Assessment

A criterion-referenced test is designed to measure how well test takers have mastered a particular body of knowledge. These tests generally have an established "passing" score. Students know what the passing score is and an individual's test score is determined by knowledge of the course material. The main objective of this is to check whether students have learned the topic or not.

Eg:

The standard driving test

Most of the state tests

Characteristic of CRT

- Its main objective is to measure students' achievement of curriculum based skills.

- It is prepared for a particular grade or course level.

- It has balanced representation of goals and objectives.

- It is used to evaluate the curriculum plans instruction progress and group students interaction.

- It can be administered before and after instruction.

Merits

- To discover the inadequacies in learner's learning and assist the weaker section of learner to reach the level of other students through a regular programme of remedial instruction.

- To identity the master learners and non -master learners of a class

- To find out the level of attainment of various objectives of instruction

- To find out the level at which a particular concept has been learnt.

- To better placement of concepts at different grade levels

Limitations

- CRT tells only whether a learner has reached proficiency in a task area but does not show how good or poor is the learner's level of ability.

- Task included in the criterion-referenced test may be highly influenced by a given teachers interest or biases, leading to general validity problem.

- It is important for only a small fraction of important educational achievements. on the contrary promotion and assessment of various skills is a very important function of the school and it requires norm-references testing.

Norm-referenced assessment (NRA)

It is based on comparing the relative performances of students, either by comparing the performances of individual students within the group being tested, or by comparing their performance with that of others of similar age, experience and background. Such assessment may simply involve ranking the students, or may involve scaling their marks.

These test measure student's performance in comparison to other students. Also, the age and question paper is same for both of them. They measure whether the students have performed better or worse than other test takers. It is the theoretical average determined by comparing scores.

Eg:

IQ tests

College entrance tests

Scholastic Assessment Tests

Program eligibility, or school admission

<u>Characteristics</u>

- Its basic purpose is to measure students' achievement in curriculum based skills.

- It is prepared for a particular grade level.

- It is administered after instruction.

- It classifies achievement as above average, average or below average for a givengrade.

<u>Merits</u>

- In aptitude testing for making differential prediction.

- To get a reliable rank ordering of the pupils with respect to the achievement we are measuring.

- To identity the pupils who have mastered the essentials of the course more than the others.

- To select the best of the applicants for a particular programme.

- To find out how effective a programme is in comparison to other possible programme.

<u>Limitations</u>

- Test items that are answered correctly by most of the pupils are not inched in there tests because of their in adequate contribution to response variance. There will be the items that deal with important concepts of course contact

- There is lack of congruence between what the test measures and what is stressed in a local curriculum

- Norm-referencing promotes unhealthy competition and is injurious to self-concepts of law scoring students

<u>Self- referenced assessment (Ipsative assessment)</u>

Ipsative assessment is the practice of assessing present performance against the prior performance of the person being assessed. Learner's performance is compared with their own earlier performance, with a view to determining whether any improvement has been made, or any 'added value' brought about. Such assessment might involve setting a learner the same test prior to and after undertaking a course or unit thereof, keeping track of how a student's average percentage mark or overall grade average changes as they progress through an entire course, or seeing how an athlete's 'personal best' time, distance, etc . improves with training.

"Ipsative" assessments place a primacy upon the individual, and on individual development. It is typically used in informal and practical learning such as sports, music teaching and more recently in online gaming.

With reference to criteria set up in terms of Intended Learning Outcomes- Criterion-referenced

With reference to his peer group - Norm-referenced

With reference to his own progress, i.e. to know his progress - Self-referenced

Classification of assessment based on context

- Internal assessment

- External assessment

Internal assessment

Internal assessment or school-based assessment is designed and marked by the students' own teachers, often in collaboration with the students themselves. It implemented as part of regular classroom instruction, within lessons or at the end of a teaching unit, year level or educational cycle.

It is the evaluation in which the teacher and the examiner are the same person. The same teacher teaches a particular subject and himself sets the paper and evaluates the achievement of the students. No external expert is invited in this type of evaluation. The internal assessment is what you do as part of your coursework - the essays, group assignments, tests, etc. Class test, unit test, weekly test, monthly test, quarterly test, etc. are the examples of internal evaluation.

Advantages of Internal Assessment

It reduces the weightage of external assessment. Moreover, students engage themselves in study throughout the year. The students will be more attentive to studying in class. In addition, it reduces the chances of anxiety and nervous breakdown in students.

Disadvantages of internal assessment

There are chances that teacher may misuse it for their own benefit. Also, in the hand of the inexperienced and insincere teacher, it can cause harm to students. Most noteworthy, it will lose its importance due to unfairness, favoring a student, and bias-ness.

External assessment

External assessment, or standardized assessment is designed and marked outside individual schools so as to ensure that the questions, conditions for administering, scoring procedures, and interpretations are consistent and comparable among students.

It refers to the examination, which is usually taken in the exam period once your lectures and workshops are finished. The evaluation procedure in which the evaluators or examiners are invited from outside is called external assessment. The teacher who are teaching a particular group of students are not involved in the assessment of their students. Hence the teachers and the examiners are different; they are never common. Their performance or achievement are judged or evaluated by outside teachers.

Advantages of External Assessment

It helps students to know their performance. It also helps them to know their knowledge level. In addition, it encourages them to learn and improve their knowledge and grades. Also, it creates a competitive spirit in students. This spirit pushes them to do their level best. For development, building personality and confidence it is very important.

Disadvantages of External Assessment

There are various disadvantages which can cause harm to student life and her/his career. These include the use of unfair means like talking and cheating in the examination hall. Some students just give a paper to only pass the exam to get average marks. In addition, external assessment only covers a part or partial course of study. Most noteworthy, the result is not accurate as it gives an unreliable

Recommendations of NPE- 1968 on examination and evaluation

- It aimed at helping the students to improve his level of achievement rather than at certifying the quality of his performance at a given moment of time

- To make evaluation as a continuous process.

- To improve reliability and validity of exams.

Recommendations of NPE- 1992 on examination and evaluation

Assessment of performance is an Integral part of any process of learning and teaching. As part of sound educational strategy, examinations should be employed to bring about qualitative Improvements in education. The objective will be to re-cast the examination system so as to ensure a method of assessment that is a valid and reliable measure of student development and a powerful instrument for improving teaching and learning.

- The elimination of excessive element of chance and subjectivity.

- The de-emphasis of memorization.

- Continuous and comprehensive evaluation that incorporates both scholastic and non-scholastic aspects of education spread over the total span of instructional time.

- Effective use of evaluation process by teachers, students and parents.

- Improvement in the conduct of examination.

- The introduction of concomitant changes in instructional materials and methodology.

- Introduction of semester system from the secondary stage in a phased manner.

- The use of grades in place of marks.

Recommendations of NPE - 2020 on examination and evaluation

- Assessment is more regular and formative. It is more competency-based, promotes learning and development for our students, and tests higher-order skills. The primary purpose of

assessment will indeed be for learning; it will help the teacher and student, and the entire schooling system, continuously revise teaching-learning processes to optimize learning and development for all students.

- The progress card will be a holistic, 360-degree, multidimensional report that reflects in great detail the progress as well as the uniqueness of each learner in all three domains. It will include self-assessment and peer assessment, and progress of the child in project-based and inquiry-based learning, quizzes, role plays, group work, portfolios, etc., along with teacher assessment. The progress card would also provide teachers and parents with valuable information on how to support each student in and out of the classroom.

- AI-based software could be developed and used by students to help track their growth through their school years based on learning data and interactive questionnaires for parents, students, and teachers.

- To eliminate the need for undertaking coaching classes.

- Board exams will be redesigned to encourage holistic development; students will be able to choose many of the subjects in which they take Board exams, depending on their individualized interests. Board exams will also be made 'easier', in the sense that they will test primarily core capacities/competencies. To further eliminate the 'high stakes' aspect of Board Exams, all students will be allowed to take Board Exams on up to two occasions during any given school year, one main examination and one for improvement, if desired.

- To track progress throughout the school years, and not just at the end of Grades 10 and 12 - all students will take school examinations in Grades 3, 5, and 8 which will be conducted by the appropriate authority.

- The Grade 3 examination would test basic literacy, numeracy, and other foundational skills. The results of school examinations will be used only for developmental purposes and for continuous monitoring and improvement of the schooling system.

- It is proposed to set up a National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), as a standard-setting body under MHRD that fulfils the basic objectives of setting norms, standards, and guidelines for student assessment.

- The National Testing Agency (NTA) will work to offer a high-quality common aptitude test, as well as specialized common subject exams.

Definition of CCE

CCE refers to a system of school-based evaluation of students that covers all aspects of a students' development. It is a developmental process of a child which emphasizes on two fold objectives. These objectives are continuity in evaluation on one hand and assessment of broad based learning and behavioral outcomes on the other.

The term 'continuous' is meant to emphasis that evaluation of identified aspects of students 'growth and development' is a continuous process rather than an event, built into the total teaching-learning

process and spread over the entire span of academic session. It means regularity of assessment, diagnosis of learning gaps, use of corrective measures and feedback of evidence to teachers and students for their self-evaluation. The second term 'comprehensive' means that the scheme attempts to cover both the scholastic and the co-scholastic aspects of students' growth and development.

Objectives of CCE

- To help develop cognitive, psychomotor and affective skills.

- To lay emphasis on thought process and de-emphasise memorization.

- To make evaluation an integral part of teaching-learning process.

- To use evaluation for improvement of students' achievement and teaching – learning strategies on the basis of regular diagnosis followed by remedial instruction.

- To use evaluation as a quality control device to maintain desired standard of performance.

- To determine social utility, desirability or effectiveness of a programme and take appropriate decisions about the learner, the process of learning and the learning environment.

- To make the process of teaching and learning a learner-centered activity.

Evaluation of Scholastic Areas

For institutions following the CCE grading system, typically an academic year is divided into two terms. The CCE process is made up of formative and summative assessment components. Each term will have two FAs and one SAs. The weightage allotted to each term and assessment is as follows.

Formative Assessments (FA) = FA1+FA2+ FA3+FA4 = **40%**

Summative Assessments (SA) = SA1+SA2 = **60%**

Scholastic

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

Assessment grades are generally given on a 9 point grading scale

Evaluation of Co-Scholastic Areas

Co-Scholastic areas are assessed using multiple techniques on the basis of specific criteria. Assessment of co-scholastic areas are done at the end of the year, and grades are generally given on a 5 point grading scale.

Grade	Indicators	Grade Point
A+	Most indicators	5
A	Many indicators	4
B+	Some indicators	3
B	Few indicators	2

UNIT – III
DOMAINS OF ASSESSMENT
Learning outcomes

Learning outcomes state what students are expected to know or be able to do upon completion of a course or program.

Learning outcomes are descriptions of the specific knowledge, skills, or expertise that the learner will get from a learning activity, such as a training session, seminar, course, or program.It also plays a key role in assessment and evaluation, making clear what knowledge learners should have upon completion of the learning activity.A well-written learning outcome will focus on how the learner will be able to apply their new knowledge in a real-world context, rather than on a learner being able to recite information.

Criteria to write learning outcomes

- Learning outcomes always use an action verb

- Learning outcomes must be written clearly, and should be easy to understand.

- Learning outcomes should clearly indicate what learners should learn from within the discipline they are studying.

- Learning outcomes must show what the expected level of learning or understanding should be, and it should be reasonable to the level of the learners.

- Learning outcomes help with assessment, and thus should clearly indicate what success looks like for the learner.

- There should not be too few or too many learning outcomes. Four to six is the ideal number.

Effective learning outcomes statements should:

- identify important learning requirements (the 'content' of learning – the range and type of knowledge, skills and values required)

- use clear language, understandable by students and other potential clients

- link to the generic and/or course graduate attributes

- be achievable and assessable

- relate to explicit statements of achievement (e.g. level of understanding required).

Blooms Taxonomy of Educational Objectives

The word taxonomy means systematic classification. In 1956, Prof. Benjamin S Bloom with his Collaborators University of Chicago published a framework for categorizing educational goals: Taxonomy of Educational Objectives. "The Taxonomy of Educational Objectives is a framework for classifying statements of what we expect or intend students to learn as a result of instruction. The framework was conceived as a means of facilitating the exchange of test items among faculty at various universities in order to create banks of items, each measuring the same educational objective. They described the hierarchical development of the three domains of the learner though instruction.

It is hierarchical, meaning that learning at the higher levels is dependent on having attained prerequisite knowledge and skills at lower levels.

Classification of Blooms taxonomy

1. Cognitive domain- Knowledge field

2. Affective domain- feeling field

3. Psychomotor domain-doing field

Cognitive domain

It is developed by Bloom (1956). The cognitive domain involves knowledge and the development of intellectual skills. This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. There are six major categories of cognitive processes, which are listed in order below, starting from the simplest to the most complex. The categories can be thought of as degrees of difficulties. That is, the first ones must normally be mastered before the next one can take place.

1. Knowledge

2. Comprehension

3. Application

4. Analysis

5. Synthesis

6. Evaluation.

While each category contained subcategories, all lying along a continuum from simple to complex and concrete to abstract, the taxonomy is popularly remembered according to the six main categories.

Knowledge

Acquisition of knowledge is the lowest level in the cognitive domain. It includes the ability of students to recall and remember the information learned in the classrooms. Recall and recognition are the specification of this instructional objective.

Comprehension

It is the second level of cognitive domain. It is the meaningful recall and recognition of the learned content. Here the learner could understand and explain what he learned in the classroom as his own language. Identifying relations, classification of objects, explanations, comparisons, translation etc., are the specification of this level.

Application

In third level the learners are able to apply or use the knowledge which is acquired and comprehended during the first two levels. It is the ability to apply the acquired knowledge through instruction in real life situations. Establishing new relationship, formulating hypothesis, predictions are the some specification of this level.

Analysis

Analysis is the meaningful breakdown of the materials into its various components and to identify the interrelationship between the elements and find out how they are organized and related. Specification of this level includes the analysis of elements, analysis of relationship, analysis of organizational principles.

Synthesis

Synthesis is the mental ability of the learner to integrate the acquired, comprehended, applied and analyzed knowledge in to a comprehensive whole. It involves the ability to give a new shape or structure to statements or procedures. It involves the "putting together of elements and parts so as to form a whole."

Evaluation

This is the highest level of cognitive domain. Students could evaluate an object, person, a theory or a principle if only he is par with all other lower hierarchy in the cognitive domain. It is the ability to judge a value of a material, aspects, methods, principles , theory, philosophy and so forth for a given purposes. At this level s/he could perform personal viewpoint about the information s/he synthesized.

Possible verbs and question stems associated with different levels of the cognitive taxonomy:

Knowledge: Who, when, where, how much or many, list, define, label, quote

Comprehension: State in ones words, describe, elaborate, give an example, illustrate, associate, contrast (how quantities differ), differentiate, distinguish, state main idea, identify key person, restate, paraphrase, translate

Application: Apply, Calculate, Solve, Compute, Sketch, Operate, demonstrate, transcribe, Code

Analysis: Analyze, classify, compare (how quantities are similar or different), separate, divide into parts, dissect, take apart, categorize

Synthesis: Create, design, invent, compose, generalize, rewrite, modify, substitute, combine integrate, rearrange, formulate, plan, develop proposal, devise, hypothesize, develop new recipe, devise new or unusual way, suggest alternative method, discover

Evaluation: judge, rank, recommend, conclude, convince, grade, assess, select, defend position, judge effectiveness, justify, estimate, value, rate, resolve, settle, decide, appraise, support viewpoint, choose

Affective Domain

Affective domain is related with the development of heart of the child. It involves the areas of emotions, feelings, interest, attitude, appreciation and values. It includes the ways in which people deal with external and internal phenomenon emotionally, such as values, enthusiasms, and motivations. The teacher should be given emphasis to correlate the development of cognitive domain with affective domain. Teacher should ensure the development of affective domain in his instructional objectives of the classroom instruction. Krathwohl (1964) introduced the following hierarchy for affective domain. The five major categories are listed from the simplest behavior to the most complex.

1. Receiving

2. Responding

3. Valuing

4. Organization

5. Characterization

Receiving

It is the basic level. Learner is willing to receive the information whole heartedly by exhibiting awareness on the stimuli and become conscious on particular person, principle, philosophy, incidents, activity etc.

Responding

Effective reception prepares the learner to respond seriously. As result of receiving some good message from the first hierarchy, the learner tries to respond to the situation positively.

Valuing

By responding in good ways, the students set guidelines for their behavior. Accepting values, preference for values, commitment to values are the important behavioural changes in this level.

Organization

Student builds a system of value at this level. Value conflict and value crisis are resolved. Through organizing different values students are able to develop their own code of conduct and standard of public life in the society.

Characterization

This is the highest level of internalization process. Values are imbibed and forms part of the life style of the individual.

Psychomotor domain

Psychomotor domain deals with the action or performance level. This domain includes muscular action and neuromuscular coordination. Educational objectives of this domain aim to developing proficiency in performing certain acts. It concerns things students might physically do. Simpson (1972), Dave (1970) and Anita Harrow (1972) classified psychomotor domain.

The one summarized here is based on work by Dave.

1. Imitation

2. Manipulation

3. Precision

4. Articulation

5. Naturalization

Imitation

It is simply an imitation act of a student who energized through cognitive as well as affective domain development. It means that the student who learned how to write (cognitive domain), willing to write (affective domain) may imitate to write to get the ability to write (psychomotor domain).

Manipulation

This level student tries to do the imitated activity in various ways through repetition. Here students try many ways and styles to perform the activity and select appropriate one which is suitable and convenient to him/her.

Precision

In this level student attain speed, accuracy, proportion, exactness, neatness in a performing the act which is acquired through above two levels.

Articulation

Here the student able to handle many actions in union. This includes coordination, sequence and harmony among acts.

Naturalization

This is the highest level in psychomotor domain. Here student attain the proficiency in performing the particular task. The action becomes automatic with least physic as well as mental energy.

Revised Blooms Taxonomy

In 2001 Loren Anderson and Krathwohl revised the taxonomy with the help of many scholars and practitioners in the field. Revision of Bloom's Taxonomy published with the title "A Taxonomy for Teaching, Learning, and Assessment".

In the new taxonomy, two dimensions are presented:

- Knowledge dimension
- Cognitive dimension

Knowledge dimension

There are four levels on the knowledge dimension:

- Factual Knowledge
- Conceptual Knowledge
- Procedural Knowledge
- Metacognitive Knowledge

Factual Knowledge

- Knowledge of terminology
- Knowledge of specific details and elements

Conceptual Knowledge

- Knowledge of classifications and categories
- Knowledge of principles and generalizations
- Knowledge of theories, models, and structures

Procedural Knowledge

- Knowledge of subject-specific skills and algorithms
- Knowledge of subject-specific techniques and methods
- Knowledge of criteria for determining when to use appropriate procedures

Metacognitive Knowledge

- Strategic Knowledge
- Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge
- Self-knowledge

Structure of the Cognitive Process Dimension of the Revised Taxonomy

Remembering

- Recognizing
- Recalling

Understanding

- Interpreting
- Exemplifying
- Classifying
- Summarizing
- Inferring
- Comparing
- Explaining

Applying

- Executing
- Implementing

Analysing

- Differentiating
- Organizing
- Attributing

Evaluating

- Checking
- Critiquing

Creating

- Generating
- Planning

- Producing

<u>Difference between Original Blooms taxonomy and Revised Blooms taxonomy</u>

The names of six major categories were changed from noun to verb forms. As the taxonomy reflects different forms of thinking and thinking is an active process verbs were used rather than nouns.

The subcategories of the six major categories were also replaced by verbs and some subcategories were reorganised.

The knowledge category was renamed. Knowledge is an outcome or product of thinking not a form of thinking. Consequently, the word knowledge was inappropriate to describe a category of thinking and was replaced with the word remembering instead.

Comprehension and synthesis were retitled to understanding and creating respectively, in order to better reflect the nature of the thinking defined in each category.

Anderson also changed the order of synthesis and placed it at the top of the triangle under the name of Create.

<u>Original Blooms taxonomy vs. Revised Blooms taxonomy</u>
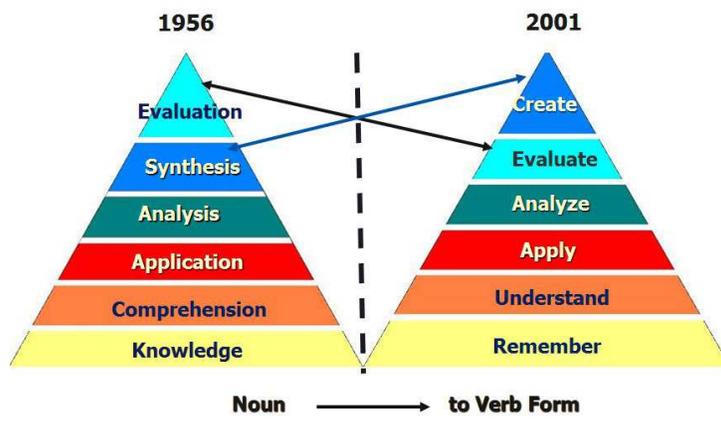
<u>Scholastic Assessment</u>

The desirable behaviour related to the learner's knowledge, understanding, application, evaluation, analysis, and creativity in subjects and the ability to apply it in an unfamiliar situation are some of the objectives in scholastic domain. In order to improve the teaching learning process, Assessment should be both Formative and Summative.

Formative Assessment

Formative Assessment is a tool used by the teacher to continuously monitor student progress in a non-threatening, supportive environment. It involves regular descriptive feedback, a chance for the students to reflect on their performance, take advice and improve upon it. If used effectively it can improve student performance tremendously while raising the self-esteem of the child and reducing the work load of the teacher.

Summative Assessment

Summative Assessment is carried out at the end of a course of learning. It measures or 'sumsup' how much a student has learned from the course. It is usually a graded test, i.e., it is marked according to a scale or set of grades. The paper pencil tests are basically a one-time mode of assessment and to exclusively rely on them to decide about the development of a child is not only unfair but also unscientific. Over emphasis on examination marks focusing on only scholastic aspects makes children assume that assessment is different from learning, resulting in the 'learn and forget' syndrome. Besides encouraging unhealthy competition, the overemphasis on Summative Assessment system also produces enormous stress and anxiety among the learners.

Part I (A): Evaluation of Scholastic Areas

For institutions following the CCE grading system, typically an academic year is divided into two terms. The CCE process is made up of formative and summative assessment components. Each term will have two FAs and one SAs. The weightage allotted to each term and assessment is as follows.

Total: Formative Assessments (FA) = FA1+FA2+ FA3+FA4 = **40%**

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51-60	C1	6
41-50	C2	5
33-40	D	4
21-32	E1	-
20& below	E2	-

Part I(B): Evaluation of Scholastic areas

The Assessment of Performance in the areas like Work Experience, Art Education and Health & Physical Education will to be done on 5-point scale given at the back of the card.

SCHOLASTIC	Grade	A+	A	B+	B+	C

PART2: Co- Scholastic Areas

Part (2A) : Life Skills

These are to be filled in after a period of observation over one year by the Class Teacher in consultation with the subject teachers. Students will be assessed on all the groups of Life Skills. The guidelines for filling this are given in detail later in the document.

PART2(B): Attitude and Values

Attitude towards Teachers, School Mates, School Programmes and Environment needs to be assessed on a three point scale after observation over one year. The various tools and techniques to be used as well as the Indicators of Assessment need to be taken into consideration by the teachers. These will be filled in by the Class Teacher in consultation with all subject teachers.

PART3 : Co- Scholastic Activities

PART3(A) : Co- Curricular Areas

Co-Curricular activities consist of Literary and Creative Skills, Scientific Skills, Aesthetic Skills and Performing Art and Clubs which include Eco-clubs, Health and Wellness Clubs, etc. A student will be expected to choose two activities from these four groups and will be assessed on their level of participation and achievement on a three point grading scale by the concerned teachers.

PART3(B): Health and Physical Education

Students will be assessed on any two activities that are chosen from within the eight different activities grouped under Health and Physical Education.

1. Sports/ Indigenous sports (Kho-Kho etc.)

2. NCC / NSS

3. Scouting and Guiding

4. Swimming

5. Gymnastics

6. Yoga

7. First Aid

8. Gardening/Shramdan

The objective is to benefit from Physical fitness activities to maximize health benefits. These will also be assessed on a three point grading scale. They will be assessed by teachers involved in various activities in school. These have to be filled in after a period of observation over one year.

Evaluation of Co-Scholastic Areas

Co-Scholastic areas are assessed using multiple techniques on the basis of specific criteria. Assessment of co-scholastic areas are done at the end of the year, and grades are generally given on a 5 point grading scale.

Grade	Indicators	Grade Point
A+	Most indicators	5
A	Many indicators	4
B+	Some indicators	3
B	Few indicators	2
C	Very few indicators	1

Non-scholastic achievement

Only a healthy child can learn effectively and good health leads to better learning. Many activities are necessary for development of the affective and psychomotor domain. The activities like games and sport, art and music, craft work etc. are termed as co-scholastic activities. The term co-scholastic activities is used for both cognitive and non-cognitive development that can take place by exposing the child to the scholastic and non-scholastic subjects.

Purpose of evaluating non-scholastic abilities

Non-scholastic abilities are not just 'nice to have' or 'desirable to have', but 'must have' qualities. And since they are 'must have'- every effort must go into learning them. Evaluation of these qualities is essential for two reasons.

One, anything which is not evaluated is never learnt properly. You might pick up things by observation, but if you know something is going to be assessed, you learn it thoroughly, whether it is theory, practical or attitudinal.

Two, the evaluation system itself is a motivating factor to imbibe these skills into one's personality. Not all evaluation is summative. Formative evaluation also helps us correct the intervention process. Evaluation will also give the student an opportunity to know where he needs to improve. It is aimed at remedying the lacunae which exist.

Then there is another thing also, called Hawthorne effect. The fact that someone is watching you, in itself changes the performance. Unless we give weightage to these abilities- howsoever small it may be- it may be difficult to induce the students to learn them.

Problems in Assessment of Non-scholastic abilities

The main reason for step-motherly treatment to non-scholastic abilities appears to be lack of indicators to quantify and measure these abilities. We need to find relevant tools which suit us. The actual evaluation may not be so simple since it has many variables, the parameters are subjective in nature and it largely involves the affective domain which is the most difficult to evaluate. Standardized tools are difficult to get. But you can attempt to develop your own. Subjectivity is inevitable and it should be respected.

Teachers can reduce subjectivity by multiple observations over a period of time, multiple occasions, 360 degree assessment etc. Psychological tests are more valid and useful. Qualitative tools such as document analysis, observation, in-depth interview, response to case scenarios and simulations (computerized) and 360 degree assessment etc. can be utilized, but they are labor intensive, time consuming and impracticable in our situation where numbers really matter. We are caught in the trap of providing transparency and capturing non-scholastic abilities (attitudes, behavior etc. etc.) which are very important for the profession.

Assessment of Non-Scholastic Aspects

This would include assessment of the following aspects which may be introduced in second phase.

- Physical health, covering basic understanding about nutrition and health, physical fitness, development of positive attitudes etc.

- Habits like health habits, study habits and work habits.

- Interests in artistic, scientific, musical, literary and social service activities.

- Attitudes towards students, teachers, class-mates, programmes, school property etc.

- Character-building values like cleanliness, truthfulness, industriousness, cooperation, equality etc.

- Participation in games, sports, gymnasium, literacy, scientific, cultural, social and community service activities.

UNIT – IV   FORMATIVE AND SUMMATIVE ASSESSMENT

Formative Assessment

Formative assessment is an active and intentional learning process that partners the teacher and the students to continuously and systematically gather evidence of learning with the express goal of improving student achievement. Intentional learning refers to cognitive processes that have learning as a goal rather than an incidental outcome. Teachers and their students actively and intentionally engage in the formative assessment process when they work together to do the following:

- Focus on learning goals.

- Take stock of where current work is in relation to the goal.

- Take action to move closer to the goal.

The primary purpose of formative assessment is to improve learning, not merely to grade or audit it. It is assessment for learning rather than assessment of learning. Formative assessment is both an "instructional tool" that teachers and their students "use while learning is occurring" and "an accountability tool to determine if learning has occurred". In other words, to be "formative," assessments must inform the decisions that teachers and their students make minute by minute in the classroom.

These central questions guide everything the teacher does, everything the student does, and everything teachers and their students do together. The questions are deceptively simple, yet to address them students and teachers must become skilled assessors who can gather evidence about where student understanding is in relation to a shared learning target. Only then can the teacher-student learning team use the evidence to make informed decisions about what to do next and choose strategies that have the best chance to close the gap and raise student achievement.

- Formative assessment is not a test item, a test, or a series of tests.

- Formative assessment is an intentional learning process that teachers engage in *with* their students to gather information *during* the learning process to improve achievement.

- Formative assessment is a learning partnership that involves teachers and their students taking stock of where they are in relation to their learning goals.

Elements of Formative assessment

- Requires students to take responsibility for their own learning.
- Communicates clear, specific learning goals.
- Identifies the student's current knowledge/skills and the necessary steps for reaching the desired goals.
- Requires development of plans for attaining the desired goals.
- Encourages students to self-monitor progress toward the learning goals.
- Provides examples of learning goals including, when relevant, the specific grading criteria or rubrics that will be used toevaluate the student's work.
- Provides frequent assessment, including peer and student self-assessment and assessment embedded within learning activities.
- Includes feedback that is non-evaluative, specific, timely, and related to the learning goals, and that provides opportunities for the student to revise and improve work products and deepen understandings.
- Promotes metacognition and reflection by students on their work.

Barriers to wider practice of formative assessment

The major barriers to wider practice of formative assessment include:

- The tension between classroom-based formative assessments of student learning, and high visibility summative tests – that is, large-scale national or regional assessments of student performance that are intended to hold schools accountable for meeting standards, and that

may hold particular consequences for low or underperforming schools. Too often, highly visible summative tests used to hold schools accountable for student achievement drive what happens in classrooms.

- A lack of connection between systemic, school and classroom approaches to assessment and evaluation. Too often, information gathered through national or regional monitoring systems, or even in school-based evaluations, is seen as irrelevant or unhelpful to the business of teaching. Too often, information gathered in classrooms is seen as irrelevant to the business of policy making.

- Fears that formative assessment is too resource-intensive and time consuming to be practical.

Role of students in a formative assessment

Assessment experts commonly stress that learners must be active participants in the process, using information from the assessment experience to determine next steps on their learning path. Student behaviors include: engaging with learning goals, developing success criteria, providing feedback to peers, receiving feedback from teachers and peers, and more.

- Students engage with learning goals so they understand the intended learning and are prepared to interact with content. Refer to the learning goals at various times throughout the lesson as they check their progress.

- Students develop or explore success criteria so they internalize what is expected. Refer to success criteria throughout the lesson as they provide feedback to peers and as they self-assess.

- Students engage fully in classroom questioning routines by sharing and building on peer ideas. Understand that questioning is not about "getting it right," but about sharing current understanding and exploring ideas to move learning forward.

- Students participate fully in individual or small group learning tasks. Articulate how learning tasks will support them in meeting goals. Are willing to share both what they know and what they don't know related to tasks.

- Students are comfortable receiving feedback. Work with teachers to use evidence of their understanding in order to move their own learning forward.

- Students participate in discussions that have give-and-take with teacher and peers. Build on student and teacher responses by sharing clarifying comments, providing feedback, or asking probing questions. Direct questions to one another and respond accordingly.

- Students apply teacher feedback to take next steps in their own learning. Use the feedback they received to revise existing work or address new aspects of work. Students review and provide feedback to the work of peers (aligned to criteria). Receive and apply structured feedback.

- Students demonstrate a clear focus on learning and collaboration. Articulate classroom norms and how they support learning. Demonstrate respect and appreciation for multiple viewpoints. See themselves as learning resources for one another.

- Students routinely self-assess and clarify progress toward learning goals. Independently select learning strategies that will help them move forward. Monitor and adjust learning tactics.

Role of Teacher in a formative assessment

Teachers who practice formative assessment are also expected to support students to acquire the skills needed to enhance learning designed a professional development program to change teachers' conceptualization and practice of assessment and feedback. One way to practice these skills is to invite students to participate and engage in the phases of formative assessment. For example, the students can contribute with questions, ideas and thoughts and listen to peers and discuss peers' ideas. The teacher's role is to help and create situations where the students can practice as participants so they can acquire the habits of mind that will enable them to share responsibility for learning and assessment . One way to support students to be willing to reveal thoughts in front of the teacher and peers is for the teacher not to directly talk about the answers as right or wrong, but to acknowledge student contribution in other ways. Ruiz-Primo (2011) suggests several ways to acknowledge student contribution in a neutral way, to repeat, rephrased, clarify or summarize student utterances; to relate a student utterance to another students utterance; displaying students answers; promoting and responding reflectively to students questions.

Observation

Assessment is the process of observing, recording, and otherwise documenting the work children do and how they do it, as a basis for a variety of educational decisions that affect the child, including planning for groups and individual children and communicating with parents. Assessment is seen as involving a variety of school-based (teacher-enacted) techniques for profiling student demonstrations of learning outcomes.

Teacher observation, that is, observation of a student by a teacher, is one of those techniques. It can be used in conjunction with other techniques. Teacher observation occurs continually as a natural part of the learning and teaching process and can be used to gather a broad range of information about students' demonstrations of learning outcomes'. It requires teachers to observe and analyze regularly what the children are doing in light of the content goals and the learning processes. Observing to assess children is a way to gather information about children capability. Children strengths, weaknesses, personality traits, interests and needs are determined through observation.

One of the important benefits of doing observations is that teachers are viewing many components at the same time. Unlike standardized tests, which focus only on cognition, observations allow the teacher to see the whole child. The emotional, physical, social, and cultural dimensions of the child are equally important, especially with the younger child.

Types of observation

Close observation: observers record everything that they see or hear in detail.

Participant observation: observers become part of the setting or activity where the observation takes place.

Targeted observation: observers choose a particular child or a particular activity or a particular time of day on which to focus observation.

In observation-based assessment practitioners observe children and then, based on what they have observed, make an assessment of the child'slearning and development.

Type of Teacher observation

Teacher observation can be characterized as two types:

- Incidental observation

- Planned observation

Incidental observation

Incidental observation occurs during the ongoing (deliberate) activities of teaching and learning and the interactions between teacher and students. In other words, an unplanned opportunity emerges, in the context of classroom activities, where the teacher observes some aspect of individual student learning. Whether incidental observation can be used as a basis for formal assessment and reporting may depend on the records that are kept.

Planned observation

Planned observation involves deliberate planning of an opportunity for the teacher to observe specific learning outcomes. This planned opportunity may occur in the context of regular classroom activities or may occur through the setting of an assessment task (such as a practical or performance activity)

Observation as an assessment tool

Observing children often comes very easily. Teachers watch and remember what children are doing and how they accomplish the task. But observing without recording is only half of the picture. Teachers must find ways to keep all the information that they traditionally store in their heads. Insights are gained about who is being observed on a consistent basis. Stand-outs at either end of the spectrum are always remembered. Record keeping often reveals that some children are being observed more than the shy child or the invisible child or the child that is just minding to the business of playing and getting along. Careful records reveal information about the observer, such as preferences for certain centers of the room or certain times of the day. These insights offer the teacher an opportunity to broaden the perspective of the observations and record keeping.

Observing to assess children is a way to gather information about children capability. Children strengths, weaknesses, personality traits, interests and needs are determined through observation. However, when there is no record or document related with the observation based on children"s progress, bias and prejudice can occur and have an effect on decisions about children. Such observation is not recommended as the only assessment procedure, and informal observation

becomes vulnerable when it joins with planned/documented observation. The aims of this type of observation are listed as to truly get to know each child and to be ready to figure out the best ways to meet the needs of him or her.

Observation allows practitioners to watch and make sense of children's learning in a naturalistic and fluid way. When being observed children are able to demonstrate how they make sense and meaning in their world through exploration and interaction in a situation that is familiar, developmentally appropriate and predominantly child-initiated. This enables the assessment of learning to be sensitively constructed around individual children. At best, this model of assessment is child-centred and focused on what happens next to support the child's learning and development.

Questioning as an assessment strategy

Questioning is something teachers do naturally as part of their daily routine, but developing the skills associated with questioning techniques presents many challenges for teachers and is something that is developed over time. Teachers need to review what is to be learnt in any one teaching and learning session and plan for the inclusion of questioning accordingly. When to pose open and closed questions, how to develop a question distribution strategy and when to use questions to check learners' knowledge, comprehension and application are all issues that teachers should consider. Good questions lead the learner on a journey in which there is a balance between content (who, what, when) and process (how, why). Good questions are purposeful and promote learning. Teachers should anticipate where mistakes may arise and have probing questions or examples ready to shape learning . How teachers respond to erroneous answers is critical in maintaining trust and developing curiosity. Mistakes should be experienced genuinely as learning opportunities.

Effective questioning

Effective questioning is a key aspect of the teaching and learning process, as the kinds of questions we ask determine the level of thinking we develop. Lessons that incorporate questions are more effective in raising attainment than lessons which do not. Good questioning requires time for pupils to think and respond, and the more learners are actively engaged in learning, the less scope there is to switch off.

Purposes of questioning

Teachers ask questions for a number of reasons, the most common of which are:

- To interest, engage and challenge students

- To check on prior knowledge and understanding

- To stimulate recall, mobilizing existing knowledge and experience in order to create new understanding and meaning

- To focus students' thinking on key concepts and issues

- To help students to extend their thinking from the concrete and factual to the analytical and evaluative

- To lead students through a planned sequence which progressively establishes key understandings

- To promote reasoning, problem solving, evaluation and the formulation of hypotheses

- To involve learners in the session through thinking

- To provide the teacher with an insight into the level of learning.

Kinds of question

The kind of question asked will depend on the reason for asking it. Questions are often referred to as 'open' or 'closed'.

'Closed' questions

Closed questions are useful in checking pupils' memory and recall of facts. Typically there is only one 'right' answer.

Who discovered penicillin?

'Open' questions

Open questions require learners to think and formulate a response. It allow students to give a variety of acceptable responses. If a teacher asks learners to explain why vaccines work, then the learners have to provide this explanation in their own words.

Example:

'What do you remember about?

What do you think will happen next?

7 Steps to Effective Questioning

- Create a classroom climate in which questioning is encouraged. This means encouraging student questions and creating a space where it's okay to offer divergent responses. Then all answers, right or wrong, can be used to develop understanding.

- Plan your questions. If you plan your questions before class it will help make the questions more focused. Stop asking rhetorical questions or questions that you answer yourself.

- Ask fewer questions. Ask questions that are worth asking. Ask yourself would the students be any worse off if I didn't ask this question?

- Raise the quality of your questions. Consider the purpose of your question. If you want to check their knowledge, then ask a closed question (i.e. a question with a right answer). If you want to probe their understanding or prompt thinking, then ask an open question.

- Avoid shotgun questioning. This quick-fire approach to questioning can be useful in the context of a table quiz but when used by the teacher at the top of the class it can put students into a panic zone which shuts down their thinking.

- Allow 'wait times'. Allow sufficient time for students to think and formulate an answer before taking responses. This means waiting several seconds.

- Use the 'no hands' rule. When hands are waving it stops thinking. If you use the 'no hands' rule everyone is enabled to think about the answer.

Benefits

- Directing students' thinking in a particular way

- Encouraging learners to think and actively construct their own schemas

- Structuring or guiding the learning of a task

- Allowing teachers to assess the learning of their students both in terms of what they bring to the lesson and what they are taking from the lesson

- Identifying gaps and/or misconceptions in students' learning

- Providing immediate insight into where the learning of pupils has developed

- Helps students clarify their understanding of a topic

- Motivating students' interest and engagement in a topic

- Providing opportunities for student learning through discussion

<u>Reflection on learning as assessment strategy</u>

Reflection is about students becoming aware of their own thinking processes, and being able to make those transparent to others. It enables assessment of the "why" and "how" of the learning, and what needs to be done as a result.

Reflection readily follows on from self or peer assessment.

When students and teachers routinely reflect they will be able to easily describe:

- what is intended to be learnt

- where they have got to the learning process

- where they will go next the learning culture in the classroom.

It is the teacher's responsibility to support students to improve their skills in reflection. Teachers should model and teach reflective processes to the students, plan lessons to incorporate time for student reflection, and use those same skills to reflect on and improve their own practice.

"Reflective learners assimilate new learning, relate it to what they already know, adapt it for their own purposes, and translate thought into action. Over time, they develop their creativity, their ability to think critically about information and ideas, and their metacognitive ability (that is, their ability to think about their own thinking). "

Learners are aware of and control their learning by actively participating in reflective thinking assessing what they know, what they need to know, and how they bridge that gap during learning situations.

Through self-reflection, students can:

- Evaluate their work against a set of criteria.

- Track their learning progress.

- Identify areas of strengths and weaknesses in their skill set and knowledge.

- Set realistic learning goals.

- Reflect on their learning style and processes.

- Act on feedback given from their teacher or peers to improve performance.

Assignment

An assignment is a piece of (academic) work or task. It provides opportunity for students to learn, practice and demonstrate they have achieved the learning goals. It provides the evidence for the teacher that the students have achieved the goals. The output can be judged using sensory perception (observing, reading, etc.). The assignment can focus on a product as output (e.g. research report, design, prototype, etc.) and/or a process (e.g. research process, group process) and/or the performance of individual skills or competences (e.g. professional skills, communications skills).

Design of an Assignment

- The main objective of an assignment is to evaluate whether the subject matter is understood by the students.

- Depending on a content and curriculum of the subject for the semesters, teachers often give assignments on key objectives and teaching goals of the curriculum. Assignments help assess the writing skills, cognitive understanding level, and presentation skills of the students.

- Group assignments are great assessment tools as they analyze whether the students can work together on a project and whether they understand what is being taught in class.

- An assignment is designed in a way that makes it very clear to students as to what is expected from them. It has various subsections in them.

- Marks are given based on structured criteria and each section is assigned marks. This means that there is a standard evaluation process and every student is assessed fairly.

- Usually, there is a standard rubric for marking an assignment which is used to create an assignment. Sometimes customized rubrics are used for assignments.

Uses of assignments

- Demonstration or development of higher level thinking skills

- Demonstration or development of writing skills

- Demonstration or development of oral presentations skills

- Observation or training of collaborative and interpersonal skills

Rubric

It is a guide listing specific criteria for grading or scoring academic papers, projects, or tests. The main purpose of rubrics is to assess performances.

- It reduce grading time
- It increase objectivity and reduce subjectivity;
- It convey timely feedback to students and
- It improve students' ability to include required elements of an assignment
- It can be used to assess a range of activities in any subject area

Worksheet

A worksheet, in the word's original meaning, is a sheet of paper on which one performs work. They come in many forms. It is most commonly associated with children's school work assignments.

In education, a worksheet may have questions for students and places to record answers. It can be a printed page that a child completes with a writing instrument. No other materials are needed. It is "a sheet of paper on which work schedules, working time, special instructions, etc. are recorded.

As an assessment tool, worksheets can be used by teachers to understand students' previous knowledge, outcome of learning, and the process of learning; at the same time, they can be used to enable students to monitor the progress of their own learning.

Practical work

Practical work is by no means unique to the sciences. It is found in other subject areas within the school curriculum. For instance there is a practical element in fine arts and the manual arts.

The term 'practical work' includes demonstrations done by the teacher as well as experiments performed by their students either on their own or as part of a group. practical work, including fieldwork, is a vital part of science education. It helps students to develop their understanding of science, appreciate that science is based on evidence and acquire hands-on skills that are essential if students are to progress in science.

Self-assessment

Self-assessment is an assessment tool used by students to evaluate the quality of their work, measure their performance with the stated goals and learning objectives, identify the strengths and weaknesses in their work and implement revision accordingly. A self-assessment practice encourages students to take ownership of their learning, promotes responsibility, independence, and may also motivate further learning. It is a form of cultural shift which focuses on the quality of

learning, student responsibility and making judgements as a necessary skill to prepare students for problem solving and lifelong learning.

Peer assessment

Peer assessment provides a structured learning process for students to critique and provide feedback to each other on their work. It helps students develop lifelong skills in assessing and providing feedback to others, and also equips them with skills to self-assess and improve their own work.

It involves students taking responsibility for assessing the work of their peers against set assessment criteria. They can therefore be engaged in providing feedback to their peers.

Teacher assessment

Teacher assessment of student needs is a method of determining a student's current level of knowledge and skills in a particular area using measurable terms to direct future learning. Teacher assessment is used to determine the current level of student achievement and, accordingly, to determine appropriate teaching strategies and goals for the student.

Strategies

- Examine the errors and why they were made, and use this information to direct the next steps in teaching error analysis.

- Use various forms of assessment to accurately measure what you intend. A math test of word problems may seem like a difficulty with math, when it may in fact be a reading or receptive language issue.

- Allow students a choice in assessment options to test the same skill.

- Allow for retaking of tests or improving of assignments to demonstrate improved learning.

- Use tracking and documentation of assessment.

- Develop a learner profile from your assessments.

Summative assessment

Summative assessment is one that is implemented at the end of the course of study, for example via comprehensive final exams or papers. Its primary purpose is to produce an evaluation that "sums up" student learning. It is comprehensive in nature and is fundamentally concerned with learning outcomes. While summative assessment is often useful for communicating final evaluations of student achievement, it does so without providing opportunities for students to reflect on their progress, alter their learning, and demonstrate growth or improvement; nor does it allow instructors to modify their teaching strategies before student learning in a course has concluded. It is used to summarise what pupils know or can do at certain times in order to report achievement and progress. Summative assessment aims to evaluate student learning and academic achievement at the end of a term, year or semester by comparing it against a universal standard or school benchmark. Summative assessments often have a high point value, take place under controlled

conditions, and therefore have more visibility. It provides an essential benchmark to check the progress of students, institutions and the educational program of the country as a whole.

Elements of Effective Summative Assessments

Not all summative assessments are created equal. Some types of summative assessments can tell a teacher much more than a standard test. The best practices for writing effective summative assessments include five important evaluative elements:

Authenticity: The assessment reflects a range of real-world skills that are authentic outside of a classroom context.

Reliability: The assessment provides similar results across classroom settings, groups of students, and daily conditions.

Volume: Assessment has not been too regular in the past. Students who have test fatigue will not provide accurate results on any assessment.

Validity: The assessment accurately reflects what students have been taught in the instruction period.

Variety: The assessment prompts students to exhibit skills and demonstrate knowledge in more than one way.

Unit V

TOOLS OF ASSESSMENT

Convergent thinking

Convergent thinking is a term coined by Joy Paul Guilford as the opposite of divergent thinking. It generally means the ability to give the "correct" answer to standard questions that do not require significant creativity, for instance in most tasks in school and on standardized multiple-choice tests for intelligence.

Divergent thinking.

Divergent thinking is a term coined by Joy Paul Guilford

"Divergent thinking is the process of coming up with new ideas and possibilities without judgment, without analysis, without discussion. It is the type of thinking that allows you to free-associate, to 'go big' and to discuss possible new ways to solve difficult challenges that have no single/right/known answer,"

Critical Thinking

Critical thinking is the ability to think clearly and rationally, understanding the logical connection between ideas. It is about being an active learner rather than a passive recipient of information. It might be described as the ability to engage in reflective and independent thinking.

Critical thinkers rigorously question ideas and assumptions rather than accepting them at face value. They will always seek to determine whether the ideas, arguments and findings represent the entire picture and are open to finding that they do not.

Critical thinkers will identify, analyse and solve problems systematically rather than by intuition or instinct.

<u>Problem</u>

"A doubtful or difficult matter requiring a solution"

"Something hard to understand"

<u>Problem solving</u>

Problem solving is all about using logic, as well as imagination, to make sense of a situation and come up with an intelligent solution. In fact, the best problem solvers actively anticipate potential future problems and act to prevent them or to mitigate their effects. Problem-solving skills help you determine the source of a problem and find an effective solution.

Problem-solving abilities are connected to a number of other skills, including:

- analytical skills

- innovative and creative thinking

- a lateral mindset

- adaptability and flexibility

- initiative

- resilience (in order to reassess when your first idea doesn't work)

- Team working (if problem solving is a team effort)

- influencing skills (to get colleagues, clients and bosses to adopt your solutions)..

Basic steps in solving a problem

- Defining the problem

- Generating alternatives

- Evaluating and selecting alternatives

- Selecting alternatives

- Implementing solutions.

<u>Decision-making</u>

Decision-making is the act of choosing between two or more courses of action.

"The process of deciding about something important, especially in a group of people or in an organization"- Oxford Advanced Learner's Dictionary

The importance of decision making lies in the way it helps you in choosing between various options. Before making a decision, there is a need to gather all available information and to weigh its pros and cons. It is crucial to focus on steps that can help in taking the right decisions.

There is a strong correlation between decision-making and problem-solving.

Selected response assessment (objective assessments)

It require student to recognize the correct answer rather than recall.

It require students to select the correct response from several alternatives

Selected response assessment items include options such as

- Multiple choice

- Matching

- True/false questions.

These question types can be very effective and efficient methods for measuring students' knowledge and reasoning. Because many of the standardized tests are based heavily on multiple choice questions, teachers should be skilled at developing effective objective assessment items.

Multiple-choice question

It is a question type where the respondent is asked to choose one or more items from a limited list of choices. It consists of a stem, the correct answer, and distractors. Multiple-choice questions ask students to select the correct response from one or more of the choices from a given list.

The stem is the beginning part of the item that presents the item as a problem to be solved, a question, or an incomplete statement to be completed.

The options are the possible answers you can choose from, with the correct answer called the key and the incorrect answers called distractors.

There has been much debate whether multiple-choice questions are useful. We've listed their biggest advantages and disadvantages.

Eg:

Who among the following coined the term action research? ⟶ Stem

Albert Bandura

Carl Rogers

Kurt Lewin   options
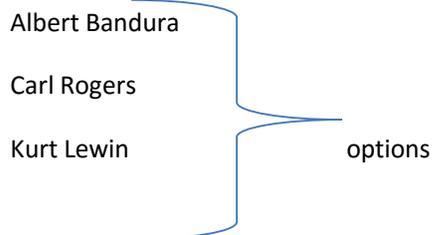
Lev Vygotsky

Key: Correct answer

Distractors: other options

<u>Advantages of multiple-choice questions:</u>

- They have fast processing times
- There's no room for subjectivity
- It takes less time to complete a multiple-choice question compared to an open question
- Respondents don't have to formulate an answer but can focus on the content
- Ability to measure simple and complex learning outcomes
- Scoring is easy and reliable
- Can cover a lot of material very efficiently

<u>Disadvantages of multiple-choice questions:</u>

- It is time-consuming to create.
- It don't produce any qualitative data, solely quantitative
- It limit the respondent in his answers, that's why it's important to provide an "other" option with a textbox.
- Often fails to test higher levels of cognitive thinking.
- Does not provide a measure of writing ability.

Tips for Taking Multiple-choice Exams

- Read the question or statement carefully.

- Try to answer the question in your head before reading the answer choices.

- Read all of the answer choices carefully.

- Eliminate answers you know are incorrect

- If you know more than on answer is correct, consider if "all of the above" is possibly the correct choice.

- If "all of the above" isn't a choice, or isn't the correct choice, then select the BEST answer from those you think are correct.

- Never leave a multiple-choice question blank unless you are penalized for guessing. If you don't know the answer, eliminate the ones you know are not correct and then make an educated guess.

<u>True/False questions</u>

True-false questions are typically used to measure the ability to identify whetherstatements of fact are correct. The questions are usually a declarative statement thatthe student must judge as true or false.

Strengths:

• Can cover a lot of content in a short time (about two questions per minute of testing time)

• The question is useful when there are only two possible alternatives.

• Less demand is placed on reading ability than in multiple-choice questions.

• Can measure complex outcomes when used with interpretive exercises.

• Scoring is easy and reliable.

Limitations:

• Difficult to write questions beyond the knowledge level that are free from ambiguity.

• False statements provide no evidence that the student knows the correct answer.

• Scores are more influenced by guessing than with any other question type.

• Cannot discriminate between students of varying ability as well as other questions.

• Requires that the answer to the question is absolutely true or false.

Tips for writing true/false questions

• Construct statements that are definitely true or definitely false, without additional qualifications.

• Use relatively short statements.

• Eliminate extraneous material.

• Keep true and false statements approximately the same length.

• Include an equal number of true and false questions.

• Test only one idea in each question.

• Have students circle T or F for each question rather than write the letter which can lead to debate.

• Avoid verbal clues, specific determiners (e.g., the, a, an), and complex sentences.

• Avoid absolute terms such as, never or always.

• Do not arrange answers in a pattern (i.e., TTFFTTFF, TFTFTF).

• Avoid taking statements directly from text.

• Always state the question positively.

Matching questions

Matching questions consist of a column of key words presented on the left side of thepage and a column of options placed on the right side of the page. Students are required to match the options associated with a given key word(s).

Strengths

• Simple to construct.

• Short reading and response time, allowing more content to be included in a given set of matching questions.

• Highly reliable exam scores.

• Well-suited to measure associations between facts.

• Reduces the effects of guessing.

Limitations

• Difficult to measure learning objectives requiring more than simple recall of information.

• Difficult to construct due to the problem of selecting a common set of key words and options.

• If options cannot be used more than once, the questions are not mutually exclusive; therefore, getting one answer incorrect automatically means a second question is incorrect.

Tips for writing matching questions

• Provide more possible options than questions.

• Use longer phrases as questions and shorter phrases as options.

• Keep questions and options short and homogeneous.

• Avoid verbal cues and specific determiners (e.g., the, a, an).

• Number each question and use alphabetical letters for the options.

• Specify in the directions the basis for matching and whether or not responsescan be used more than once.

• Make all questions and all options the same type (e.g., a list of events to bematched with a list of dates).

Constructed response assessments

Constructed response assessments the answer is not visible. Student must recall or construct it. Constructed response assessments are conducive to higher level thinking skills. In selected response assessment items, the answer is visible, and the student needs only to recognize it. Although selective response items demand only lower levels of cognition.

- Fill-in-the blank

- Short answer

- Essay type

Fill-in-the blank

It requires the student to insert the correct word, phrase, number, or symbol into an incomplete sentence.

Tips to prepare Fill-in-the blank

- Ask a direct question that has a definitive answer.
- Use only one blank per item.
- Place the blank near the end of the sentence.
- Ensure that each blank calls for a single idea
- Ensure that blank lines are the same length
- Avoid grammatical clues

Short-Answer

Short-answer questions or statements are similar to essay questions, except they can be answered with just a few words or sentences. They test foundational knowledge which is usually factual. It direct students to supply the appropriate words, numbers, or symbols to answer a question or complete a statement.

Tips for Preparing for Short-answer Exams

Create flash cards with key terms, dates, and concepts on the front and definitions, events, and explanations on the back.

Develop summary sheets of the course materials.

Focus on key words, events, vocabulary, and concepts.

Organize your notes and materials around the key words, events, vocabulary, and concepts you have identified.

Tips for Taking Short-answer Exams

Read the question carefully and make sure you answer everything that is requested.

When answering questions, respond directly to the question or directive focusing on keywords and ideas.

Write concise answers presenting key facts in short sentences according to the test instructions.

Essay type questions

Essay type questions are sometimes called long answer questions. They contain case studies or scenarios that require the student to apply, analyze, synthesize, or evaluate related products, processes, information, ideas, or procedures. It require students to demonstrate through writing his/her ability to :

- recall knowledge

- organize this knowledge

- present the knowledge in a logical, integrated answer

- writing ability

- organization of thought and ideas

- synthesis of ideas into something new

- analysis and evaluation

- explain

There are two types of long-answer question:

- Extended response

- Restricted response

Extended response is used when there is no limit on scope, time, or length, and no reference to any resource.

Restricted response is used when you wish to limit the time, length, number of examples, or anything else about the answer.

Tips for Preparing essay type question

- Give clear instructions on how to answer the question
- Use words that the student can understand
- Test only essential abilities
- Clarify the limits on the required answer
- Identify the assigned grade value of the question
- Construct my scoring method before giving the test
- Ensure that students understand how their answers will be scored

Merit

- Are easier to create than other question types
- Can effectively measure higher order cognitive learning

Demerit

- Time consuming to score

- Difficult to measure a large amount of content or course learning objectives

<u>Interview</u>

A formal interview consists of a series of well-chosen questions (and often a set of tasks or problems) which are designed to elicit a student's understanding about a concept, a set of related concepts or their opinions about some objects, events or persons, etc. The interview may be videotaped or audio taped for later analysis. To assess the co-scholastic development among children, interview is a very effective technique. It is a face-to-face situation between teacher and student, which intends to draw out the desired information. The interview involves minimum two persons, i.e. interviewer and the interviewee. For better results in an interview, you have to develop a rapport with students. The friendly environment and mutual faith can enhance the quality of outcomes of interview.

Characteristics of Interview

• Interviews are conducted by the interviewer based on what the interviewee says.

• In the personal interview, the interviewer works directly with the interviewee.

• The interviewer has the opportunity to probe or ask follow-up questions.

• Interviews are generally easier for the interviewee, especially if what is sought, are opinions and/or impressions.

• Interviews are time consuming and are resource intensive

<u>Portfolio</u>

It is the collection of evidences of students' works over a period of time. It could be day-to-day works or selection of learner's best piece of work. Painters and commercial artists often use portfolios to demonstrate their skills and quality work before the selection committees. Portfolios encourage teachers and schools to focus on important student outcomes, provide parents and the community with credible evidence of student achievement. Portfolio provides a cumulative record of growth and development of a skill or competence in an area over a period of time. It also enables a student to demonstrate to others, his/her learning and progress. Care should be taken that only selected works having specific purpose need to be put into the portfolio.

Portfolio can include:

• Photographs: Provides an insight into child's emotional, social and psychological development

• Paintings and other examples of artistic endeavor: Provides evidences of a learner's abilities, thoughts and attitudes

• Audio-Video Recordings: Important processes and events that can be recorded and analyzed later

• Self Assessment Sheets: Provides evidence of learner's self-evaluation

• Peer Assessment Sheets: Excellent for assessing team based activities, socialprojects and peer related behaviour.

• Parent Assessment Sheets: Provides evidences of evaluation carried outby the parents.

Checklist

A *checklist* is the least complex form of scoring that examines the presence or absence of specific elements in the product of a performance. All elements are generally weighted the same and the gradations in quality are typically not recognized. It usually offer a yes/no format in relation to student demonstration of specific criteria. This is similar to a light switch; the light is either on or off. They may be used to record observations of an individual, a group or a whole class.

Rating scale

Rating scale is a technique, through which an assessor categorizes the objects, events or persons on a scale, represented by a series of continuous numerals or letters. This technique is a subjective method. Rating is basically a term applied to an expression of opinion or judgment regarding some situation, object, character or an attribute.

Rating scale refers to a scale with a set of points which describe varying degrees of dimension of an attribute being observed. In a typical numerical scale, a sequence of definite numbers is supplied to the rater or to the observer. The observer assigns, to each stimulus to be rated, an appropriate number corresponding to those definitions or descriptions. In a rating scale, you can use three points, five points, seven points or nine points scale. In a three point scale, you can have rating of 3 for most pleasant; rating of 2 for indifferent and a rating of 1 for most unpleasant. It is always useful to have an odd number of points in a scale like 3, 5 and 7, so that there could be a middle (neutral) one, a favorable one and an unfavorable one. Numerical rating scales are the easiest to construct and to apply. They are also the simplest in terms of handling the results.

Project Based Learning

Project Based Learning (PBL) is a teaching method in which students learn by actively engaging in real-world and personally meaningful projects. Students work on a project over an extended period of time – from a week up to a semester – that engages them in solving a real-world problem or answering a complex question. They demonstrate their knowledge and skills by creating a public product or presentation for a real audience.

As a result, students develop deep content knowledge as well as critical thinking, collaboration, creativity, and communication skills. Project Based Learning unleashes a contagious, creative energy among students and teachers.

Project-based assessments

Project-based assessments are an alternative to tests that allow students to engage with their learning in more concrete ways. Instead of merely studying theory, a hands-on project asks students to apply what they've learned to an in-depth exploration of a topic. It is student-centered and requires reflection on both the process and the content to be meaningful.

Project-based assessments are an opportunity to utilize and measure the higher order thinking skills of students. It will apply multi-faceted skills to be encompassed into a cumulative project. This can be a singular project at the end of a grading period or it can be done at designated intervals throughout the marking period. The intent is to design the project-based assessment to encompass the lesson plans, teacher worksheets and any additional teacher resources which will ultimately provide a physical example of what was has been learned and what can be applied by the student.

The criteria for the project-based assessment can be as specific or as generic as a teacher designates. A field trip that relates to the course work is potentially a project-based assignment but its effectiveness as an assessment opportunity would require a more direct correlation.

Anecdotal Records

Anecdotal records are informal observational notes in the form of a story. A teacher records about what students are learning, their academic performance, learning behaviour, their achievements and social interactions. Though it is an informal note but with its help, you can keep a record of each and every student of your class in a comprehensive manner. While taking the note, you have to ensure that you only record what you observe and hear without any interpretation. For example, while preparing an anecdotal note on reading habit of your students, you can consider many issues like:

• Does a student show positive attitude towards reading books?

• Does a student choose his/her favorite books?

• Does a student read books for pleasure/information?

• Does a student read them silently?

• Does a student reflect on his/her reading?

• Does a student share his/her ideas with others during literature discussions?

Anecdotal records are the **written observations** – word for word, action foraction of exactly what a child is doing and saying. You can use these notes tocreate a complete developmental picture of young children. Anecdotal notes should be used to record the day-to-day development of students, as well as their specific behaviors, especially those that are a cause for concern, speech patterns, language development, social/emotional development, peer interactions, etc.

UNIT – VI
PLANNING, CONSTRUCTION, ADMINISTRATION AND REPORTING OF ASSESSMENT

<u>Nature of assessment</u>

Assessment is embedded in the learning process. It is tightly interconnected with curriculum and instruction. As teachers and students work towards the achievement of curriculum outcomes, assessment plays a constant role in informing instruction, guiding the student's next steps, and checking progress and achievement.

- Classroom assessment involves students and teachers in continuous monitoring of students' learning.

- It gives students a measure of their progress as learners.

- It provides opportunity for close observation of students in the process of learning.

- It helps in collection of frequent feedback on students' learning and how they respond to particular teaching approaches.

- Assessment has profound impact on the self-esteem of pupils, which is critical influence on learning.

- Uses variety of strategies

- Thus 'assessment' includes all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged

<u>Instruction</u>

Instruction means forcing into the mind of a child predetermined dozes of knowledge in a pre-planned way to achieve mental development. It is one-sided development and that too of memory only. Thus, its field is narrow in comparison with education.

In instruction, the place of the teacher is central. The role of the child is secondary. Thus, the role is reversed.

Instruction neglects interests, inclinations and capacities of the child. Ready-made dozes of knowledge are forced into his minds.

In instruction, cramming is encouraged. It is soon forgotten and, thus, cannot be applied to meet the challenges of life successfully.

Instruction prepares the child to pass an examination.

<u>Learning</u>

Learning is the process of acquiring new understanding, knowledge, behaviors, skills, values, attitudes, and preferences. The ability to learn is possessed by humans, animals, and some machines; there is also evidence for some kind of learning in certain plants.

The process of learning is continuous which starts right from the time of birth of an individual and continues till the death. We all are engaged in the learning endeavors in order to develop our adaptive capabilities as per the requirements of the changing environment.

Oral tests

Oral tests are conducted to formally evaluate if a student has the knowledge and understanding of some key concepts taught to him. In an oral test, teacher or group of teachers ask students a set of pre-determined oral test questions and listen to and evaluate their responses to those questions. Teachers take detailed notes of each student's responses, usually using rating sheets that contain the answers to the questions. A structured procedure is used to score students' answersto the oral test questions. Communication in an oral test is highly structured and mostly one-way; students are not given an opportunity to present information unless specifically requested or to ask questions about the content, which is not selected for the test. Oral tests also require previous planning. Questions should be pre-defined and documented by the teacher. The questions should be arranged in order of difficulty.

Written test

Written tests are tests that are administered on paper or on a computer (as an e-Exam). A test taker who takes a written test could respond to specific items by writing or typing within a given space of the test or on a separate form or document.

A written test is one which involves writing rather than doing something practical or giving spoken answers.

Written tests are mostly for evaluating information-based learning outcomes. However, they may also test knowledge, skills, or attitudes. They are part of the overall evaluation plan for students. Test questions may be open-ended, requiring an answer in the form of an essay or a short statement in the student's own words. These reveal the student's learning but also tests their ability to express their thoughts in written English. They are also very time-consuming to mark. Test questions that reduce marking time may be short-answer, true/false, or multiple-choice. The type of question to use depends on what types of information you wish to test.

Open book examination (OBE)

An "open book examination" is one in which examinees are allowed to consult their class notes, textbooks, and other approved material while answering questions. It allow you to take notes, texts or resource materials into an exam situation. They test your ability to find and apply information and knowledge. Do not think that an OBE is an easy alternative to invigilated examinations. The questions you'll be asked will be different to those in our previous closed book examinations.

You can expect to see questions that ask *What? Could? How? Why?* and *Where?*

These will not only assess what you *know* but what you can *do* with that knowledge; our examiners will be looking for you to demonstrate analytical, evaluation and creative skills as well as critical thinking. Whatever format the question, it will relate to the syllabus and learning outcomes of your qualification.

To help you during the open book examination you can use resources such as notes, textbooks, learning materials and online resources. It's important to remember that cutting and pasting from a textbook or online resource will not provide you with a good answer you will need to really understand the topic and apply your understanding to the scenario given in the question paper.

Open-book exams usually come in two forms:

- Traditional sit-down / limited-time exams, with varying degrees of access to resources and references.

- Take home open-book exams you do at home. Question(s) are handed out, answers are attempted without help from others, and the exam is returned within a specified period of time (often the next day).

What kinds of questions will an open-book exam have?

Open-book exams don't test your memory; they test your ability to find and use information for problem solving, and to deliver well-structured and well-presented arguments and solutions.

Open-book exam questions usually require you to apply knowledge, and they may be essay-style questions or involve problem solving or delivering solutions. The style of question depends on the faculty or school setting the exam.

Blueprint

A blueprint for something is a plan or set of proposals that shows how it is expected to work. It is a three dimensional chart giving the placement of the different questions in respect of:

- objectives

- content area

- form of questions

It is detailed plan based on the design for preparing a question paper. Basically, it is used at those areas where we want a detailed plan of action before executing finally. It is a matrix or chart reporting the number and type of test questions.

Need of Blue Print

- To give proper weightage to objectives.

- To provide proper weightage to subunits.

- To impart proper weightage to different types of questions.

- To avoid too much importance to objectives based on memory.

Three Aspects of Blue Print

1. objectives

2. content area

3. form of questions

Objectives : Knowledge, Understanding, Application, Skill.

Knowledge

Questions are objective and based on recognition and recalling. It is related to memory of student.

Understanding

Questions are based on students understanding.

Application

It is related to application of knowledge.

Skill

It is related to how to do something.

Content

- First decide the scope of unit and how much weightage is to be given to each unit.

- Weightage should be given depending on how much time is allotted for that

- particular content.

- Weightage should be reflected in the number of questions included in the test.

Types of Questions

For testing a particular ability and content, most suitable form of question should be

used.

- Objective type

- Short answer

- Long answer

Class: VI
Subject: Mathematics

BLUEPRINT

Time: 80 min
M.M: 40

FORMS OF QUES / TOPIC	KNOWLEDGE LEVEL			UNDERSTANDING LEVEL			APPLICATION LEVEL			SKILLS	TOTAL
	V.S.A	S.A	L.A	V.S.A	S.A	L.A	V.S.A	S.A	L.A		
INTEGERS		3(1)				5(1)		3(1)		2(2)	13(5)
FRACTIONS	1(1)			1(1)	3(1)		1(1)	3(1)	5(1)		14(6)
AREA AND PERIMETER	1(1)				3(1)	5(1)	1(1)	3(1)			13(5)
TOTAL	5(3)			17(5)			16(6)			2(2)	40(16)

VSA: Very Short Answers Questions
SA: Short Answer Questions
LA: Long Answer Questions

Number in bracket shows number of questions.
Number outside the bracket shows marks given to each questions.

Rubrics

A rubric is an explicit set of criteria used for assessing a particular type of work or performance and provides more details than a single grade or mark. Rubrics, therefore, will help you grade more objectively.

Have your students ever asked, "Why did you grade me that way?" or stated, "You never told us that we would be graded on grammar!"

As a grading tool, rubrics can address these and other issues related to assessment: they reduce grading time; they increase objectivity and reduce subjectivity; they convey timely feedback to students and they improve students' ability to include required elements of an assignment. Grading rubrics can be used to assess a range of activities in any subject area. Rubrics are multidimensional sets of scoring guidelines that can be used to provide consistency in evaluating student work. They spell out scoring criteria so that multiple teachers, using the same rubric for a student's essay, for example, would arrive at the same score or grade. Rubrics are used from the initiation to the completion of a student project. They provide a measurement system for specific tasks and are tailored to each project, so as the projects become more complex, so do the rubrics.

Why use rubrics?

According to Heidi Goodrich Andrade:

Rubrics help students and teachers define "quality."

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 to students why 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."

UNIT – VII
ADMINISTRATION AND REPORTING OF ASSESSMENT

Item Analysis

Item Analysis is an important tool to increase test effectiveness. Each items contribution is analyzed and assessed. Item analysis is a process which examines student responses to individual test items (questions) in order to assess the quality of those items and of the test as a whole.

To write effective items, it is necessary to examine whether they are measuring the fact, idea, or concept for which they were intended. This is done by studying the student's responses to each item. When formalized, the procedure is called "item analysis". It is a scientific way of improving the quality of tests and test items in an item bank.

An item analysis provides three kinds of important information about the quality of test items.

- Item difficulty

- Item discrimination

- Effectiveness of alternatives

Item Difficulty

It is the exam question (aka "item") too easy or too hard? When an item is one that every student either gets wrong or correct, it decreases an exam's reliability. If everyone gets a particular answer correct, there's less of a way to tell who really understands the material with deep knowledge.. The item difficulty index ranges from 0 to 100; the higher the value, the easier the question.

Item Discrimination

Item discrimination refers to the ability of an item to differentiate among students on the basis of how well they know the material being tested.

It does the exam question discriminate between students who understand the material and those who do not?

Item Distractors

Do exam questions effectively distract test takers from the correct answer? For example, if a multiple-choice question has four possible answers, are two of the answers obviously incorrect, thereby rendering the question with a 50/50 percent chance of correct response? When distractors are ineffective and obviously incorrect as opposed to being more disguised, then they become.

Standard scores

Scores from tests can be standardised or scaled. Standardised means that they are all converted to the same range or units. It does not change the shape of the distribution of test scores.Standardised scores were developed to overcome the problem of scoring systems where the units were so different, such as in the example of the percentiles shown above. There

are various options for standardising scores (e.g.,, z-scores) and most rely on norm-referenced comparisons with the mean and standard deviation of test results in a group.

Z-score

A z-score describes the position of a raw score in terms of its distance from the mean, when measured in standard deviation units. The z-score is positive if the value lies above the mean, and negative if it lies below the mean.

Grade point average

A grade point average is a number representing the average value of the accumulated final grades earned in courses over time. More commonly called a GPA, a student's grade point average is calculated by adding up all accumulated final grades and dividing that figure by the number of grades awarded. This calculation results in a mathematical mean—or average—of all final grades. The most common form of GPA is based on a 0 to 4.0 scale (A = 4.0, B = 3.0, C = 2.0, D = 1.0, and F = 0), with a 4.0 representing a "perfect" GPA—or a student having earned straight As in every course.

Percentages

A percentage is a number expressed as a fraction of 100. It is also uniquely signified with the use of a percent sign (%). A candidate takes a test made up of 40 questions and answers 34 of them correctly. Her percentage of correct answers, or score, is the number of correct answers divided by the total number of questions, multiplied by 100.

So,

$35 \div 40 = 0.85$

$0.85 \times 100 = 85$

The candidate got 85% of the questions on the test correct.

Percentiles

Percentiles express all the observations of a given occurrence, below a certain percentage of that occurrence.While percentages give you an indication of how well an individual person performed on a test, percentiles give you an indication of how well that person did compared to others. It's a more complicated idea than a percentage and might be best

Reporting

Reporting is the process used to communicate knowledge gained from assessing student learning. The purpose of reporting is to provide relevant information about a student's progress to students, parents, support staff and other teachers.

Reporting student performance

Requirements for formal and informal reporting are based on ministerial orders and regulations authorized under the School Act. Schools must follow the specific requirements for reporting student progress as outlined in the policy.

Formal Reports

Formal reports communicate to parents and students significant aspects of the students' progress in the areas of intellectual, social, human and career development.

Performance Scale

The performance scale for Primary students indicates, in words or as a graph, the student's level of performance in relation to the expected learning outcomes set out in the provincial curriculum for each subject and grade. For Kindergarten, performance is described as one of the following:

- Approaching Expectations
- Meeting Expectations
- Exceeding Expectations

For Grades 1 to 3, performance is described as one of the following:

Not Yet Meeting Expectations Use of the performance scale to show progress in language arts (including reading, writing, and speaking/listening), mathematics, social studies and science is mandatory. The performance scale may also be used to report progress in other areas, such as fine arts, personal planning, physical education, social responsibility and work habits.

Informal Reports

Each school year, teachers must provide parents with a minimum of two informal reports. In relation to curriculum, informal reports may describe:

- what the student is able to do
- The areas of learning that require further attention or development

Ways the teacher is supporting the student's learning needs (and where appropriate, ways the student or the parents might support the learning) Informal reports are an important link between home and school and can take a variety of forms, such as:

Telephone calls

- interim reports (written or oral)
- Conferences (parent-teacher, three-way, student-led, etc.)

Parents should have the opportunity to meet with teachers for a conference at least once each school year. A record of each informal report should be kept, noting the date and type and topic(s) of discussion.

Progress Report

A critical element of any student's learning experience is the need for informed and meaningful feedback to those invested in the student's progress. Reporting on student progress must have a well-defined purpose for it to be meaningful. It must clearly identify the information needing to be communicated, the audience it is intended for and how that information will be used to improve future or related learning. Three primary purposes for reporting student progress:

1. To communicate student growth to parents and the broader community
2. To provide feedback to students for self-evaluation
3. To document student progress and the effectiveness of instructional programs.

Because reporting student progress serves a variety of purposes, we believe no one method of reporting is capable of serving all purposes well. A multi-faceted comprehensive reporting system is essential. Multiple means of reporting progress is divided into two subsets, individual and whole school reports. Within these subsets, the means for reporting may include but are not limited to: Individual Subset - report cards, progress reports, standardized testing, evaluated projects and assignments, portfolios and exhibitions of student work, homework, individual web pages, parent-teacher conferences, student-teacher conferences and student led conferences. Whole School Subset- Standardized testing, open houses, classroom and school-wide news letters, Each means of reporting on student progress will include a statement of purpose. The statement of purpose may vary according to the specific type of reporting taking place and the audience it is directed toward.

Cumulative Record

This is longitudinal record of pupils' educational history. The progress of the development pattern of each student is recorded cumulatively from period to period in a comprehensive record designed for the purpose. Such a record is known as a cumulative record.

Elements of a Cumulative Record

- Data on achievement in various subjects of study
- Physical development
- Health matters
- Participation in co-curricular activities
- Special achievements
- Personal details

Profile

An outline of something, especially a person's face, as seen from one side.A short article giving a description of a person or organization. Describe (a person or organization) in a short article. Represent in outline from one side.

Open House

An open house (also known as open day and at-home day) is an event held at an institution where its doors are open to the general public to allow people to have a look around it in order to gain information on it. These are often held at schools and universities in most areas to attract prospective students, familiarize them (and their parents) with facilities, allow new students to become familiar with facilities and meet others, or to open informal communication channels

between school staff and students and parents. Open houses are often seen as one of the last times a graduating senior will see their friends in such a large gathering and is often celebrated with much enthusiasm. Friends and family of the graduate are often in attendance to celebrate their graduate's accomplishment as well as a wishing them a bright future. Open houses are also usually an opportunity for the graduate to receive some money for their further education. Guests traditionally bring small gifts or cards with money, as a way of supporting the graduate's college tuition.

Use of feedback for Parents

A review process of the new reporting resources was carried out with a number of schools. Schools that reviewed the materials found them useful and easy to follow. They believed that the materials signaled a desirable paradigm shift in reporting to parents. In particular, the following aspects of the materials were highly valued by schools:

The principles were seen as clear and appropriate.

Examples illustrating what parents can do at home were seen as useful for either school reports or school newsletters.

National standards clarifications were welcomed, considered overdue' and seen as clear and useful for both teachers and parents.

The information sharing process diagram was seen as helpful' and well-constructed'.

The example of key competencies reporting was seen as useful.

Use of feedback for Students

Feedback is any response made in relation to students' work or performance. It can be given by a teacher, an external assessor or a student peer. It is usually spoken or written. Feedback is ... most effective when it is timely, perceived as relevant, meaningful and encouraging, and offers suggestions for improvement that are within a student's grasp (Brown, Bull, &Pendlebury, 1997). It is intended to acknowledge the progress students have made towards achieving the learning outcomes of a unit. Good feedback is also constructive, and identifies ways in which students can improve their learning and achievement. Providing a mark or a grade only, even with a brief comment like "good work" or "you need to improve" is rarely helpful. Here are some common examples of feedback that is not helpful to students (Chamberlain, Dison& Button, 1998). It is widely recognized that feedback is an important part of the learning cycle, but both students and teachers frequently express disappointment and frustration in relation to the conduct of the feedback process. Students may complain that feedback on assessment is unhelpful or unclear, and sometimes even demoralizing. Additionally, students sometimes report that they are not given guidance as to how to use feedback to improve subsequent performance. Even worse, students sometimes note that the feedback is provided too late to be of any use or relevance at all. For their part, lecturers frequently comment that students are not interested in feedback comments and are only concerned with the mark. Furthermore, lecturers express frustration that students do not incorporate feedback advice into subsequent tasks.

Use of feedback for teachers' self-improvement

Receiving student feedback in the middle of the semester can help you to know what you are doing that facilitates the learning of the students and it will help make you aware of any difficulties they may be having with your instruction. It allows you to make adjustments needed by students in your class before the end of the semester and will foster a feeling among your students that you care about your teaching. Often minor adjustments on your part can make a tremendous difference in the classroom.

Get written feedback

Have your students fill out a questionnaire about six weeks into the semester. By this time students have a general sense of the class and your teaching. The anonymity of the questionnaire will allow students to be honest about how they feel about the course and about you as their teacher. A less formal way to get written feedback from your students is to pass out paper and have them write down what they like about the class, what they don't like about the class, and suggestions for change. This latter method can be used two or three times during the semester

Standards of quality and reporting formats

The interpretation of any kind of measurement depends on the standards of quality that are applied. A student's performance may be measured in three different ways:

- Criterion-referenced
- Norm-referenced
- Self-referenced

Criterion-referenced (performance in relation to established standards or criteria).

Criterion-referenced assessments are used to make judgements about absolute levels of performance. Such assessments may set benchmarks for what constitutes "mastery" or "high performance" and/or determine minimum standards that should be achieved by every student.

Norm-referenced (performance in relation to a defined group)

Norm-referenced assessments classify students based on a comparison among them. The results of norm-referenced assessments have meaning only in comparison with the results of other students. They do not reflect their proficiency in relation to absolute standards, but in relative terms.

Self-referenced or ipsative (change in performance over time)

Self-referenced assessments are generally used formatively by teachers to track the growth and progress of individual students over time.

UNIT – VIII

ISSUES, CONCERNS AND TRENDS IN ASSESSMENT AND EVALUATION

Entrance examinations

Entrance examinations act as qualification exams for admission to higher studies in various reputed institutions of the world. It is the mode for getting admission into various undergraduate, post graduate and profession degree courses. Basically entrance examination is common at higher level of education which is conducted by educational institutes and colleges. After clearing the entrance examination student can earn a specialized degree.

These papers test the persistence, hard work, and effort of students. When there is the pressure of finishing a certain number of questions in a fixed amount of time, the calm and composure of a candidate is also tested. This is why entrance examinations are so important since they test the candidate on various levels.

Scope of Entrance examination

Choosing a course is very simple but getting into it one should pass entrance exam. On the basis of entrance examination suitable candidates are selected and on the basis of score and ranking obtained by the candidate in entrance examination, Colleges and institutes provide admission into courses such as Diploma, Post diploma, under graduate, Post Graduate, research and fellowship programs. Even for admission into all types of professional courses one need to get it done with the entrance examination. The entrance exam has various scopes since it provide chance of forming well-built educational foundation in present competitive market. The main purpose of conducting entrance exam is to judge the student ability, sharpness, knowledge etc. The aptitude of the student is tested in entrance exam. Definite pattern is used in entrance exam, after the students get it done with the written test, the short listed candidates in written test are followed with the group discussion round and the personal interview.

Kinds of Entrance Examinations in India

Entrance examination differ depending upon the type of fields such Engineering entrance exam, Fashion and technology entrance exam, Film and television entrance exam, Management entrance exam, Medical entrance exams, Science/computer entrance exam, Law entrance exam etc are the most preferred entrance exam by the students.

- Engineering Entrance Examinations in India
- All India Engineering/Pharmacy/Architecture Entrance Examination (AIEEE)
- Joint Entrance Examination (JEE)
- Graduate Aptitude Test in Engineering (GATE)
- National Aptitude Test in Architecture (NATA)
- SLIET Entrance Test (SET) conducted by SantLongowal Institute of Engineering and Technology (SLIET), Punjab.
- State Engineering Entrance Exam.
- Tamil Nadu Common Entrance Test (TANCET).

Board examinations

Board examinations refer to the public examinations that are conducted at the end of the 10th grade education (SSC), and at the end of the 12th grade education (HSC). The scores achieved in these exams are considered very important for getting into universities, professional courses or training programmes and other occupations.

Half-yearly examination

Half-yearly examination means happening in the middle of a calendar year.

Annual examination

A final examination, annual, exam, final interview, or simply final, is a test given to students at the end of a course of study or training. Although the term can be used in the context of physical training, it most often occurs in the academic world. Most high schools, colleges, and universities run final exams at the end of a particular academic term, typically a quarter or semester, or more traditionally at the end of a complete degree course.

Objectivity and subjectivity in assessment

Objectivity and subjectivity in assessment refers to the nature of data gathered through an assessment process.

Objectivity

Objectivity defines information that is collected through measuring, observing, and examining facts.

Subjectivity

Subjectivity describes information that is based on personal views, opinion, or value judgments.

Some researchers view objectivity and subjectivity as opposites, while others suggest that they are at either end of a continuum. All assessments fall somewhere on this range. Typical assessments in early childhood include observational assessments, analysis of children's work, developmental screenings, and standardized tests, to name a few. Every assessment will have some characteristic of objectivity and subjectivity.

No-Detention Policy (NDP)

The no-detention policy in education is a policy under the Right to Education Act, which deems that no student should be failed or barred from school until they complete their elementary education. This covers classes 1 through 8. It means that children will inevitably be promoted to the next class. No examinations are conducted for elementary school. Students are assessed through CCE.

As per the 86th amendment to the RTE (Right to Education Act), all children between the ages of six to fourteen have the right to full-time education of acceptable and equitable quality. The no-detention policy's aim is to reduce the number of out-of-school children by giving them basic education in a safe environment. The aim is to provide education without damaging students' self-esteem and to reduce the social stigma that is associated with failure.

The Right To Education (RTE) Act

The Constitution (86th Amendment) Act, inserted Article 21-A in the Constitution of India to provide free and compulsory education of all children in the age group of six to fourteen years as a Fundamental Right in such a manner as the State may, by law, determine.

It means that every child has a right to full-time elementary education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards.

It came into effect on 1 April 2010.

The RTE Act provides for:

- Every child in the age group of 6-14 has the right to free and compulsory education in a neighbourhood school, till the completion of elementary education.

- Private schools will have to take 25% of their class strength from the weaker section and the disadvantaged group of the society through a random selection process. The government will fund the education of these children.

- No donation and capitation fee is allowed.

- No admission test or interview either for child or parents.

- No child can be held back, expelled and required to pass the board examination till the completion of elementary education.

- There is provision for the establishment of commissions to supervise the implementation of the act.

- A fixed student and teacher ratio is to be maintained.

- All schools have to adhere to rules and regulations laid down in this act, failing which the school will not be allowed to function. Three years moratorium period has been provided to school to implement all that is required of them.

- Norms for teachers training and qualifications are also clearly mentioned in the act.

- All schools except private unaided schools are to be managed by School Management Committees with 75% of parents and guardians as members.

Question bank

A collection of questions forms a question bank. It allows you to create, preview, and edit stored questions. Question banks can store questions within categories. The categories can be limited to being used on the site, course, or quiz level.

A question bank is planned library of test items designed to fulfill certain predetermined purposes. Questions banks should be prepared with at most care so as to cover the entire prescribed text . Questions bank should be exhaustive and cover entire content with different types.

"An item bank is defined as an organized collection of test items that can be assessed for test development". – Rudner

Purposes of question bank

- To improve the teaching learning process.

- Through instructional efforts the student's growth will be obtained.

- To improve evaluation process.

- A pool of test items can be used for formative and summative evaluation of the student's performance.

- It is a pool of readymade quality questions is made available to teachers and examiners. So that they may select appropriate questions to assess predetermined objectives.

Steps in preparation of question bank

- Planning a question bank

- Development of question bank and collection of test items

- Blue printing for developing questions bank

- Validation

- Reviewing the questions paper

- Recording and storing

- Developing a system for maintaining confidentiality

Coaching

Coaching is unlocking a person's potential to maximise their own performance. It is helping them to learn rather than teaching them. Coaching is a process that aims to improve performance and focuses on the 'here and now' rather than on the distant past or future. While there are many different models of coaching, here we are not considering the 'coach as expert' but, instead, the coach as a facilitator of learning.

There is a huge difference between teaching someone and helping them to learn. In coaching, fundamentally, the coach is helping the individual to improve their own performance: in other words, helping them to learn.

A lot of time such coaching classes prove to be a bane for students. Individual attention becomes impossible for students to receive during coaching. It also creates a sense of stress as students in their coaching and school need to maintain different types of pattern of their studying along with homework. In turn, coaching classes can also create an extra burden of expenditure. Only one coaching class is not sufficient for students from different school. Thus, there are different coaching classes for different subjects that makes it difficult for students to cope with such coaching's.

UNIT – IX

RECENT TRENDS IN ASSESSMENT AND EVALUATION

<u>Online Examination System</u>

Online Examination System is a technology-driven way to simplify examination activities like defining exam patterns with question banks, defining exam timer, objective/ subjective question sections, conducting exams using the computer or mobile devices in a paperless manner.

Online examinations, sometimes referred as e-examinations, are the examinations conducted through the internet or in an intranet (if within the Organization) for a remote candidate(s). Most of the examinations issue results as the candidate finish the examination, when there is an answer processing module also included with the system.

Online Examination System is a cost-effective, scalable way to convert traditional pen and paper-based exams to online and paperless mode. Candidates can appear for the exam using any desktop, laptop, or mobile device with a browser. Exam results can be generated instantly for the objective type of questions. It can simplify overall examination management and result in generation activity.

Benefits of an Online Examination System

- Environment-Friendly
- Economical
- Quick Turnaround Time
- Highly Secure
- Easy-to-use
- Autograding

Disadvantages of an Online Examination System

- Challenges in Technology Adoption
- Infrastructural Barriers
- Difficulty in Grading Long-answer Type
- Susceptible to Cheating
- Transitioning to Open-Book Exams

<u>Computer-based testing</u>

The need for conducting computer-based examinations has rightly increased, given the post-pandemic challenges. The global pandemic has underlined the challenges and vulnerabilities the education sector is facing. There are serious concerns about building a resolute framework to keep academia immune to such disruptions. Well, CBT provides a scaffold by minimizing the administrative burden of conducting examinations on academia, reducing the time and effort that would otherwise be consumed on the laborious process of setting up examination centers, printing and distributing exam papers, and other overheads.

In computer-based testing (CBT), computer technology is employed, which means the candidates use computers to answer questions presented on the monitor. The test-taker submits the answer

using a keyboard or a mouse. The computer which the test taker is using can be referred to as a client computer. In contrast, the computer used for delivering the exam while being connected on an intranet/internet is referred to as a server computer. Therefore, computer-based exams take place in a client-server environment.

The appeal of online CBT lies in its functionality to streamline how educational assessments, certifications, or pre-employment tests are conducted in multiple ways. From its inception in the 1970s, to now when computers have assumed a ubiquitous status, it has become the ideal successor to paper-and-pencil tests. Interestingly, the term "online exam" and "computer-based exam" are often used interchangeably; however, there is a subtle difference between these two.

An online exam may be perceived as a subsection of the CBT because, as the name suggests, the computer-based test is too comprehensive not to include online exams in its ambit. While the term online exam can be used for any examination conducted over the internet, the computer-based test is generically used for any test that is given and taken using computers, without depending on the internet.

To put it into perspective, a CBT may or may not be connected to a server on the intranet/internet and may act as standalone testing. Once the exam is over, the result can be transferred online to a web server or locally stored on the computer's hard disk.

How is a computer-based test done?

All the methods involved in a paper-based test are initialized digitally via computer-based examination systems, whether for student learning evaluation or candidate assessment during exams. The online CBT exam system can register and organize a vast candidate pool through its scalable platform. The system enables the live monitoring of examinees' screens from the farthest locations through remote proctoring solutions. Furthermore, the system allows quick access to test results in real-time with data analytics.

Benefits of using computer-based tests

Computer-based testing can be used most effectively for several academic purposes, certifications tests, or during pre-employment screening processes that have examinations (assessments) as one of the decisive rounds to screen out applicants. Moreover, for corporates, such tests can enable management to develop pathways for employees' career progressions. Learning and development departments can also leverage online CBTs to identify employees' strengths and weaknesses and design appropriate training programs for holistic workforce development.

Computer-based tests have various advantages over traditional examination methods. From conducting exams to delivering reports, computer-based exams have made the examination process smoother than ever. Besides, **computer-based tests** offer multiple benefits to candidates and administrators in administering, grading and scaling up the process.

Convenience

Computer-based tests can be conducted all year round. Students can take tests at a time and place of their choosing. They do not need to travel to a particular physical location to write an exam,

enabling candidates from far-off areas to give their test. The test window usually extends between 1-3 weeks, allowing aspirants to choose a convenient slot.

Computer adaptive testing

Computer adaptive tests are a form of CBTs whose difficulty level adjusts, based on the respondent's answers, depending on the examinee's ability and knowledge. For example, if the test-taker answers a question correctly, the next problem will be a tad difficult. Computer adaptive testing is yet another milestone of the assessment technology, providing an effective means to assess students' abilities more precisely.

Integrity

There are various security features inherent in computer-based testing to ensure that the test integrity is maintained. In addition, online proctoring and various available security features make CBT a highly secure mode of assessment.

Wide reach

When social distancing and restricted traveling are globally accepted norms in the wake of the ongoing pandemic, conducting online exams from any corner of the world has given hope to universities. Unlike the olden examination approach, students can appear for an online computer-based exam from a place of their choosing and select an exam slot as per their convenience.

Scalable

Since the computer-based examination can be conveniently hosted on a robust CBT exam platform, it can be conducted simultaneously for multiple candidates irrespective of their locations. Additionally, a stellar computer-based exam software can support over 100,000 proctored tests and can be scaled further without significant investments.

Auto grading

This feature of computer-based tests eliminates the scope of human error and the hassle of allotting evaluation duties to teachers. In addition, multiple-choice questions can be auto-graded easily, helping institutions to churn out real-time reports. It also saves considerable time in evaluating a large number of answer sheets.

Uncovers new aspects of thinking

Gamification can reveal underlying aspects of students' problem-solving skills and help instructors measure their higher-order thinking skills. By having students undertake computer-based tests that focus on digital learning games and evaluate their rationale behind making specific decisions, online program instructors can personalize and tailor-make future learning experiences for each student.

Inclusivity

A computer-based test can also accommodate the needs of differently-abled people by enabling them to take up assessments more conveniently instead of a pen-and-paper test. Moreover, the integration of features such as Braille keyboards, magnification tools, screen readers, voice-to-text,

and text-to-voice applications has lent significant convenience to designing and deploying exams for specially-abled candidates.

Saves time and energy

The time consumed in creating question papers, driving registration, arranging supplies and evaluation can be avoided with online CBTs as they automate the entire process. Additionally, resource consumption is significantly lower. Case in point: stationery, invigilators or transport facilities.

Feedback

Feedback is information given to the learner about the learner's performance relative to learning goals or outcomes. It should aim to (and be capable of producing) improvement in students' learning.

Feedback redirects or refocuses the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the output or outcome of the task the process of the task the student's management of their learning or self-regulation, or about them as individuals (which tends to be the least effective).

This feedback can be verbal or written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers

Feedback should be a dialogue rather than one-way communication. It should clearly link to the learning outcomes and encourage students to reflect on their learning.

Good feedback has a positive impact on the person receiving it:

- it encourages attention to the assessment task - by focusing the student's effort on the task,
- it motivates the student to continue to work - by encouraging them to do the best they can,
- it provides evidence of existing good practice - so the student knows what and why they have done well,
- clarifies the expected standards - for the piece of assessment
- signposts where and how to improve.

A constructive feedback dialogue enables the student to take control of their own assessment by making them active participants in the process.

Clarify what good performance is:

Much student dissatisfaction as well as unsatisfactory performance, relates to the fact that they have not fully understood the assessment criteria. It is important to first and foremost make clear what good performance is.

Feedback needs to explicitly state

- what was done well (or badly) and why
- where there is room for improvement and why
- what steps to take to improve

Good feedback is fair, honest and clear. The feedback wording, the mark and the aspects of the work the feedback refers to, need to be aligned or consistent.

Facilitate the development of reflection and self-assessment

It is important to note what students have done well. Many students find it hard to self-assess and reflect critically. So it is vital that the feedback and comments provided to them highlight how they shall interpret the feedback and reflect upon their learning development. When suggesting what to improve, it is good practice to pick out no more than three aspects of the work. Giving students a longer list can lead to them just 'shutting down' and ignoring all your advice. These three aspects should:

- be the key things that would make a difference to the quality of the work
- be achievable within the students' time and other work constraints
- refer to material which the student can reasonably access.

Deliver high quality information to students about their learning

Feedback of good quality is timely (delivered soon enough after the hand in so that it can be acted upon), relevant (to the student and the context), informative (not only focusing on strengths and weaknesses or spelling but also more abstract academic concepts like strength of an argument) and understandable (this relates to both the language used as well as the quantity of feedback) and allows students to close the gap between where they are and where they need to be with their work.

Encourage dialogue

Feedback should be considered more as a discussion, rather than a one-way channeling of information from the tutor to the student. Active involvement in a discussion around students' work helps students to challenge their knowledge and belief and reassess what they know.

Encourage positive motivational beliefs and self-esteem

Feedback influences how students feel about their course, their performance and themselves. It is important then to structure feedback in such a way as to maintain or increase students' motivation and to encourage them to focus on learning goals rather than performance goal (i.e passing the test).

Provide opportunities to close the gap

The value of feedback is assessed in terms of action, i.e. feedback has to lead to changes in student behaviour. The aim of the tutor and peer feedback is to encourage students to respond to the comments to complete the feedback loop (Saddler, 1989).

Provide information that teachers can use to shape their teaching

Feedback practice not only refers to teachers commenting on students' work but also learners providing their tutors with information. Student feedback is useful for teachers since it provides a clearer understanding of students' learning process and difficulties they might have. This helps to structure feedback so that it caters to the needs of the learners.

Characteristics of Constructive Feedback

- **Individualised and relevant**, demonstrating empathy and attention to the particular learning style and needs of the student, rather than comparing or generalising to other students; feedback is linked to the particular learning goals of the student.
- **Goal-directed**, providing assistance and increased understanding of what is expected or required, with a focus on the needs of the clients and relationship to the learning goals of the student.
- **Well timed and expected**, given as soon as is appropriate during or after the action/behaviour (with consideration to client safety, privacy, time available for discussion and the student's readiness to hear it) to prevent further problems or embarrassment arising. Avoid waiting until halfway assessment or supervision session to provide the feedback if client-student or staff-student relationships are at risk of being negatively affected.
- **Behaviour- focused**, rather than personality focused. Feedback that refers to what the student does, allows scope for change. We might comment "you appeared to lose focus and direction when interviewing Mr J", rather than commenting "you are too vague during client interviews".
- **Positive and encouraging**, balancing comment on strengths you have observed and what the student did well with areas of weakness or that require further growth; encouraging improvement with practical and specific suggestions.
- **Collaborative**, inviting student involvement and agreement in identifying strengths and weaknesses, in seeking solutions, reaching conclusions and formulating plans for future action; facilitating self-evaluation.
- **Change focused** (non-evaluative), exploring specific strategies to maintain strengths and improve weaknesses and facilitating a problem-solving approach that highlights the consequences both positive and negative of particular behaviours or actions.
- **Factual** (not generalised), providing evidence-based examples based on observed performance that highlight actual strengths and weaknesses of modifiable behaviours you have observed; providing specific suggestions of improvements to what they are doing, or occasions where positive behaviour was demonstrated, and discussing outcomes of each behaviour.
- **Digestible**, focussing on one selected area at a time or providing the student with choice about the focus of feedback first. Overloading a person with too much feedback all at once reduces the possibility that the feedback will be accommodated and used.
- **Respectful**, demonstrating mindfulness of acceptable boundaries, respecting confidentiality and using language that is non-judgemental, and provided in a relaxed mutually agreed upon setting. Reciprocal, inviting feedback from the student about aids and barriers to learning as experienced on placement and about your feedback and teaching methods.

<u>Measures of central tendency</u>

- Mean
- Median
- Mode

Mean

Mean is defined as the sum of the observations divided by the number of observations.

Mean=Sum of all the values/n

Median:

The median is that value which divides the group into **two** equal parts, one part comprising all values greater, and the other, all values less than median. It is the middle score.

If n is odd,

Median= $[(n+1)/2]^{th}$Observation

If n is even,

Median= $\frac{1}{2}\{[(n+1)/2]^{th}$Observation$+[(n/2+1)^{th}$Observation$]\}$

Mode:

The mode refers to that value in a distribution, which occur most **frequently**. It is an actual value, which has the highest concentration of items in and around it.

<u>Measures of dispersion</u>

- Range
- Quartile deviation
- Mean deviation
- Standard deviation

Range

This is the simplest possible measure of dispersion and is defined as the difference between the largest and smallest values of the variable.

In symbols, Range = L – S.

Where L = Largest value and S = Smallest value.

Quartiles

The quartiles divide the distribution in **four** parts. There are three quartiles. The second quartile divides the distribution into two halves and therefore is the same as the median.

The first quartile (Q1)

Second quartile (Q2)

Third quartile (Q3)

Quartile Deviation (Q.D)

Quartile Deviation is half of the difference between the first and third quartiles. Hence, it is called Semi Inter Quartile Range.
In Symbols, Q.D = (Q3 -Q1) / 2

Inter quartile range= Q3 -Q1

Mean deviation

Standard Deviation

Karl Pearson introduced the concept of standard deviation in 1893. It is the most important measure of dispersion and is widely used in many statistical formulae. Standard deviation is also called Root-Mean Square Deviation. The reason is that it is the square–root of the mean of the squared deviation from the arithmetic mean. It provides accurate result. Square of standard deviation is called Variance. The standard deviation is denoted by the Greek letter σ (sigma).

Standard deviation= $\sqrt{[\sum fd^2/n]/[\sum fd/n]^2}$

Percentile

The percentile values divide the distribution into 100 parts each containing 1 percent of the cases.
<u>Measures of shape</u>

Skewness

Skewness is a measure of symmetry, or more precisely, the lack of symmetry. A distribution, or data set, is symmetric if it looks the same to the left and right of the center point.

If in a distribution mean = median = mode, then that distribution is known as symmetrical distribution.

If in a distribution mean ≠ median ≠ mode , then it is not a symmetrical distribution and it is called a skewed distribution and such a distribution could either be positively skewed or negatively skewed.
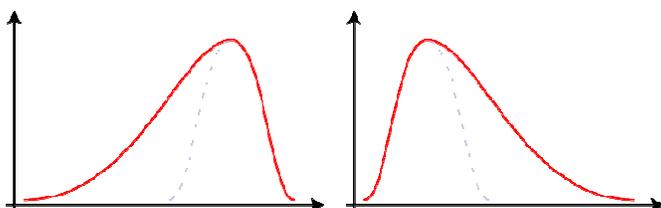
Karl – Pearson's Coefficient Skewness = (Mean – Mode)/ S.D

Kurtosis

Kurtosis is a statistical measure used to describe the degree to which scores cluster in the tails or the peak of a frequency distribution. The peak is the tallest part of the distribution, and the tails are the ends of the distribution.

There are three types of kurtosis:

- mesokurtic
- leptokurtic
- platykurtic

Mesokurtic Curve   Leptokurtic Curve   Platykurtic Curve
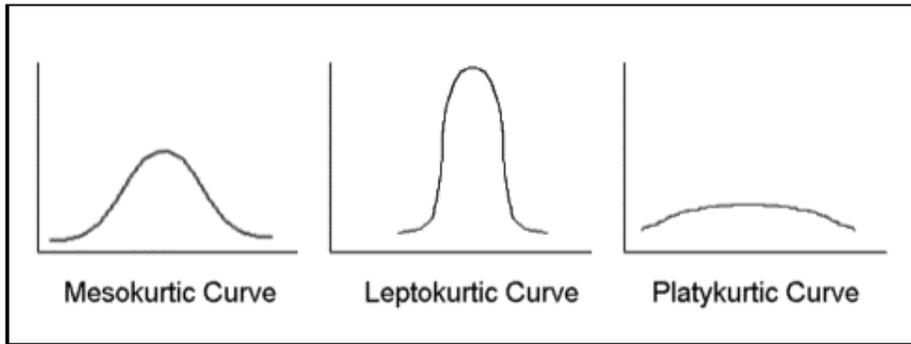
Mesokurtic: Distributions those are moderate in breadth and curves with a medium peaked height.

Leptokurtic: More values in the distribution tails and more values close to the mean (i.e. sharply peaked with heavy tails)

Platykurtic: Fewer values in the tails and fewer values close to the mean (i.e. the curve has a flat peak and has more dispersed scores with lighter tails).