NETAJI SUBHAS OPEN UNIVERSITY

STUDY MATERIAL

M. Ed. Special Education
(Hearing Impairment / Intellectual Disability) - ODL

A 7

EDUCATIONAL EVALUATION

M. Ed. Spl. Ed. (H.I. / I.D.)
ODL Programme

AREA - A

A 7 : EDUCATIONAL EVALUATION

A COLLABORATIVE PROGRAMME OF
NETAJI SUBHAS OPEN UNIVERSITY
AND
REHABILITATION COUNCIL OF INDIA

AREA - A
DISABILITY SPECIALIZATION
COURSE CODE - A 7
EDUCATIONAL EVALUATION

Chairman	**Prof. Subha Sankar Sarkar,** Vice Chancellor, Netaji Subhas Open University, Kolkata-700 064
Convenor	**Prof. Atindranath Dey,** Director, School of Education, Netaji Subhas Open University, Kolkata-700 064

RCI Expert Committee

Dr. Jayanthi Narayan	Former Deputy Director, NIMH, Secunderabad.
Dr. Varsha Gathoo	Head and Reader, Department of Education, AYJNISHD (D), Mumbai.
Dr. Sanjay Kumar	Assistant Professor, DSMNRU, Lucknow,
Shri Ashok Chakraborty	Ex-Chairperson, ZCC, RCI & Secretary, SHELTER.
Dr. Hemant Singh Keshwal	Assistant Prof. of Special Education and Centre In-Charge, NIEPID-RC, Kolkata
Shri Suman Kumar	Assistant Professor of Speech & Hearing, AYJNISHD-RC, Kolkata.
Professor A. N. Dey	Director, School of Education, NSOU.
Smt. Antara Choudhury	Assistant Professor of Special Education, School of Education, NSOU.

NSOU Expert Committee |Board of Studies (BoS)|

Professor A. N. Dey	Director, School of Education, NSOU.
Professor Dulal Mukhopadhyay	Professor of Education (Retd), NSOU.
Shri Ashok Chakraborty	Ex-Chairperson, ZCC, RCI & Secretary, SHELTER.
Professor Debasri Banerjee	Professor of Education, Department of Education, University of Calcutta
Dr. Hemant Singh Keshwal	Assistant Prof. of Spl. Education and Centre In-Charge, NIEPID-RC, Kolkata.
Shri Suman Kumar	Assistant Professor of Speech & Hearing, AYJNISHD-RC, Kolkata.
Professor Swapan Kr. Sarkar	Head, SoE, NSOU
Prof. Sanat Kumar Ghosh	Professor of Education, SoE, NSOU.
Professor Sumanta Chattaraj	Professor of Education, SoE, NSOU.
Smt. Swapna Deb	Consultant, SoE, NSOU.
Smt. Antara Choudhury	Assistant Professor of Special Education, School of Education, NSOU.
Dr. Abhedananda Panigrahi	Coordinator, B. Ed., SoE, NSOU.
Shri Prabir Naskar	Assistant Professor of Special Education, SoE, NSOU.

Title : Educational Evaluation

Unit	**Name of the Unit Writer**	**Name of the Editor**
Unit-1	Dr. Rakhi Bhattacharya, Asst. Professor, Govt. General Degree College, Kalna	Prof. Sanat. K. Ghosh, Professor of Education, SoE, NSOU. & Dr. Parimal Sarkar, Prof. of Education, SoE. NSOU
Unit-2	Dr. Mousumi Boral, Asst. Prof., Satyapriya Roy College of Education, Kolkata	
Unit-3	Dr. Ushasi Kundu, Asst. Professor, Diamond Harbour Women's University, W.B.	
Unit-4	Sri Palash Das, Asst. Professor, WBUTTEPA (Erstwhile David Hare Training College), Kolkata,	
Unit-5	Dr. Kartick Chandra Sarkar, Associate Professor and Officer-in Charge, Govt. Teachers' Training College, Malda	
General and Format Editing		Smt. Swapna Deb, Consultant, SoE, NSOU, and Mandira Chakraborty, Academic Consultant, School of Education, NSOU.
Programme Coordinator		Smt. Antara Choudhury, Asst. Prof. of Special Education, School of Education, NSOU.

The Self Instructional Material (SIM) is prepared keeping conformity with the M.Ed.Spl. Edn.(HI/ID) Programme as prepared and circulated by the Rehabilitation Council of India, New Delhi and adopted by NSOU on and from the 2020-2022 academic session.

Mohan Kumar Chattopadhyay
Registrar

Prologue

I am delighted to write this foreword for the Self Learning Materials (SLM) of M Ed in Special Education (ODL). The M Ed in Special Education in ODL mode is a new academic program to be introduced at this University as per NOC issued by the Rehabilitation Council of India, New Delhi and subject to approval of the program by the DEB-UGC.

I must admire the emulation taken by the colleagues from School of Education (SoE) of NSOU for developing the Course Structure, Unit wise details of contents, identifying the Content Writers, distribution of job of content writing, editing of the contents by the senior subject experts, making DTP work and also developing E-SLMs of all the 16 Papers of the M Ed program. I also extend my sincere thanks to each of the Content Writers and Editors for making it possible to prepare all the SLMs as necessary for the program. All of them helped the University enormously. My colleagues in SoE fulfilled a tremendous task of doing all the activities related to preparation of M Ed in Spl Edn SLMs in war footing within the given time line.

The conceptual gamut of Education and Special Education has been extended to a broad spectrum. Helen Keller has rightly discerned that *"Have you ever been at sea in a dense fog, when it seemed as if a tangible white darkness shut you in and the great ship, tense and anxious, groped her way toward the shore with plummet and sounding-line, and you waited with beating heart for something to happen? I was like that ship before my education began, only I was without compass or sounding line, and no way of knowing how near the harbour was. "Light! Give me light!" was the wordless cry of my soul, and the light of love shone on me in that very hour."* So education is the only tool to empower people to encounter his/her challenges and come over being champion. Thus the professional Teacher Education program in Special Education can only groom the personnel as required to run such academic institutions which cater to the needs of the discipline.

I am hopeful that the SLMs as developed by the eminent subject experts, from the national as well as local pools, will be of much help to the learners. Hope that the learners of the M Ed Spl Edn program will take advantage of using the SLMs and make most out of it to fulfil their academic goal. However, any suggestion for further improvement of the SLMs is most welcome.

Professor (Dr.) Subha Sankar Sarkar
Vice-Chancellor, NSOU

First Edition : December, 2019

Printed in accordance with the regulations of the Distance Education Bureau,
University Grants Commission, Government of India

AREA - A

A 7 : EDUCATIONAL EVALUATION

Educational Evaluation

Unit 1 : Foundations in Evaluation

1.1 Concept of testing, measurement, assessment and evaluation
1.2 Difference between investigation, auditing, monitoring & evaluation
1.3 Principles of Evaluation
1.4 Areas of Evaluation
1.5 The evolution of the evaluation function; i) Measurement/ comparison, Transparency/ accountability, ii) Understanding/ learning/ decision making/ positive accountability

Unit 2: Scope of Evaluation

2.1 Problem-solving and decision-making
2.2 Positive accountability and excellence in education
2.3 Knowledge construction and capacity building of learners
2.4 Organizational learning and change, and strategic planning
2.5 Advocacy & communication

Unit 3: Teaching-learning and Evaluation

3.1 Evaluation of learning, for learning and in learning- Contexts, Need & Nature
3.2 Tools for evaluation and process of standardization
3.3 Equity & fairness in evaluation including adaptations & Accommodations
3.4 Report writing: Format, Content & Mechanics
3.5 Mastery Level Learning

Unit 4: Programme Evaluation & Review

4.1 Concept, need, goals and tools
4.2 Evaluation of instructional programmes
4.3 Techniques of programme evaluation
4.4 Reliability, validity and sensitivity in programme evaluation
4.5 Reviewing outcomes

Unit 5: Current Trends in Evaluation

5.1 Knowledge based evaluation
5.2 Performance Based Evaluation: Role play, Concept maps
5.3 Authentic Evaluation: Interviews, Writing samples, Projects, Exhibitions, Reflective Journals
5.4 Self evaluation: Rubrics & Rating scales
5.5 Exams: Online, On-demand, Take-home Power Tests & Open book

Netaji Subhas Open University

AREA - A
A 7 : EDUCATIONAL EVALUATION

A 7 ❐ Educational Evaluation

Unit – 1 : Foundations in Evaluation

Structure

1.1: Introduction

Education is considered as an investment in human beings in terms of development of human resources, skills, motivation, knowledge and the like. Any activity that we undertake needs to be evaluated to find its utility, effectiveness, quality and for its future improvement. In case of a manufacturing unit, the finished product is passed through a process of quality control, to check the quality of the finished goods. In case of any defects or drawbacks, the particular piece is rejected. The process is rechecked or reassessed for improvement, so that there are no rejections. In case of education, what do we do for the quality control? Evaluation helps to build an educational programme, assess its achievements and improve upon its effectiveness. It serves as an in-built monitor within the programme to review the progress in learning from time to time. It also provides valuable feedback on the design and implementation of the programme. Thus, evaluation plays a significant role in any educational programme.

Evaluation plays an enormous role in the teaching-learning process. It helps teachers and learners to improve teaching and learning. Evaluation is a continuous process and a periodic exercise. Understanding the properties, purposes, similarities and differences between educational measurement, and assessment. Evaluation is a fundamental component of the knowledge base of professional teachers.

1.2: Objectives

After completing the unit the learners will be able to explain the following key concepts of evaluation.

(a) Differentiate among investigation, auditing, monitoring and evaluation;

(b) Recognize the different areas of evaluation;

(c) Understand the function of evaluation;

(d) Knowing different areas of evaluation;

(e) Define the meaning of continuous and comprehensive evaluation;

(f) Discuss the role of continuous and comprehensive evaluation for holistic development of learners.

1.3: Concepts of Testing, Measurement, Assessment and Evaluation

As we discussed about evaluation in education, some fundamental questions come to our mind. Such as –

- Do the marks or grades obtained in different subjects represent the actual performance of the student?
- Do they tell anything about the learning style or the way of learning of the individual student?
- Do they indicate anything about the difficulties a student is facing during learning?
- Do they provide information on the areas of strength and weakness of the student in learning?
- Do they tell anything about the extent and pace of learning?

- Can all the aspects/areas of learning in all subject contents and co-scholastic competencies be scored or graded?
- Is there any alternative or/ and supplementary mechanism to assess learning in a better way?

Before we investigate on these questions, we need to understand terms like testing, measurement, assessment and evaluation. These are well defined by the experts in this field. But as the field itself has been changed a lot through the ages, terms took different shapes and qualities too. Therefore, it is important to understand the basic ideas expressed in these terms, but not to be too rigid in its application, especially in the field of education.

1.3.1: Testing

According to the dictionary, test is defined as a series of questions on the basis of which some information is sought. Test may refer to as a tool of evaluation. For example a question, set of questions, an examination. It is used to measure any particular quality of characteristic of one individual or group of individuals.

Anastasi and Urbina (1997) defined psychological testing as "essentially an objective and standardized measure of sample of behavior." According to AERA, APA, & NCME (1999) a test is a device or procedure in which a sample of an individual's behaviour is obtained, evaluated, and scored using standardized procedures.

In education, a very popular form is achievement test which is developed to measure extent of achievement of a learner / group of learners. Therefore, testing can be considered as a form of assessment. In education, testing is using an instrument or systematic procedure in measuring a sample of behaviour of learners.

The test is to measure the ability, knowledge or performance developed during the course of learning. Here two types of test are given to assess the knowledge of students they are Teacher Made Tests and Standardized Tests. Teacher Made Tests are designed by the teachers for the purpose of conducting classroom tests. These teacher made tests can be in the form of oral tests and written tests. These tests have a limited area of application and are prepared almost by all teachers according to their requirements. A Standardized test is one which norms have been established. The test has been given to a large number of students. A norm is an average score which measures achievement. So, every standardized test has norms. It is intended for general use and covers a wider scope of material than is covered in an ordinary teacher made test. A standardized test is one in which the procedure, apparatus and

scoring have fixed so that precisely the same test can be given at different time and places.

Importance of Testing:

(a) Tests tell the teacher what the students can and cannot do and here are how successful the teaching has been.

(b) They also tell the teacher what areas need to be taught in the future.

(c) Test tell the students how well they are progressing, and where they need to focus their attention as learners.

(d) Regular tests also encourage students to take their learning seriously, and give them a series of definite goals towards the aim.

1.3.2: Measurement

In everyday life measurement and evaluation are often used interchangeably. But they mean quite a different thing in education. Measurement refers to the process of assigning numbers to events, objects etc., according to certain rules. As Nunnally says, "Measurement consists of rules for assigning numbers to objects in such a way as to represent quantities of attributes."

"Measurement entails certain rules and procedures for assigning numbers to attributes in such a way that the numbers represent the quantity of the attribute" – A Dictionary of Education (1981).

This quantifies the performance of a student in a test, as it assigns the numerical value (marks) to express the performance of the student. It measures the achievement based on a specific test offering numerical value. We measure quantity of milk, weight of the person or rainfall in a day. Such 'physical' attributes like volume, weight etc. can be measured accurately using some instruments like measuring cylinder, weighing balance, etc. But in case of attributes like academic scholarship we do not get such accurately measuring instruments.

Further when a student secures the minimum mark 0 or the maximum mark 100 in a subject, we cannot assume that the student knows nothing (in case of securing 0) or knows everything (when securing 100) in the subject concerned. We can only infer that on the first occasion, the performance is 'poor' or on the second occasion, it is 'extremely good'. Based on the marks, we make qualitative remarks on the students' performance like 'poor', 'average', 'good' etc. which may not be always correct. If a student secures a score of 75 in Language in class VII, this score does

not tell anything whether he/she likes to read books other than textbooks, gives better response in language classes, takes active parts in language activities, and such other characteristics of the student. Such characteristics which are also the indicators of learning can only be stated through statements and not through numbers.We depend on the teacher-made test for this.

The main properties of measurement according to A.K.Singh is -

(a) In the process of measurement, numbers are assigned to tasks according to certain rules.

(b) It is the attribute or features of the object which are measured and not the object itself.

(c) Measurement involves the process of quantification, i.e. how much or to what extent that particular attribute is present in a particular object.

1.3.3: Assessment

"Assessment is a process of describing certain traits, processes, programmes in qualitative terms. It has to be done in the context of the objectives of the system of education"

Assessment is any systematic procedure for collecting information that can be used to make inferences about the characteristics of people or objects (AERA, et al.,1999). Assessment should lead to an increased understanding of these characteristics.

Assessment is defined as a methodical way of acquiring, reviewing and using information about someone or something, so as to make improvement where necessary. The term is interpreted in a variety of ways, i.e., educational, psychological, financial, taxation, human resource and so on.

In general, assessment is an ongoing interactive process, in which two parties (assessor and assessee) are involved. The assessor is someone who assesses the performance based on the defined standards, while assessee is someone who is being assessed. The process aims at determining the effectiveness of the overall performance of the assessee and the areas of improvement. The process involves, setting up goals, collecting information (qualitative and quantitative) and using the information for increasing quality.

An assessment of learning is always done with a definite purpose or purposes. Although in school education, all assessment aim ultimately at improving students' learning, but each and every assessment is done to address specific issues of

learning that a teacher faces while teaching in the classroom like, 'Recurring spelling mistakes in Mother Tongue at Class V level', 'Mistakes committed while carrying over is involved in addition of two, three-digit numbers', 'Faulty reading style', 'Incorrect observations of parts of different types of flowers'. To know the exact status of the specific learning issue, the teacher tries to assess the students with specific tools. Thus, it can be said that assessment refers to the process of collection of quantitative and qualitative information on specific issues based on which steps can be taken for facilitating/ enhancing learning.

Types of assessment –

Before moving forward to evaluation, we need to discuss two very important concepts in relation to assessment - Formative and Summative assessment.

(a) Formative Assessment:

What, exactly, is 'formative assessment? The distinction between the summative and formative roles was first proposed by Scriven (1967) in the context of programme evaluation (Black and Wiliam 2003; Wiliam and Thompson 2008). For Scriven, summative evaluation provided information to judge the overall value of an educational programme (as compared with some alternative), whereas the results of formative evaluation were targeted at facilitating programme improvement. It was Bloom (1969) who, using the very same terminology made a similar distinction. But with respect to students, for Bloom (1969) the purpose of formative evaluation was '… to provide feedbacks and correctives at each stage in the teaching-learning process'.

According to Gronlund, formative assessment is used to monitor learning progress during instruction. Its purpose is to provide continuous feedback to both students and teacher concerning learning successes and failures. Formative assessment depends heavily on specially made tests and tools for proper assessment. Some of such techniques and tools are – index cards, one minute essay, hand signals, misconception check, student conference, Socratic teacher etc.

The rational for formative assessment not reflecting on final grade is that students learn effectively by making and learning from mistakes which is difficult to do if their academic performance/final grade may be adversely affected. Since there are no marks, at risk students can be more experimental, challenging preconceived ideas and developing more desirable higher cognitive skills.

(b) Summative Assessment:

The tests, assignments, or projects which are used to determine whether students have learned what they were expected to learn are known as summative assessment.

In other words, what makes an assessment 'summative' is not the design of the test, assignment, or self-evaluation, per se, but the way it is used, i.e., to determine whether and to what degree students have learned the material they have been taught.

Summative assessments are given at the conclusion of a specific instructional period, and therefore they are generally evaluative, rather than diagnostic, i.e., they are more appropriately used to determine learning progress and achievement, evaluate the effectiveness of educational programs, measure progress toward improvement goals, or make course-placement decisions, among other possible applications.

While most summative assessments are given at the conclusion of an instructional period, some summative assessments can still be used diagnostically. For example, the growing availability of student data, made possible by online grading systems and databases, can give teachers access to assessment results from previous years or other courses. By reviewing this data, teachers may be able to identify students more likely to struggle academically in certain subject areas or with certain concepts.

Examples of summative assessment are -

- End of unit or chapter tests,
- Final projects or portfolio,
- Achievement tests,
- Standardized tests.

1.3.4: Evaluation

Evaluation is not a new idea. The act of arriving at a decision does not necessarily imply that an evaluation has been made. "Evaluation is the systematic process of judging the worth, desirability, effectiveness, or adequacy of something according to definite criteria and purposes." (Wilbur Harris, 2009)

"Evaluation is the process of determining to what extent the educational objectives are being realized" (Ralph Tyler). On the other hand, Good Carter said "Evaluation is the process of ascertaining or judging the value of something by careful appraisal".

Patel (1984) defines it as, "Evaluation is any systematic, continuous process of determining

- The extent to which specified educational objectives, previously identified and defined are attained;

- The effectiveness of the learning experiences provided in the classroom;
- How well the goals of education have been accomplished,

Evaluation is a systematic process of collecting, analysing and interpreting information to determine the extent to which pupils are achieving instructional objectives. Perhaps the most extended definition of evaluation has been supplied by C.E. Beeby (1977), who described evaluation as "the systematic collection and interpretation of evidence leading as a part of process to a judgment of value with a view to action."

After discussing all the above definitions we can conclude that the characteristics of evaluation in education are as follows –

(a) Continuous process*:* Evaluation is a continuous process. It leads together with Teaching-learning process.

(b) Comprehensive: Evaluation is comprehensive as it includes everything can be evaluated.

(c) Child-Centered**:** Evaluation is a child-centered process which gives importance to the learning process, not to the teaching process.

(d) Remedial value: Evaluation comments on the result which helps in remedial work, it is not a remedy. Evaluation is remedial in nature.

(e) Cooperative in nature: Evaluation is a cooperative process involving students, teachers parents and peer-groups.

(f) Common practice: Evaluation is a common practice among the proper growth of the child mentally and physically.

Basic steps of evaluation are as follows (Harris, 1968):

- Decide what to evaluate;
- Determine the purpose or role of the thing which is to be evaluated;
- Establish criteria traits and standards;
- Collect observation data;
- Compare the observation data with the criteria standards;
- Drew conclusions relative to the extent to which the observation traits measure up to the criteria standards.

1.3.5: Comparing Concepts of Testing, Measurement, Assessment and Evaluation

Measurement gives the quantitative description, whereas Assessment gives the qualitative description of student's progress. Evaluation is more comprehensive term, which includes both, measurement as well as assessment and goes beyond.

Tests are obviously one systematic method of collecting information and therefore one set of tools for assessment. Reviews of historical records, interviews, and observations are also legitimate assessment techniques and all are maximally useful when they are integrated. Therefore, assessment is a broader, more comprehensive process than testing.

Assessment provides feedback on performance of the student specifying his/ her strengths and areas for improvement which provides insights for taking appropriate steps for improving the learning. Evaluation, based on the collected evidences, determines the standard met and the levels of success or failure in meeting these standards. In both the processes instructional decisions are carefully made by examining evidence of student performance, behaviours toward learning and understanding over a period of time.

Assessment is defined as a process of appraising something or someone, i.e., the act of gauging the quality, value or importance. E**valuation** focuses on making a judgment about values, numbers or performance of someone or something. Assessment is made to identify the level of performance of an individual, whereas evaluation is performed to determine the degree to which goals are attained.

The measurement standards for assessment are absolute, which seeks to achieve the quintessential outcome. As against this, standards of measurement for evaluation are comparative, that makes a distinction between better and worse.

Though the terms assessment and evaluation are often used interchangeably (Cooper, 1999), many writers differentiate between them. Assessment is defined as gathering information or evidence, and evaluation is the use of that information or evidence to make judgments (Snowman, McCown, and Biehler, 2012). Measurement involves assigning numbers or scores to an "attribute or characteristic of a person in such a way that the numbers describe the degree to which the person possesses the attribute" (Nitco and Brookhart, 2011, p. 507). Assigning grade equivalents to scores on a standardized achievement test is an example of measurement.

1.4: Differences among Investigation, Auditing, Monitoring and Evaluation

Before understanding the differences, we need to know what these terms actually represent.

1.4.1: Investigation

Investigation is the action of investigating something or someone i.e., formal or systematic examination or research. According to Cambridge dictionary, the act or the process of examining a crime, a problem, statement is known as investigation. The purpose of investigation is to find or rather discover truth.

Investigation typically involves the following considerations –

- What is your policy for investigations?
- What you want to have investigated?
- What results you would like your investigation program achieve?
- What resources you are willing to devote to support the program?
- What constraints you want to impose on your program?
- How it ranks among other demands on your resources?

To understand the process of investigation, it is necessary to comprehend the distinction between investigative tasks and investigative thinking. Investigative tasks relate to the information gathering processes that feed into investigative thinking and the results. Investigative thinking, on the other hand, is the process of analyzing information and theorizing to develop investigative plans.

1.4.2 : Auditing

Audit is an assessment of the adequacy of management controls to ensure economical and efficient use of resources, the safeguarding of assets; the reliability of financial and other information; the compliance with regulations, rules and established policies; the effectiveness of risk management; and the adequacy of organizational structures, systems and processes.

An audit is a special kind of process of evaluation. It is essentially a quality assurance process that checks actions and procedures against established guidelines and standards. This presupposes that such guidelines and standards exist. For instance, you might have heard of a financial audit. This verifies that an organization

follows established procedures in their financial dealings and is usually performed by specially qualified professionals. However, an audit can concern any kind of activity/ procedure.

In academia, an audit is an educational term for the completion of a course of study for which no assessment of the performance of the student is made nor grade awarded. In this case, 'audit' indicates that the individual merely has received teaching, rather than being evaluated as having achieved a given standard of knowledge of the subject. The term 'audit' is Latin, translating as, 'he/she hears'. In other words, the student has experienced the course, but has not been assessed.

Some students audit a class merely for enjoyment, including purposes of self-enrichment and academic exploration, with no need or desire of academic credit. Sometimes this technique is employed by individuals who wish to take a specific course without the risk of under-performance resulting in a poor or failing grade. This may be helpful when reviewing a long-unstudied subject, or when first beginning or exploring the study of a discipline where one has little experience or confidence.

1.4.3: Monitoring

Monitoring refers to an organized process of overseeing and checking the activities undertaken in a project, to ascertain whether it is capable of achieving the planned results or not. Monitoring is the systematic process of observation and recording on a regular basis to ensure attainment of objective. Monitoring takes into account optimum utilization of resources, to assist the managers in rational decision making.

Monitoring is periodical assessment of the progress of a project towards achievement of its planned activities and results. It starts with the implementation of the first activity, and continues as long as all activities are accomplished. Monitoring needs a systematic planning. It is conducted through some methods and techniques. During monitoring data are collected and analyzed for comparing the actual performance of inputs, processes and results with the set standards.

Monitoring is the regular collection of information about all project activities. It shows whether things are going as planed and helps project managers to identify and solve problems quickly. It keeps track of project inputs and outputs such as:

(a) Activities;

(b) Reporting and documentation;

(c) Finances and budgets;

(d) Supplies and equipments.

Monitoring is an ongoing activity that should be incorporated into everyday project work.

Currently monitoring and evaluation (M & E) a buzz word in educational evaluation field is used to assess the performance of projects, institutions and programmes set up by governments, international organisations and NGOs. Its goal is to improve current and future management of outputs, outcomes and impact. Monitoring is a continuous assessment of programmes based on early detailed information on the progress or delay of the ongoing assessed activities.

1.4.4: Differences among Investigation, Auditing, Monitoring and Evaluation

(a) The purpose of investigation varies from case to case. On the other hand purpose of audit is to determine the true and fair view.

(b) The investigation relates to critical checking of particular records. But audit relates to checking of all books and records.

(c) The investigation may be conducted on behalf of owner and outsiders like investors. Audit is conducted on behalf of owners only. The appointment is made by them.

(d) Investigation works can be completed through cent percent checking. Audit work may be completed through test checking.

(e) The investigation has no time limit. It may relate to many years. The audit of accounts is made for a particular time period.

(f) Monitoring refers to a routine process, that examines the activities and progress of the system, here the education system.

(g) Monitoring is related with observation where as evaluation is making judgment.

(h) Audit is focused on *compliance* while evaluation is more closely linked to learning and development.

(i) Auditing is conducted to verify the extent of truthfulness and fairness of the financial records of an entity, but Investigation is performed to prove certain fact.

(j) Though audit and evaluation differ in the skills and methods used and practiced.

The common ground for monitoring and evaluation is that they are both management tools. For monitoring, data and information collection for tracking progress according

to the terms of reference is gathered periodically which is not the case in evaluations for which the data and information collection is happening during or in view of the evaluation.

Monitoring is a short term assessment and does not take into consideration the outcomes and impact unlike the evaluation process which also assesses the outcomes and sometime longer term impact. This impact assessment occurs sometimes after the end of a project, even though it is rare because of its cost and of the difficulty to determine whether the project is responsible of the observed results.

1.5: Principles of Evaluation

(a) Principle of continuity:

Evaluation is a continuous process, which goes on continuously as long as the student is related to education. Evaluation is an important part of the teaching-learning process. Whatever the learner learns, it should be evaluated daily. Only then the learner could have better command on language.

(b) Principle of comprehensiveness:

By comprehensiveness we mean to assess all aspects of the learner's personality.

(c) Principle of Objectives:

Evaluation should be based on the objectives of education. It should be helpful in finding out where there is a need for redesigning and refraining the learner's behavior.

(d) Principle of Learning Experience:

Evaluation is also related to the learning experiences of the learner. In this process, we don't evaluate only the curricular activities of the learner but his co-curricular activities are also evaluated. Both types of activates are helpful in increasing learner's experiences.

(e) Principle of Broadness:

Evaluation should be broad enough to cover all the aspects of life.

(f) Principle of Application:

During the teaching and learning process the child may learn many things, but it may not be useful in his/her daily life. He/she can't apply it, then it

is useless to find. It can be known through evaluation. Evaluation judges that student is better to apply his knowledge and understanding in different situations in order to succeed in life.

The application based principles are as follows -

- Determining and specifying clearly what is to be evaluated that is the purpose of the evaluation;
- Evaluation techniques should be selected according to the purpose of evaluation;
- Modern comprehensive evaluation often require more than one evaluation techniques;
- Standardizing the tools and techniques as required;
- Considering, the interrelationship between objectives, instruction or learning experiences and evaluation;
- Evaluation is the means to end, not an end itself.

1.6: Areas of Evaluation

Evaluation in schools needs to be profitably exploited for the development of both cognitive and non-cognitive capacities. This warrants adequate emphasis on both the formative and summative forms of evaluation. While formative evaluation is done during the course of instruction with a view to improving students' learning, summative evaluation is done at the end of the academic year to promote students to the next grade. Both these types of evaluation are essential and, therefore, need to be carried out to realize the goal of bringing about qualitative improvement in school education.

The main purpose of formative evaluation is to monitor the instructional process in order to determine whether learning is taking place as planned. The result of such evaluation needs to be used for designing and providing remedial measures for slow learners and enrichment programmes for the brighter ones. On the other hand, summative evaluation needs to be used for classification of placement and prediction of future success apart from promotion to the higher class.

Analyses and interpretations of the evidences collected through both the formative and summative evaluation may be viewed in three different ways; first, by assessing

the students' progress with reference to their own selves (self-referenced), secondly, with reference to the criteria set by their teacher (criterion-referenced), and thirdly, with reference to the progress made by their peer groups (norm-referenced). Evaluation must facilitate all-round development of students.

As stated by NCERT, it will, therefore, be desirable to have school-based system of students' evaluation, both formative and summative, from Classes I-XII. However, at the pre-primary level evaluation will be entirely formative in nature and only at the end of Classes X and XII will the final examinations be conducted by the boards as far as the scholastic areas are concerned. The school-based evaluation, which will be in the form of continuous and comprehensive evaluation, will incorporate not only the scholastic areas but also the co-scholastic areas of students' growth. In Classes X and XII, however, the performance of students in co-scholastic areas will be assessed by the school and conveyed to the board for inclusion in the statement of marks or grades awarded in the scholastic areas of study.

Area of evaluation can be summed up in two broad parts Scholastic and Non-scholastic or Co-scholastic.

1.6.1: Scholastic Evaluation:

In its lucid form scholastic area involves all those which are examined and allotted marks with. Scholastic areas include all those academic activities which are associated with various subjects. The term 'Scholastic' refers to those activities, which are related to intellect or the brain. It is related to the assessment of learners in curricular subjects. It includes assignments, projects, practical, etc. Sometimes, these activities are associated with objectives of cognitive domain i.e. it is expected that students have to achieve objectives of cognitive domain in specific subject areas. In order to understand the scholastic aspects, you have to focus on cognitive domain objectives as well as various subject areas specified at a particular level.

Scholastic evaluation is fundamentally based on cognitive aspects of learner . Although it is difficult to exactly pinpoint the list of learning outcomes, we can classify them according to Taxonomy of Educational Objectives. The following objectives in the cognitive domain have been identified by Bloom and his colleagues (1956).

(a) Knowledge: it includes knowledge of specifics, universals and abstractions in a field.

(b) Comprehension: it focuses on translation, interpretation and extrapolation.

(c) ***Application***: Ability to use a theory, a principle or method to solve a problem involving a new or unfamiliar situation.

(d) ***Analysis:*** Analysis of elements (identifying assumptions, and logical fallacies), relationships and organizational principles.

(e) ***Synthesis:*** it emphasizes production of a unique communication, production of a plan or a set of operations and derivation of a set of abstract relations

(f) ***Evaluation:*** Judgment in terms of internal criteria as well as in terms of external criteria.

During 1990's, Anderson, revised this taxonomy with a view to examining the relevance of the taxonomy of educational objectives developed by Bloom and his colleagues. Bloom uses nouns and Anderson uses verbs. This is important because it affects the way we demonstrate these abilities as things we perform. The Anderson taxonomy introduces the idea of creativity, and puts it at the very top, the highest form of learning. There is some relatively minor reshuffling of taxonomic levels too.

Anderson and Krathwohl's taxonomy (2000) includes the following steps –

(a) ***Remembering***: Retrieving, recalling, or recognizing knowledge from memory.

(b) ***Understanding:*** Constructing meaning from different types of functions be they written or graphic messages activities

(c) ***Applying:*** Carrying out or using a procedure through executing, or implementing.

(d) ***Analyzing:*** Breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose. Mental actions included in this function are differentiating, organizing, and attributing etc.

(e) ***Evaluating:*** Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation.

(e) ***Creating:*** Putting elements together to form a coherent or functional whole reorganizing elements into a new pattern or structure through generating, planning, or producing.

1.6.2: Non-scholastic/ Co-scholastic Evaluation

Before understanding non-scholastic evaluation one has to understand what is education. As J. Krishnamurti stated, "Education is to educate your children to

understand the whole of life and not merely segment of life like the physical, emotional, mental, psychological or spiritual; to have not the compartmental, divided outlook but a whole total integrated outlook on life... to bring out through education a human being who is creative, who is capable, who possesses that intelligence which is not burdened and which is not shaped in any particular direction but is total, who is not belonging to any particular society, caste or religion so that through that education and with that intelligence he arrives at a maturity and, therefore, is capable of making his life, not merely as a technician but as a human being."

Why non-scholastic?

As NCERT document explains "Learning takes place in a holistic manner, as children do not view the world around through boundaries of disciplines, domains or any other compartment. Facilitations to build connections for integration of knowledge through experiences that allow multi-sensory experiential learning emphasizing play, exploration, trying out various things and actually doing different activities makes the entire learning process stimulating and joyful for children to learn more. It has been seen that during elementary stage children learn better while interacting with others or informally sharing what they are learning with others and vice-versa and learn a great deal by doing and through trial and error. So, encouraging them to experience individual or group learning situations that engage them both in 'hands-on' and 'minds-on' thereby learning constantly from their peers, groups and elders facilitated their holistic learning and development."

These areas focus on enhancing the skills of a student in general knowledge, environmental education, physical Education, art, music and dance and computers. To say in a very lucid form, these are activities which are assessed through quizzes, competitions and activities and not with marks.

Co-scholastic evaluation - Evaluation deals with the collection of evidences regarding changes which occur in the learner's behaviour during the teaching learning process. Based on these evidences, interpretation and judgment, the progress of the learner is arrived at and decisions taken. Thus evaluation involves four main sub processes i.e. gathering information, interpretation of information, making judgments and taking decisions. The extent of a child's learning needs to be comprehensive. We need a curriculum in which creativity, innovativeness and development of the whole being mark the growth of learners in addition to learning in the cognitive domain. Development of co-scholastic aspects of the personality such as Life

skills, Attitudes and Values, participation and achievement in Co-Curricular activities as well as Health and Physical Education need to be considered. It is always desirable that while assigning grades in co-scholastic activities a team of two teachers including the class teacher should get together. Assessment in co-scholastic areas needs to be done systematically and methodologically.

Apart from scholastic activities, importance should be given to co-scholastic activities too for student's development. Previously co-curricular activities were not given due importance But now, the psychological, ethical, academic, social, civic, moral, cultural and recreational values of co-curricular activities have been emphasized and so due attention should be given on their effective organization and management.These days lack of proper planning, paucity of various facilities, lack of proper qualified staff, over emphasis on academic programme are some of the hitches which need to be addressed out for ensuring success of these activities. Teachers should make child feel secure in the class environment. They should be familiar with group dynamics if they are to be effective in promoting academic learning as well as social development. A democratic social climate is more conducive to effective learning and group relations than is an autocratic atmosphere.

1.6.3: Continuous and Comprehensive Evaluation

In modern evaluation planning utmost importance is given on Continuous and comprehensive evaluation i.e. CCE. CCE successfully meets two areas of evaluation, scholastic and non-scholastic. In the latest document from NCERT , "Continuous and comprehensive evaluation guidelines" (2019) it is stated that in order to impart quality education and help children develop holistically, it is important to know their learning progress in such a manner through CCE(Continuous and comprehensive evaluation) , that it helps to -

(a) find out the change in a child's learning and development over a period of time;

(b) map these changes through assessment of different curricular areas;

(c) identify the support each child needs to progress individually;

(d) plan teaching-learning situations to suit their needs to enable them to improve their learning;

(e) allow children to assess themselves through reflection, seeking ways to regulate and improve learning by herself/himself;

(f) find out to what extent curricular expectations and learning outcomes have been achieved;

(g) regulate teaching-learning processes in the classroom to bridge the gaps in their learning and development;

(h) provide evidence-based feedback and communicate children's progress to different stakeholders, including parents and guardians and involve them constructively in a child's growth, learning and development;

(i) CCE is very much integral to the process of teaching-learning and against the traditional practice of an activity completely external to teaching-learning. This is not to be carried out separately after the completion of a topic, lesson or a unit, and conducted quarterly, half-yearly or annually.

What does CCE report contain?

As NCERT guideline suggested the following points must be remembered –

- It may be done quarterly in a year; however, the appropriate authority may take the final decision for the same.
- Based on the evidence, i.e., the data collected from multiple sources, over a period of time, with information recorded systematically, the teachers need to analyse and reflect on it to prepare a profile of children's learning progress which should be criterion-referenced, i.e., based on learning outcomes for each curricular area as decided by the curriculum (Annexure II).
- The profile will show the progress on all learning outcomes under different curricular areas for each class and needs to be comprehensive, i.e., reflecting progress on knowledge, skills and dispositions holistically.
- Profile of a child against learning outcomes needs to be prepared for stage-wise curricular areas recommended by National/State Curriculum Frameworks.
- Each learning outcome may be evaluated for its accomplishment as per the following scale—Needs lot of support to reach expected level Can do better with proper support and feedback Performance is as per expected level or age appropriate The scale can be three-point or more, however, it needs to be rationalised as per the developmental level of children.
- There could be children going beyond the expected level in a class. They also need to be identified, encouraged and supported suitably. Such children could be assets to their peers.

- Their performance needs to be acknowledged with special mention in their progress reports and shared with their guardians. Appropriate resources or stategies to help them further their learning may also be suggested.
- The teachers may tick mark the appropriate level which needs to be supported with qualitative descriptions, which are not only evidence-based but also meaningful, specific and reflect what a child can do and what she or he cannot do with suggestions on how she or he may be helped to improve and overcome the existing gaps, with the support of peer-group, elders, teachers, in simple language.
- Progress report of one subject may include some overall remarks, if possible. However, comments, such as slow, poor, dull should be avoided.
- It should not reflect any comparisons with other children but the focus needs to be on comparing the performance of a child with her or his previous performance.
- No scores will be included in evaluation, therefore, there is no question of grading or awarding any aggregate score in a curricular area or overall score or grade.
- Separate progress report cards may be maintained for children at a particular stage, i.e., one progress report card for a child at the primary stage and a separate one at the upper primary stage.
- Stage-wise report cards can also help trace the learning progression within and across stages.

1.7: The Evolution of Functions of Evaluation: (a) Measurement/ Comparison, Transparency/ Accountability, (b) Understanding/ Learning/ Decision Making/ Positive Accountability

Evaluation has acquired in recent years the status of independent science in many countries and has recently been object of increased interest from the point of view of different disciplines. From the philosophical roots of positivism, constructivism and realism, different schools of thought have led the development of evaluation: on one side positivist theorists aimed to discover regularities and laws for social sciences as it is done for natural ones, opposed to authors that deny the possibility

of objective knowledge and assert that the world can be understood only through theorization of the observer (constructivism); and on the other hand the recognition that programs are embedded in multi-layered societies which should be taken into account for the different ways in which they affect different context.

One of the major controversies in evaluation since its dawn and ongoing challenge that will determine the future of evaluation is the so-called quantitative/qualitative debate.

1.7.1: Measurement/ Comparison, Transparency/ Accountability

What is the function of evaluation?

The answer to this is not fixed and has rich history behind it too. Evaluation includes putting value to something. Now what is of value ? The idea of value is complex and highly loaded term socially and culturally. Therefore, function of evaluation also varied from society to society and from age to age.

At first evaluation focused on educational assessment conducted with a narrow outlook. With time evaluation aimed for standardized process and incorporated certain values as reliability, transparency, accountability etc. While progressing through the time evaluation functions included the following -

(a) To discover potential abilities and aptitudes among the learners;

(b) To predict the future success of the children;

(c) To help the child in selecting the right;

(d) To promote students to next higher class;

(e) To appraise the supervisory practices;

(f) To have appropriate placement;

(g) To draw comparative statement on the performance of different children;

(h) To have sound planning.

As we can see above, from measurement and comparison the function moved towards accountability. Accountability has had a particular importance in discussions of responsible government and in public administration generally. Discussions of accountability often are contained in broader analyses of the concept of responsibility. The primary purpose of evaluation in education is accountability. The purposes operate at multiple levels in education from individual learning to bounded, focused

interventions to whole organizations, such as schools or colleges. Accountability is based primarily on summative evaluations, that is, evaluations of fully formed evaluands and is often used for making selection and resource allocation decisions.

As accountability became the operative form of evaluation in modern era lets understand the term. Accountability means taking responsibility and ownership for decisions, actions and results. A valued accountability is reached when –

(a) Accountable for how and what results are achieved Recognizes and admits mistakes and take action to correct;

(b) Acknowledges problems and provides solutions;

(c) Articulates, defines and sets clear expectations for self and others as appropriate;

(d) Recognizes the interdependency of decisions and actions;

(e) Identifies and elevates issues to appropriate individual;

(f) Reacts appropriately for the magnitude of the issue;

(g) Acts as a good steward of resources;

(h) Uses time effectively and efficiently;

(i) Monitors process, progress and results for self and/ or others;

(j) Gives honest and timely feedback.

1.7.2: Understanding/ Learning/ Decision Making/ Positive Accountability

Today's evaluators can choose from a wealth of approaches present in evaluation. Evaluation is no longer focused on programme goals, but can be framed around broader and more human aspects such as quality improvement, utilization of findings and policy incorporation etc. Increased emphasis on government programme accountability is a trend now. There is a movement for organizations to be lean, efficient, global and more competitive. Evaluation became commonly used not only as part of government mandates, but also to improve program effectiveness, enhance organizational learning, and inform allocation decisions in a wide variety of both public and private organizations. A number of Foundations created internal evaluation unit to provide support for evaluation activities.

Present Increase in sustained interest in participatory, collaborative and learning oriented evaluations is a global trend. The evolved function of evaluation projects the following:

(a) A planned evaluation helps a teacher in deciding and developing the ways, methods, techniques of teaching.

(b) Helps to formulate and reformulate suitable and realistic objectives of instruction.

(c) Helps to improve instruction and to plan appropriate and adequate techniques of instruction.

(d) Helps in the improvement of curriculum.

(e) To assess different educational practices

(f) Ascertain how far could learning objectives be achieved

(g) To improve instructional procedures and quality of teachers

(h) To plan appropriate and adequate learning strategies .

(i) To motivate, to direct, to inspire and to involve the students in learning.

(j) To reward their learning and thus to motivate them towards study.

Evaluation for decision-making:

Decision-making is a central responsibility of managers and leaders. It requires defining the issue or the problem and identifying the factors related to it. It helps to create a clear understanding of what needs to be decided and can influence the choice between alternatives.

Evaluation is the final step of the formal decision process. Evaluating outcomes may help the decision maker learn lessons that will improve her decision-making abilities. Decision makers access internal and external types of information, which are relevant to decision making within the Department. These internal and external sources include data-driven reports, advice and analysis provided at committees, and pertinent departmental or government documents. It is clear that decision makers are aware of the types of information available but may not readily make use of the guidance provided by directorates with expert knowledge and advice:

(a) Decision makers should identify the many alternative choices they face before beginning to conduct analysis for a decision.

(b) A decision tree is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event

outcomes and resource costs. A decision tree can help lay out the alternatives and determine the best ones to consider.

(c) When dealing with information in decision analysis, there are often biases and errors in judgment, such as the fact that people pay more attention to information that is easily available.

(d) It is important for a decision maker to receive plenty of input from others to avoid any bias.

(e) There are a few tools available to decision makers that can be used to help quantify the potential alternatives to and outcomes of a decision. These tools include a simple pro-and-con analysis, an influence diagram, and a decision tree.

(f) A decision tree is used to lay out the alternatives and then assign a utility, or a relative value of importance, to a particular alternative.

(g) Another tool that decision makers can use to quantify a decision is an influence diagram, which is a compact graphical and mathematical representation of a decision situation.

History takes the turn and evaluation reaches the highest of accountability through positive accountability. Here the behaviour expected are -

(a) Plans proactively and seeks out appropriate resources to achieve results;

(b) Admits mistakes, takes actions to correct and helps others learn from the mistake;

(c) Takes collective responsibility for total organization's successes and failures within the scope of influence;

(d) Sets stretch target for self and/ or others;

(e) Shares information freely with supervisor, peers and direct reports;

(f) Handles stress and can be counted on to hold things together during tough times;

(g) Recommends resource saving ideas with budget impact;

(h) Challenges self and others to increase results, delivering on or before committed deadline;

Therefore, Positive Accountability is also accountability, still one person working with another, but it happens before. It's not dealing with something because something

got messed up, it's dealing with it from the idea stage to give it power to be accomplished.

1.8: Let us Sum up

- Measurement refers to the process by which the attributes or dimensions of some object or phenomena are quantified.
- Assessment is a process by which information is obtained relative to some known objective or goal.
- Evaluation refers to the value judgments made on the phenomenon, taking into consideration the quantitative and/or the qualitative information collected on it over a particular period of time.
- In the latest document from NCERT , "Continuous and comprehensive evaluation guidelines" (2019) it is stated that in order to impart quality education and help children develop holistically, it is important to know their learning progress in such a manner through CCE(Continuous and comprehensive evaluation).
- Primarily evaluation is mainly focused on educational assessment conducted with a narrow outlook. With time evaluation aimed for standardized process and incorporated certain values as reliability, transparency, accountability etc.
- Present Increase in sustained interest in participatory, collaborative and learning oriented evaluations is a global trend.
- Evaluation is the final step of the formal decision process. Evaluating outcomes may help the decision maker learn lessons that will improve her decision-making abilities. Decision makers access internal and external types of information, which are relevant to decision making within the Department.

1.9: Unit end exercises

A. Answer the following short questions within 50 words:

a. Define evaluation.

b. Differentiate between assessment and evaluation.

c. Write two characteristics of measurement .

d. What is auditing?

e. What is principle of broadness?

f. What is accountability in evaluation?

g. What is scholastic evaluation?

h. Name two tools used in educational evaluation.

i. State the difference between monitoring and evaluation.

j. What is principle of objectivity?

B. Answer the following questions within 150 words each:

a. Write the characteristics of evaluation.

b. Compare formative and summative assessment.

c. State the functions of evaluation.

d. Write a short note on CCE.

e. Write a short note on modern concept of evaluation.

7.10: References

American Educational Research Association, American Psychological Association, and National Council on Measurement and Education. (1999). Standards for educational and psychological testing. Washington, DC: American Educational Research Association

Assessment for learning.Centre for distance education. Bharathidaan University. B.Ed. Retrieved

on 6th December , 2019 from monitoring in http://www.bdu.ac.in/cde/docs/ebooks/B-Ed/I/ASSESSMENT%20FOR%20LEARNING.pdf

Brown,A.A.(2017). Evaluation, inspection, audit: is there a difference?. retrieved on 8th

December , 2019 from https://www.linkedin.com/pulse/itsbird-its-plane-distinguishing-evaluations-from-other-brown

Continuous and comprehensive evaluation(CCE). Assessment of learning and use of ICTs. Retrieved on 6th December , 2019 from

http://egyankosh.ac.in/bitstream/123456789/8515/1/Unit-11.pdf

Continuous and comprehensive evaluation guidelines(2019).NCERT. New Delhi. Retrieved on 8th December , 2019 from http://www.ncert.nic.in/announcements/pdf/CCE-Guidelines.pdf

Diploma in elementary education (D.El.Ed.). Assessment and evaluation and related issues . Unit 6. NIOS. Retrieved on 8th December,2019 from

http://mooc.nios.ac.in/mooc/pluginfile.php?file=/11789/course/summary/UNIT%206%20ASSESSMENT%20AND%20EVALUATION.pdf

Formative assessment: A critical review. Assessment in education principles policy and practices.(2011). On 9th December , 2019 From https://www.researchgate.net/publication/228836856_Formative_assessment_A_critical_reviw

Frey,B.B. (2017). Modern classroom assessment. SAGE publications of India Pvt Ltd. New Delhi. AdvantEdge Edition.

Frechtling, J.A. (1991). Performance assessment: Moonstruck or the real thing? Educational Measurement: Issues and Practices, 10(4), 23-25.

Gronlund, N.E., & Linn, R. (1990). Measurement and evaluation in teaching (6th Edition). Macmillan, New York

Harris,W.(1968). The nature and function of educational evaluations, Peabody Journal of Education, 46:2, 95-99, DOI: 10.1080/01619566809537594

Measurement and evaluation in education.www.academia.edu. retrieved on 7th December, 2019 From https://www.academia.edu/34793647/Measurement_and_Evaluation_in_Education_PDE_105_UNIT_ONE_THE_CONCEPTS_OF_TEST_MEASUREMENT_ASSESSMENT_AND_EVALUATION_IN_EDUCATION

Physics catalyst. What is evaluation in education. Retrieved on 8th December, 2019 from https://physicscatalyst.com/graduation/evaluation-in-education/

Singh, A.K.(2008). Tests, measurements and research methods in behavioural sciences. Revised print. First Print .Bharati Bhawan.1996.New Delhi.

Unit - 2 □ Scope of Evaluation

Structure

2.1: Introduction

Evaluation is a broad and continuous effort to enquire into the effects of utilising content and process to meet clearly the defined goals. It is a process of delineating, obtaining and providing useful information for judging decision alternatives. Therefore, evaluation which is both qualitative and quantitative process demands an expertise in selecting or constructing tools of data collection in administering the tests and in analysing and interpreting that data. It goes side by side with planning of educational programme, teacher's instruction, student's learning, outcomes of behaviour and the overall educational progress. Evaluation is concerned with assessing the effectiveness of teaching, teaching strategies, methods and techniques. It provides feedback to the teachers about their teaching and the learners about their learning. But there may be problems or gaps in this process of evaluation. Then how do we solve such problems? This sounds like an easy question. We solve problems every day, whether conscious of it or not, by understanding the problem, applying necessary inputs, outputs, tools, techniques, and solving it by correct decisions to arrive at the destination.

So evaluation takes into five key-elements: (a) Problem-solving and Decision-making, (b) Positive Accountability and Excellence in Education, (c) Knowledge Construction and Capacity Building of Learners, (d) Organizational Learning and Changes and Strategic Planning and (e) Advocacy and Communication.

Therefore, evaluation is not baseless judgement rather judgement is based on evidence analysed and interpreted systematically. Moreover, educational regulation need not stop at making statement "Effective'' or "Ineffective", 'Good' or 'bad'. Evaluation is incomplete unless it leads to policy orientation making, decision making and actions related to improvement of the system.

2.2: Objectives:

(a) To understand the problem-solving process in evaluation;

(b) To understand about Decision-making through evaluation;

(c) To know about the Positive Accountability and Excellence in Education;

(d) To understand about Knowledge Construction and Capacity Building of Learners;

(e) To understand Organizational Learning and Change, and Strategic Planning;

(f) To understand Advocacy and Communication.

2.3: Problem-solving and Decision-making

2.3.1: The Problem Solving Process in Evaluation:

Problem-solving is the process of identifying problems and their causes, gathering information, developing and evaluating possible solutions, and implementing an action or strategy based upon the analysis in order to achieve a desired goal or outcome. It is a cognitive, mental process to get a new perspective. The best way to handle a problem is to view the problem as an opportunity for improvement. It is helpful to have a structure to follow to make sure that nothing is overlooked or goes un-interpreted. The problem-solving process consists of a sequence of steps when correctly followed most often leads to a successful solution.

(a) Definition of the problem:

The best way to define the problem is to write down a concise statement which summarizes the problem, and then to write down where one wants to be after the problem has been resolved. Diagnose the situation so that the focus is on the problem, not just its symptoms. Helpful problem-solving techniques include using flowcharts to identify the expected steps of a process and cause-and-effect diagrams to define and analyse the root causes. The key problem-solving steps are to support the involvement of interested parties, the use of factual information, comparison of expectations to reality and a focus on root causes of a problem:

- Reviewing and documenting how processes currently work (i.e., who does what, with what information, using what tools, communicating with what organizations and individuals, in what time frame, using what format).
- Evaluating the possible impact of new tools and revised policies in the development of "what should be" the model.

(b) Generate alternative solutions:

Analysis provides a formal framework for identifying the potential risks, and helps to work out a strategy for controlling them. It may be necessary to look beyond the obvious, surface situation, to stretch the imagination and reach for more creative options, seek other perspectives and be flexible. Postpone the selection of one solution until several problem-solving alternatives have been proposed. Considering multiple alternatives can significantly enhance the value of ones ideal solution. Once a person have decided on the "what should be" model, this target standard becomes the basis for developing a road map for investigating alternatives. Brainstorming and team problem-solving techniques are both useful tools in this stage of problem solving.

Many alternative solutions to the problem should be generated before final evaluation. A common mistake in problem solving is that alternatives are evaluated as they are proposed, so the first acceptable solution is chosen, even if it's not the best fit. If we focus on trying to get the results we want, we miss the potential for learning something new that will allow for real improvement in the problem-solving process.

(c) Evaluate and select an alternative:

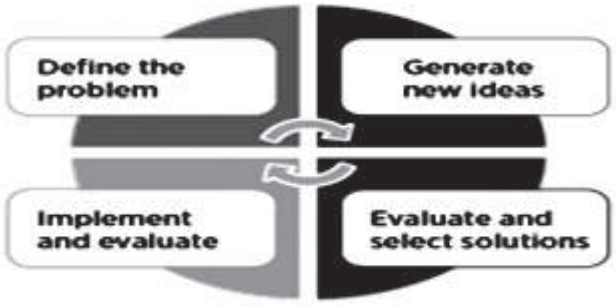
Skilled problem solvers use a series of considerations when selecting the best alternative. They consider the extent to which:

- A particular alternative will solve the problem without causing other unanticipated problems
- All the individuals involved will accept the alternative
- Implementation of the alternative is likely
- The alternative fits within the organizational constraints

(d) Implement and follow up on the solution:

Leaders may be called upon to direct others to implement the solution, "sell" the solution, or facilitate the implementation with the help of others. Involving others in the implementation is an effective way to gain buy-in and support and minimize resistance to subsequent changes.

Regardless of how the solution is rolled out, feedback channels should be built into the implementation. This allows for continuous monitoring and testing of actual events against expectations. Problem solving, and the techniques used to gain clarity, are most effective if the solution remains in place and is updated to respond to future changes.



Problem Solving Chart

Cause & effect diagrams can be useful for making sure that all factors relating to a problem have been considered. SWOT Analysis helps to work out a successful strategy in a competitive environment. By using these tools and techniques you can

ensure that you carry out the best analysis possible. These tools give you a starting point and a road map in the problem solving process.

2.3.2: Decision Making Strategies in Evaluation

Decision-making is a process of identifying and evaluating choices. One can make numerous decisions every day and those decisions may range from routine, every-day types of decisions to those decisions which will have far reaching impacts. The types of decisions one make are routine, impulsive, and reasoned. Deciding the mode of transport to go for class in college is a routine decision; deciding to do or buy something at the last minute is considered an impulsive decision; and selecting the correct career, hopefully, a reasoned decision. Decision making has much in common with problem solving. In problem solving, one identifies and evaluates solution paths; in decision making one makes a similar discovery and evaluation of alternatives. The crux of decision making, then, is the careful identification and evaluation of alternatives. As one weigh alternatives, use the following suggestions like consider the outcome, each is likely to produce, in both the short term and the long term, compare alternatives based on how easily one can accomplish each, evaluate possible negative side-effects each may produce or the complications that may crop up over a longer time period, consider the risk involved in each and also be creative and original.

Predict the consequences of actions, formulate possible solutions – identify a wide range of possible solutions, try to think of all possible solutions, be creative and to consider similar problems and how it can be solved.

Evaluate possible solutions –weigh the advantages and disadvantages of each solution. Think through each solution and consider how, when, and where one could accomplish each by considering both immediate and long-term results. Moreover, mapping the solutions can be helpful at this stage. While the decision over the selection of an appropriate solution, 3 factors like compatibility with the priorities, amount of risk and practicality brainstorm about all possibilities and implications that are to be regarded.

During the final stage, *evaluation and decision making*, team reconvenes to review the collected data and to determine whether the student has made progress. If *yes*, the team decides whether the teacher needs to continue the intervention. If *no*, the

team determines whether the strategy should be continued or modified, whether a new strategy should be tried, or whether the student should be referred for special education. As they review the information and they arrive to a decision about the student's progress.

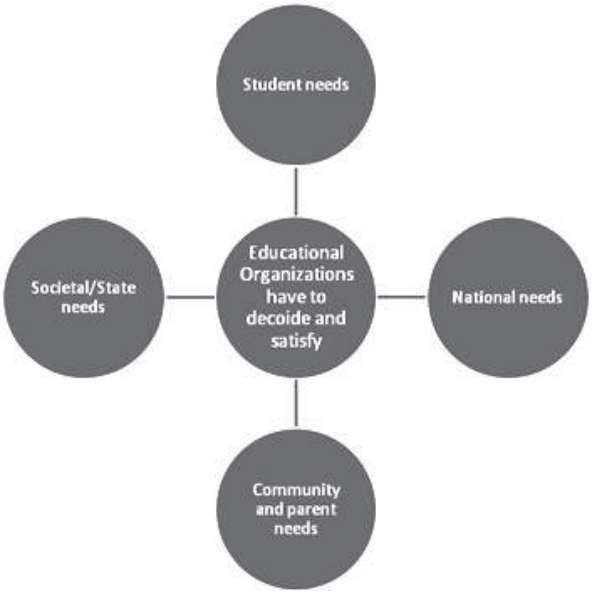
For the restructuring of the evaluative system a major re-design of the ways is needed at this hour. Decision making takes on very different forms as new roles of the various stakeholders and relationships differ from those traditionally found.

In the traditional model, students were isolated from operational and policy decisions. In the new shared decision-making model, students, especially older students, may influence policies by providing advice and input through participation in decision making especially evaluation procedures.

Close to students are parents who, in yesterday's model, were mostly uninformed and underutilized resources and, like students, were isolated from decision-making and the operations of the system. Training parents to develop understanding and skills relative to the education system's purposes, and to act as colleagues in planning and decision making as pupil's achievement is vital.Moreover, conditions are created to have interactions to provide their sharing of ideas and concerns during evaluation measures.

Through the setting of Board of Examiners and Head Examiners a new mode will be characterized by inviting participation and serving for uniform treatment and encouraging bottom up change. Their collective wisdom and shared decisions have the possibility to strengthen the selection of strategies that hold the highest potential for student success.

There may be debates in the educational reforms and challenges. **Education** came into the Concurrent List way back in 1976 in the Constitution of India.Education is in the Concurrent List as solutions are needed quickly. **Education** is a subject which touches every person, every family and every institution in this country. And as it is such a sensitive subject, any reform of the **education** process must be handled with great sensitivity and care. The role of the government need to be supportive for the development and spread of effective new educational strategies. There may be risky investments but the government program is to ensure transparency and accountability to ensure compliance to create a culture of entrepreneurship and innovation that fundamentally transforms for the students to achieve, eliminate barriers and develop in the next generation.



Needs and Decision-making in Educational Organisations

The benefits of the processes described can be considered in three major categories:

- General
- Organizational
- Individual

Concept - One of the primary benefits of using this process is that it is an effective way of managing change. Because of rapid and unpredictable change is the norm today, it is important that sufficient resources be available to manage it. In addition, the process can be used by individuals and organizations to solve a wide variety of problems. Since there is continuous diversity in the types of problems to be solved, it is important to have a generalizable, but flexible, process to resolve them. If it were necessary to have a unique problem-solving technique for every problem, it would be easy to be quickly overwhelmed before even getting started. While it may be impossible to have a single process that is applicable to all problems or decisions by all individuals, it is important to have a generalizable, though flexible, process that individuals believe fits with their unique styles and that can be used to capitalize on strengths and support weaknesses.

A second general advantage is that the process provides for the generation of both objective and subjective criteria used to select and evaluate alternatives. That is, reason and logic are balanced by creativity and divergence throughout the process.

Duemler and Mayer (1988) demonstrated that when individuals used both types of techniques they were more successful in their problem solving. This provides the individual and/or group with increased confidence that a correct decision is being made even if reaching that decision requires a little extra time.

A related benefit is that use of the process allows decision maker(s)/problem solver(s) to better sell the selected solutions to superiors and/or subordinates since the important individual differences likely to be valued by these individuals have already been considered. Additionally, the process has a built-in step to consider what could go wrong if particular solutions are selected. However, this step is taken only after creative and original alternatives have been considered and does not limit alternatives to those already proven successful.

Work group or organization- One of the primary benefits of using this process in a work group or organization is that it allows individuals within the group to understand the problem thoroughly before considering alternatives. Too often, problem-solving discussions focus on the debate of preselected alternatives. At the outset of the discussion (or perhaps even before), participants select positions as to which alternative is better. The result is a separation into camps of winners and losers. Use of this process takes energy normally spent on arguing for a specific solution and re-channels that energy into a collective search for an acceptable solution.

A related benefit is that a thorough discussion prior to considering alternatives can actually make problem solving less complicated and successful results more likely to be achieved. Quite often group discussion is not about solutions, but about assumptions of facts, criteria, and important values that remain unstated throughout the deliberation. By clearly stating these before alternatives/solutions are discussed, the actual selection of alternatives is often easier. Frequently a lack of careful analysis by groups attempting to solve a problem leads to selecting a solution on some criteria other than "does it solve the problem." Sometimes a situation of "group think" occurs where one alternative is presented, and everyone simply agrees that it is best without critical analysis. This can lead the organization to make decisions based on power relationships for the achievement of goals.

Finally, use of a problem-solving process enhances the development of unity within the work group or organization. If everyone is using the same process of problem solving, then unity or consensus is much easier to achieve. Unified action generally produces better results than non-unified action (Kolstoe, 1985). If the selected solution is incorrect, then problems can be identified quickly and corrections can be made. On the other hand, if all participants are not working toward a common

goal or if some members are actually trying to work against group goals, then energy that should be focused on solving the problem is dissipated; the proper solution may not be identified for some time, if at all.

Individual **-** One of the primary benefits to individuals in using this process is that the strengths and weaknesses of the individual can be identified and used or compensated for when making a decision. Everyone has strong and weak points that result from preferences in how a problem is viewed or considered.

When participating in the problem-solving process in a group, two additional advantages occur. First, individuals can learn to value alternative viewpoints or preferences by considering differences in others as strengths rather than as "wrong" or of less value. It is only natural that we consider our own approaches or preferences as more correct than other approaches. However, as is evident by the above discussion of the steps in problem solving, all preferences and a variety of techniques must be used if the best solutions are to be developed and implemented. In this era of rapid change, it is vital that we consider all preferences, whether described in personality or otherwise, as being equally appropriate and valuable.

Additionally, the development of an individual's decision-making powers can be enhanced by advancing through the process with others in a group situation. Whimby and Lochhead (1982) have demonstrated that verbalizing one's thinking process while someone else listens and critiques that process (the think-aloud technique) is one of the most valuable ways to improve problem solving and decision making. When individuals are active and participate in a group-based, problem-solving process, it can lead to the development of the skills required to make better independent decisions.

2.4: Positive Accountability and Excellence in Education

2.4.1: General Introduction

Evaluation is the process of gathering and interpreting evidence on changes in the behaviour of all students as they prefer through the education system. Evaluation is used as a basis of improving social relations and mobilising public opinions. It is required to make education more purposive for individual point of view. It should not be taken as an end in itself rather should be used for other higher aims. It helps in placement for special instructional programs, selection of career and courses, grading, diagnosing for suitable remedial measures, prediction to discover potential abilities and aptitude among learners, instructing appropriate and adequate

learning strategies, improving the progressive curriculum also for the guidance and development and for decision making in administration. Evaluation with an ideological agenda like democratisation or empowerment are intended to address most directly the interests of those at the margins of society.

To assure quality we should assess the functioning, performance and standards of an institution. This has to be done keeping in mind its mission, goals and objectives. This is known as test accountability of an institution.

To serve the accountability is another well-known function of educational evaluation, a function of considerable purchase at this time around the world. The usefulness of evaluation as accountability in improving education, however is not always clear, and simple solutions such as representing students' achievement as a single indicator of the accountability or basing accountability on external evaluation alone do not seem to work since the demand for accountability is not going to vanish in the near future but rather may continue to gain momentum in many countries, refinements of approaches to educational evaluation for accountability are needed.

In particular the stakeholders of education and external evaluators alike, instead of resisting the demand for accountability, may beneficially become active participants in accountability evaluation. Educational systems will have to develop wider perspectives on evaluation criteria for accountability. Educational institutions and teachers will have to realise that instead of resisting the demand for accountability they will have to become active participants by developing their own evaluation of portfolios for a dialogue with external evaluation.

2.4.2: Positive Accountability of Evaluation

Accountability means holding everyone with responsibilities to high standards of performance. It means being answerable for one's action, the main purpose of the system of positive accountability is to ensure minimum performance and thus help in enhancing the quality of education. The accountability of any educational institution can be discussed in terms of academic, administrative, and financial matters. However, there has been a debate on the manner in which the assessment of quality vis-à-vis accountability is to be conducted-through internal mechanism (self-management) or by external agency.

When one look to **school to** invest in classroom resources and support teachers-set clear expectations, help teachers develop their reflective capability, provide meaningful support that is tailored to the teacher's needs, and then provide a fair,

multi-faceted review of how well teachers are serving the educational needs of our students. One need to supervise the improvements in schools that might fall short year after year.

One need to look to the ***principals*** to establish a safe, enhancing school culture with a coherent and inspiring vision for learning and growth. After all principals do foster excellence by recognizing efficient teachers.

The *teachers* who help students learn new ways to engage students, master their content matter, seek advice and accept critical feedback.

The ***parents*** who are the partner in their child's education- make learning a priority at home, advocate for their child, and understand how they can help make things better in their children's school classrooms.

Assessment, traditionally used by individual teachers to monitor student learning and to provide a basis for assigning grades, has always been a critical component of the education system. Over the years, however, the character of educational assessment has changed. The role of assessment continued to evolve, as policy makers turned to assessment as a way to improve education. Standards-based reforms of the 1990s gave assessment increasing visibility. Assessments generate information and depending on the nature and use of the information obtained, it can play multiple roles in education. Accountability involves using some of these information to generate incentives to validate or change the behaviours of the students and educators. Taken together, assessments and accountability policy constitute a third channel through which education-reform ideas may flow. Various types of assessments— formative classroom assessment, classroom tests, state and local tests, college entrance and placement practices, tests for teacher certification—all interact with other elements in the education system.

Though we need tests, that need to be fair, reflective of high standards, and done through moderation. Tests should be used to help identify a child's strengths and weaknesses, so that learning can improve for that child. The parents and teachers need to develop the critical-thinking skills. We need to be accountable for the quality of education.

We need fair, balanced and regular teacher evaluations that allow parents to trust that their child has a teacher who is passionate about his or her engagement, knows how to engage students with creative lessons, and connect with students as individual learners. Test results that show how students are learning should be *one measure* of a teacher's overall performance, along with classroom observation, student surveys,

and other indicators. Perhaps the most extended definition of evaluation has been supplied by C.E. Beeby (1977), who described evaluation as ***"the systematic collection and interpretation of evidence leading as a part of process to a judgement of value with a view to action."***

The pervasiveness of accountability, political importance, and potential influence of assessment on student learning make it a potent tool for change. Compared to other vehicles for change, such as long-term professional development, assessment is an attractive strategy to policy makers, since tests are relatively inexpensive to construct and administer. Moreover, assessment can be externally mandated and implemented rapidly, yielding visible results.

As the standards movement extended beyond standards designed by the educational community for use by educators to a vehicle for motivating school change, few educational institutions began designing assessments to measure student learning against those standards and to develop high-quality assessments to measure performance on high standards for all students, including those with learning and physical disabilities so as to enhance thestudent performances

The reporting of test results represents the simplest form of accountability. Stronger incentives for educational change are provided by accountability mechanisms that use information from assessments to make consequential decisions about students, teachers, or schools. Assessment and accountability policies can provide clear direction for teachers and principals in terms of student outcomes and can become a positive impetus for instructional and curricular changes.

When assessments are aligned with learning goals, accountability systems can motivate classroom instruction to focus on those outcomes. (Stecher, Barron, Kaganoff, and Goodwin, 1998).

Assessments can drive change at different levels of the system, for example, by informing the public about the overall state of achievement or by informing those who make decisions about teacher certification, allocation of resources, or rewards and sanctions for schools.

Classroom assessments designed or selected by teachers are critical components of education assessment and the students comprehend from the formal assessment oftheir own classroom experiences. Teachers use assessment to inform instructional decisions, motivate and reward students, assign grades, and report student progress to families.

Teachers with interactions with colleagues, assessment materials accompanying textbooks, courses in pre-service and professional development programs have their familiarity with standardized assessments. They may adopt a variety of forms of assessment, from multiple-choice tests to writing assignments to performance-based assessments guided by scoring rubrics. Teachers may use student portfolios to document student learning over time, which, in the case of technology, may often take the form of student-created projects.

Few school districts may use their own or commercially developed tests to measure their progress against national norms, to evaluate their own programs, or to monitor the level of individual student learning for placement purposes.

In addition to national level tests, schools may use a variety of other tests, which interact with decisions made about curriculum and instruction. Tests that measure what students know overall are different from those designed to measure what students have learned within a particular course or time interval, placing different demands on what teachers are expected to teach. From test to test, the conditions and the nature of the content tested may vary widely. For example, one test may allow the use of calculators, another may not; one may emphasize mastery of science terms, another may emphasize understanding of science concepts. Some assessment reports may disaggregate the data, highlighting changes in performance for students of different ethnicities, socio-economic backgrounds, or cultures, leading to greater focus on students within those groups.

The interpretation and consequent influence of assessment as a measure of educational improvement is of paramount importance. On the one hand, such assessments can set levels of acceptable performance for all students and provide benchmarks against which teachers and students can view their own educational accomplishments. The assessments may motivate educators to change their practices and decision makers to modify their policies. If politicians and educators believe that full alignment of content, instruction, and assessment will positively affect student outcomes, they may invest considerable effort in trying to ensure that such alignment is in place across all levels of the education system.

On the other hand, researchers and others have raised concerns about using large-scale assessments to monitor student and school performance. Large-scale assessments may not provide valid and comparable measures of performance for all students.

A key objective in aligning content and assessment is to help to shape instruction and to raise expectations for student performance. Questions arise, however, about

whether teachers are focusing on teaching the underlying standards-based content or simply teaching to the test. Some argue that high-stakes tests tend to narrow the curriculum. That is, teachers reduce instructional time devoted to problem-solving and open-ended investigations, and restrict their expectations for student learning to the particular knowledge and skills included on the test.

Assessments do more than simply provide information about achievement, they also specify expectations for student knowledge and performance, providing what teachers should teach and students should learn. The development and use of assessments are aimed to the standards to support teaching, to drive educational improvement, and to support accountability that are attributable to nationally developed standards.

If nationally developed standards are influencing assessment policies and practices, assessments would be aligned with learning outcomes embodied in the standards. In particular, if state assessments and standards are aligned with the nationally developed standards, assessment at all levels would include problem solving and inquiry in addition to other skills and knowledge. Teachers would use classroom assessment results to inform instructional decisions and to provide feedback to students about their learning. Teachers, administrators, and policy makers would employ multiple sources of evidence regarding what a student knows and is able to do, as is called for in the standards, rather than relying on a single source.

Developers of student assessments would be familiar with nationally developed assessment and content standards and create assessment materials that reflect the standards by having appropriate items, clear examples of the kinds of performance that students Bottom of Form

are expected to demonstrate, criteria by which these performances are evaluated, and reports that inform instruction as well as measure achievement. Assessment results would be reported in language accessible to parents and other stakeholders, helping them to understand what the tests measure and how results should be interpreted.

States and districts would have a comprehensive plan for administering the array of assessments they use with students, and the plan would enable teachers to pursue the vision of the standards as well as prepare students to take those assessments that are high stakes. Incentives linked to accountability would encourage standards-based reforms, with policies in place to ensure that schools and teachers have

standards-based professional development opportunities, instructional materials, and appropriate resources to enhance their efforts to raise performance levels of their students.

The importance of evaluation to good government is incalculable. Without them government is at high stakes in moving ahead with large programs. Both accountability and knowledge evaluation draw on program data and other information available only within agencies but for evaluators they need to collect and use that information and the agencies must allow them access to it. Also if relevant actions are to be taken as a result of policy or program problems found by evaluators, it is often the agency managers who must take them. In other words agencies need to possess an evaluative and self-evaluative (capability and culture) if accountability and knowledge evaluations are to be meaningful. But agencies need evaluative capability for their own purposes as in the system of PPBS. Planning, Programming, and Budgeting System (PPBS) is in effect an integration of a number of techniques in a planning and budgeting process for identifying, costing and assigning a complexity of resources for establishing priorities and strategies in a major program and for forecasting costs, expenditure and achievements within the immediate financial year or over a longer period.

In order to guide practitioners through six distinct evaluation steps:

(a) Engage stakeholders

(b) Describe the programs

(c) Focus the evaluation design

(d) Gather credible evidence

(e) Justify conclusion

(f) Use and share lessons learned Top of Form

CIPP evaluation model is a Program evaluation model which was developed by Daniel Stufflebeam and colleagues in the 1960s. CIPP is an evaluation model that requires the evaluation of **context**, **input**, **process** and **product** in judging a programme's value. CIPP is a decision-focused approach to evaluation and emphasises the systematic provision of information for programme management and operation.

The CIPP framework was developed as a means of linking evaluation with programme decision-making. It aims to provide an analytic and rational basis for programme decision-making, based on a cycle of planning, structuring, implementing and reviewing and revising decisions, each examined through a different aspect of evaluation. The CIPP model is an attempt to make evaluation directly relevant to the needs of decision-makers during the phases and activities of a programme. Stufflebeam's CIPP evaluation model is recommended as a framework to systematically guide the conception, design, implementation, and assessment of service-learning projects, and provide feedback and judgment of the project's effectiveness for continuous improvement.

2.4.3 Excellence in Education through Evaluation

Need and Importance of Evaluation:

Now a days, education has multi-fold programmes and activities to inculcate in students a sense of common values, integrated approach, group feelings and community interrelationship leading to national integration and knowledge to adjust in different situations. Evaluation in education assesses the effectiveness of worth of an educational experience which is measured against instructional objectives.

Evaluation is done to fulfil the following needs:

Purposes and Functions of Evaluation:

Evaluation plays a vital role in teaching learning experiences. It is an integral part of the instructional programmes. It provides information's on the basis of which many educational decisions are taken. We are to adhere to the basic function of evaluation which is required to be practiced for pupil and his learning processes.

Evaluation has the following functions:

(a) Placement Functions,

(b) Evaluation helps to study the entry behaviour of the children in all respects.

(c) That helps to undertake special instructional programmes.

(d) To provide for individualisation of instruction.

(e) It also helps to select pupils for higher studies, for different vocations and specialised courses.

Instructional Functions:

(a) A planned evaluation helps a teacher in deciding and developing the ways, methods, techniques of teaching.

(b) Helps to formulate and reformulate suitable and realistic objectives of instruction.

(c) Measures to improve instruction and to plan appropriate and adequate techniques of instruction.

(d) And also helps in the improvement of curriculum.

(e) To assess different educational practices.

(f) Ascertains how far could learning objectives be achieved.

(g) To improve instructional procedures and quality of teachers.

(h) To plan appropriate and adequate learning strategies.

Diagnostic Functions:

(a) Evaluation has to diagnose the weak points in the school programme as well as weakness of the students.

(b) To suggest relevant remedial programmes.

(c) The aptitude, interest and intelligence are also to be recognised in each individual child so that he may be energised towards a right direction.

(d) To adopt instruction to the different needs of the pupils.

(e) To evaluate the progress of these weak students in terms of their capacity, ability and goal.

Predictive functions:

(a) To discover potential abilities and aptitudes among the learners.

(b) Thus to predict the future success of the children.

(c) And also helps the child in selecting the right electives.

Administrative Functions:

(a) To adopt better educational policy and decision making.

(b) Helps to classify pupils in different convenient groups.

(c) To promote students to next higher class,

(d) To appraise the supervisory practices.

(e) To have appropriate placement.

(f) To draw comparative statement on the performance of different children.

(g) To have sound planning.

(h) Helps to test the efficiency of teachers in providing suitable learning experiences.

(i) To mobilise public opinion and to improve public relations.

(j) Helps in developing a comprehensive criterion tests.

Guidance Functions:

(a) Cssists a person in making decisions about courses and careers.

(b) Enables a learner to know his pace of learning and lapses in his learning.

(c) Helps a teacher to know the children in details and to provide necessary educational, vocational and personal guidance.

Motivation Functions:

(a) To motivate, to direct, to inspire and to involve the students in learning.

(b) To reward their learning and thus to motivate them towards study.

Development Functions:

(a) Gives reinforcement and feedback to teacher, students and the teaching learning processes.

(b) Assists in the modification and improvement of the teaching strategies and learning experiences.

(c) Helps in the achievement of educational objectives and goals.

Research Functions:

(a) Helps to provide data for research generalisation.

(b) Evaluation clears the doubts for further studies and researches.

(c) Helps to promote action research in education.

Communication Functions:

(a) To communicate the results of progress to the students.

(b) To intimate the results of progress to parents.

(c) To circulate the results of progress to other schools.

The future evaluation will be problem-driven or discipline-driven or economically-driven or culturally-driven – all will be interacted and will continue to do so. Assimilation and accommodation are likely to continue into the future as evaluation draws its practitioners and its theorists from a variety of background, enlarging its own now-substantial knowledge base with creative adaptations of methods and theories emanating from many sources. Training for that future calls for emphasis on evolving discipline-based strengths, knowledge and skills from the evaluation from the trans-discipline and the flexibility of perspective and skill to engage in a dynamic team approach to problem solving.

2.5: Knowledge Construction and Capacity Building of Learners

2.5.1: General Concept

The nature of evaluation would influence what is learnt and what is the degree to which they are meaningfully engaged in the learning process. Evaluation should not be limited to finding out the extent to which learning has occurred. It also provide feedback to the students and opportunity for improvement. While using a particular type of achievement in evaluation, a teacher may construct, teacher-made questions in order to assess the student's efforts. Sometimes assessments may be erroneous but good assessment enhances the capacity of the learner. It also has an influence on the nature of instruction in the classroom. When a particular assessment in evaluation pattern is integrated with instructions,it informsteachers about the nature of activities and assignments that may prove to be useful, the level at which teaching is needed, and the areas of instructions that have not resulted in the requisite learning. During instruction, informal, formative assessments helped teachers to know when to proceed, when to ask more questions, when to give more examples, and how to respond to student questions. Usually a good assessment requires multiple methods to enhance the learning capacity of the learners. As it employs multiple methods and to suit the classroom diversity.

Evaluation is a continuous process which involves selection standard implementation of plans and activities so as to check on progress and to change or adopt strategies to promote desired behaviour in the learner. Reflection and assessment are importantcomponents of any evaluation system to develop their skills and enhance their self-learning.

There are three avenues for students' learning for knowledge construction and for capacity building of the learners:

(a) Assess what the student says-for example, the quantity and quality of student's contributions to class discussions

(b) Assess what the student does- for example, a student's performance (e.g. the amount and quality of a student's participation in the learning curricular activities); and

(c) Assess what the student writes – for example, as shown by items in the student's portfolio (e.g. homework assignments, checklists, project work and written tests).

Evaluation plays an effective role in questioning or challenging the educational objectives. This can be shown by - a *simple representation explaining the role of evaluation in the teaching-learning process below:*

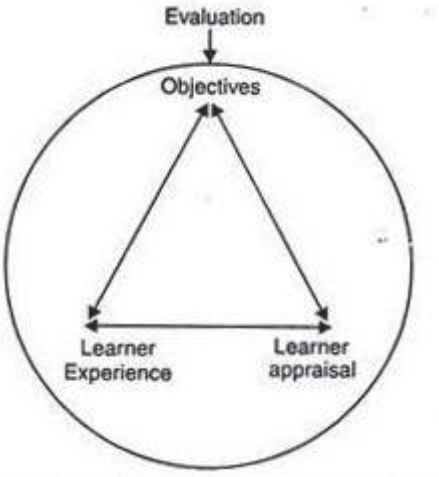


Fig. 12.1 Representation of the Role of Evaluation in the rteaching-Learning Process

Evaluation has its four different aspects namely:

(a) Objectives

(b) Learning experiences

(c) Learner appraisal and

(d) Relationship between the three.

2.5.2 Knowledge Construction in Evaluation

Importance of Educational Objectives:

The importance of educational objectives in testing and evaluation can be enlisted as under:

1. Through them we try to make education relevant to unknown future.
2. They define the skills that students should develop in them to be able to meet any eventuality of uncertain nature.
3. Instead of acquiring knowledge alone, the objectives enable the students to learn how to deal with knowledge, how to identify urgently required new knowledge, sources of that new knowledge and how to face the changes brought about by new knowledge.
4. The students are likely to forget memorised knowledge after the examinations, but remember and use the skills acquired during the process of learning. Educational objectives lay required stress on these skills.
5. The objectives also help in arranging courses and units in sequences.
6. They provide a criteria for the accountability of teachers.
7. Specific learning outcomes based on educational objectives serve the purpose of communication between the teacher, taught and examiner, thus minimising the confusion regarding the distinct goals of learning, teaching, testing and evaluation.
8. Objectives provide a scientific basis for the planning and preparation of tests.
9. The objectives enhance the student's involvement in the process of learning as they are made aware about what they are to master.
10. The objectives provide guidance to the teacher to develop better teaching methods, as they lead to periodic class tests, discussions and other forms of two-way communications.

11. If learning objectives are communicated to the paper setter, he will frame questions in view of both the objectives and the subject matter"and will produce a question paper with the required qualities of a good question paper.

A. Evaluation can be classified into different categories in many ways.

Some important classifications/types of evaluation are as follows:

Types of Evaluation

According to functions	According to approaches	According to nature of reference/interpretation
1-Placement 2-Formative 3-Diagnostic 4-Summative	1-Formative 2-Summative	1-Norm-referenced. 2-Criterion-referenced.

Placement Evaluation:

Placement evaluation is designed to place the right person in the right place. It ensures the entry performance of the pupil. The future success of the instructional process depends on the success of placement evaluation.Placement evaluation aims at evaluating the pupil's entry behaviour in a sequence of instruction. In other words the main goal of such evaluation is to determine the level or position of the child in the instructional sequence.

We have a planned scheme of instruction for classroom which is supposed to bring a change in pupil's behaviour in an orderly manner. Then we prepare or place the students for planned instruction for their better prospects.

When a pupil is to undertake a new instruction, it is essential to know the answer of the following questions:

a. Does the pupil possess required knowledge and skills for the instruction?

b. Whether the pupil has already mastered some of the instructional objectives or not?

c. Whether the mode of instruction is suitable to pupil's interests, work habits and personal characteristics?

We get the answer to all the probable questions by using a variety of tests, self-report inventories, observational techniques, case study, attitude test and achievement tests.

Sometimes past experiences, which inspire for present learning also lead to the further placement in a better position or admission. This type of evaluation is helpful for admission of pupils into a new course of instruction.

Examples:

i. Aptitude test

ii. Self-reporting inventories

iii. Observational techniques

iv. Medical entrance exam.

v. Engineering or Agriculture entrance exam.

Formative Evaluation:

Formative evaluation is used to monitor the learning progress of students during the period of instruction. Its main objective is to provide continuous feedback to both teacher and student concerning learning successes and failures while instruction is in process.Feedback to students provides reinforcement of successful learning and identifies the specific learning errors that need correction. Feedback to teacher provides information for modifying instruction and for prescribing group and individual remedial work.

Formative evaluation helps a teacher to ascertain the pupil-progress from time to time. At the end of a topic or unit or segment or a chapter the teacher can evaluate the learning outcomes basing on which he can modify his methods, techniques and devices of teaching to provide better learning experiences.

The teacher can even modify the instructional objectives, if necessary. In other words, formative evaluation provides feedback to the teacher. The teacher can know which aspects of the learning task were mastered and which aspects were poorly or not at all mastered by pupils. Formative evaluation helps the teacher to assess the relevance and appropriateness of the learning experiences provided and to assess instantly how far the goals are being fulfilled.

Thus, it aims at improvement of instruction. Formative evaluation also provides feedback to pupils. The pupil knows his learning progress from time to time. Thus, formative evaluation motivates the pupils for better learning. As such, it helps the teacher to take appropriate remedial measures. ”The idea of generating information

to be used for revising or improving educational practices is the core concept of formative evaluation."

It is concerned with the process of development of learning. In the sense, evaluation is concerned not only with the appraisal of the achievement but also with its improvement as education is a continuous process.

Therefore, evaluation and development must go hand in hand. The evaluation has to take place in every possible situation or activity and throughout the period of formal education of a pupil.

Cronbach is the first educationist, who gave the best argument for formative evaluation. According to him, the greatest service evaluation can perform is to identify aspects of the course where education is desirable. Thus, this type of evaluation is an essential tool to provide feedback to the learners for improvement of their self-learning and to the teachers for improvement of their methodologies of teaching, nature of instructional materials, etc.

It is a positive evaluation because of its attempt to create desirable learning goals and tools for achieving such goals. Formative evaluation is generally concerned with the internal agent of evaluation, like participation of the learner in the learning process.

The functions of formation evaluation are:

(a) Diagnosing: Diagnosing is concerned with determining the most appropriate method or instructional materials conducive to learning.

(b) Placement: Placement is concerned with the finding out the position of an individual in the curriculum from which he has to start learning.

(c) Monitoring: Monitoring is concerned with keeping track of the day-to-day progress of the learners and to point out changes necessary in the methods of teaching, instructional strategies, etc.

Characteristics of Formative Evaluation:

The characteristics of formative evaluation are as follows:

a. It is an integral part of the learning process.

b. It occurs, frequently, during the course of instruction.

c. Its results are made immediately known to the learners.

d. It may sometime take form of teacher observation only.

e. It reinforces learning of the students.

f. It pinpoints difficulties being faced by a weak learner.

g. Its results cannot be used for grading or placement purposes.

h. It helps in immediate modification of instructional strategies including method of teaching.

i. It motivates learners, as it provides them with knowledge of progress made by them.

j. It sees role of evaluation as a process.

k. It is generally a teacher-made test.

l. It does not take much time to be constructed.

Examples:

i. Monthly tests.

ii. Class tests.

iii. Periodical assessment.

iv. Teacher's observation, etc.

3. Diagnostic Evaluation:

It is concerned with identifying the learning difficulties or weakness of pupils during instruction. It tries to locate or discover the specific area of weakness of a pupil in a given course of instruction and also tries to provide remedial measure.N.E. Gronlund says "…… formative evaluation provides first-aid treatment for simple learning problems whereas diagnostic evaluation searches for the underlying causes of those problems that do not respond to first-aid treatment."

When the teacher finds that in spite of the use of various alternative methods, techniques and corrective prescriptions the child still faces learning difficulties, he takes recourse to a detailed diagnosis through specifically designed tests called 'diagnostic tests'.

Diagnosis can be made by employing observational techniques, too. In case of necessity the services of psychological and medical specialists can be utilised for diagnosing serious learning handicaps.

Summative Evaluation:

Summative evaluation is done at the end of a course of instruction to know to what extent the objectives previously fixed have been accomplished. In other words, it is the evaluation of pupils' achievement at the end of a course.

The main objective of the summative evaluation is to assign grades to the pupils. It indicates the degree to which the students have mastered the course content. It helps to judge the appropriateness of instructional objectives. Summative evaluation is generally the work of standardised tests.

It tries to compare one course with another. The approaches of summative evaluation imply some sort of final comparison of one item or criteria against another. It has the danger of making negative effects.

This evaluation may brand a student as a failed candidate, and thus causes frustration and setback in the learning process of the candidate, which is an example of the negative effect.

The traditional examinations are generally summative evaluation tools. Tests for formative evaluation are given at regular and frequent intervals during a course; whereas tests for summative evaluation are given at the end of a course or at the end of a fairly long period (say, a semester).

The functions of this type of evaluation are:

(a) Crediting: Crediting is concerned with collecting evidence that a learner has achieved some instructional goals in contents in respect to a defined curricular programme.

(b) Certifying: Certifying is concerned with giving evidence that the learner is able to perform a job according to the previously determined standards.

(c) Promoting: It is concerned with promoting pupils to next higher class.

(d) Selecting: Selecting the pupils for different courses after completion of a particular course structure.

Characteristics of Summative Evaluation:

a. It is terminal in nature as it comes at the end of a course of instruction (or a programme).

b. It is judgemental in character in the sense that it judges the achievement of pupils.

c. It views evaluation "as a product", because of its chief concern is to point out the levels of attainment.

d. It cannot be based on teachers' observations only.

e. It does not pin-point difficulties faced by the learner.

f. Its results can be used for placement or grading purposes.

g. It reinforces learning of the students who has learnt an area.

h. It may or may not motivate a learner. Sometimes, it may have negative effect.

Examples:

1. Traditional school and university examination,
2. Teacher-made tests,
3. Standardised tests,
4. Practical and oral tests, and
5. Rating scales, etc.

Norm-Referenced and Criterion-Referenced Evaluation:

Two alternative approaches to educational testing that must be thoroughly understood are norm-referenced testing and criterion-referenced testing. Although there are similarities between these two approaches to testing, there are also fundamental differences between norm and criterion referenced testing.

There have been disputations about the relative virtues of norm and criterion-referenced measurements for a long time. However, a fundamental fact is recognised by most of concerned people that norm-referenced and criterion-referenced testing are complementary approaches.

Criterion-Referenced Evaluation:

When the evaluation is concerned with the performance of the individual in terms of what he can do or the behaviour he can demonstrate, is termed as criterion-referenced evaluation. In this evaluation there is a reference to a criterion.

But there is no reference to the performance of other individuals in the group. In it we refer an individual's performance to a predetermined criterion which is well defined.

Examples:

(i) Suman secured87 marks in a test of English Language.

(ii) A typist's typing speed is50 words per minute.

(iii) Sonia's score in a recitation test is 60.

A simple working definition:

A criterion-referenced test is used to ascertain an individual's status with respect to a defined achievement domain.

In the above examples there is no reference to the performance of other members of the group. Thus criterion-referenced evaluation determines an individual's status with reference to well defined criterion behaviour.

It is an attempt to interpret test results in terms of clearly defined learning outcomes which serve as referents (criteria). Success of criterion-reference test lies in the delineation of all defined levels of achievement which are usually specified in terms of behaviourally stated instructional objectives.

The purpose of criterion-referenced evaluation/test is to assess the objectives. It is the objective based test. The objectives are assessed, in terms of behavioural changes among the students.

Such type of test assesses the ability of the learner in relation to the criterion behaviour. Glasar (1963) first used this term, 'Criterion-reference test' to describe the learner's achievement on a performance continuum.

Hively and Millman (1974) suggested a new term, 'domain-referenced test' and to them the word 'domain' has a wider connotation. A criterion referenced test can measure one or more assessment domain.

Norm Referenced Evaluation:

Nor m-referenced evaluation is the traditional class-based assignment of numerals to the attribute being measured. It means that the measurement act relates to some norm, group or a typical performance.

It is an attempt to interpret the test results in terms of the performance of a certain group. This group is a norm group because it serves as a referent of norm for making judgements.

Test scores are neither interpreted in terms of an individual (self-referenced) nor in terms of a standard of performance or a pre-determined acceptable level of

achievement called the criterion behaviour (criterion-referenced). The measurement is made in terms of a class or any other norm group.

Almost all our classroom tests, public examinations and standardised tests are norm-referenced as they are interpreted in terms of a particular class and judgements are formed with reference to the class.

Examples: Suman stood first and secured 87 marks in a test of English Language in his class.

(ii) A typist's typing speed is 60 words per minute stands above 90 percent of the typists who appeared the interview.

(iii) Sonia surpasses 65% of students of her class score in a recitation test is 60.

A simple working definition:

A norm-referenced test is used to ascertain an individual's status with respect to the performance of other individuals on that test.

In the above examples, the person's performance is compared to others of their group and the relative standing position of the person in his/her group is mentioned. We compare an individual's performance with similar information about the performance of others.

That is why selection decisions always depend on norm-referenced judgements. A major requirement of norm-referenced judgements is that individuals being measured and individuals forming the group or norm, are alike. In norm-referenced tests very easy and very difficult items are discarded and items of medium difficulty are preferred because our aim is to study relative achievement.

2.5.3 Capacity Building of Learners through Evaluation

Capacity building approach in the context of applied research projects in developing countries is often offered through workshops during which participants are exposed to evaluation theories and methods. It requires a number of training kits and learning tools. The process is based on prior experiences, appropriate mentorship and its own implementation pace to support the selected projects. This approach is based on experiential learning, through which the staff members of partner

projects learn-by-doing and reflecting (Kolb, 1984). The notion of mentoring is very present in the capacity development literature. It offers an experience tailored to each context in terms of timing and scenarios instead of imposing blueprint recipes and standardized workshops (Horton et al., 2003). In addition to mentoring, "readiness" constitutes the second capacity development pillar. The concept of readiness comes from Utilization-Focused Evaluation (Patton, 2008), which highlights the importance of verifying that there is:

(i) available staff to be trained;

(ii) enough buy-in from the organization's managers to support the process and assign the required resources; and

(iii) enough openness from donors to accept that the project's team members themselves become meaningfully involved in the evaluation design and are also involved in determining the purposes and intended uses of the evaluation. readiness is not an evaluation tool, but rather an early check-up on the enabling context. When the donor opens the door to multiple users and intended uses, the evaluation becomes a learning process (Brodhead & Ramirez, 2014). Such processes enable projects to gain a sense of ownership over the evaluation, which can lead to evaluative culture within organizations (Mayne, 2009).It helps a teacher to know his pupils in details. Today, education is child-centered. So child's abilities, interest, aptitude, attitude etc., are to be properly studied so as to arrange instruction techniques accordingly.

As education is a complex processthere is a great need of continuous evaluation of its processes and products. It helps to design better educational programmes. The parents are eager to know about the educational progress of their children and evaluation alone can assess the pupils' progress from time to time. A sound choice of objectives depends on an accurate information regarding pupil's abilities, interest, attitude and personality traits and such information which can be obtained through evaluation. Evaluation helps us to know whether the instructional objectives have been achieved or not. As such evaluation helps planning of better strategies for education.

A sound programme of evaluation clarifies the aims of education and it helps us to know whether aims and objectives are attainable or not. As such, it helps in reformulation of aims and objectives.

Evaluation studies the 'total child' and thus helps us to undertake special instructional programmes like enrichment programme, for the bright and remedial programmes for the backward.

It helps a student in encouraging good study habits, in increasing motivation and in developing abilities and skills, in knowing the results of progress and in getting appropriate feedback. It helps us to undertake appropriate guidance services.

From the above discussions it is quite evident that evaluation is quite essential for promoting pupil excellence and it is equally helpful to parents, teachers and administrators.

2.6 Organizational Learning and Change and Strategic Planning

2.6.1 General Introduction

The concept of evaluation designed for program improvement or organizational learning serve the interest of stake holders responsible for administering the program or managing the organization. Evaluation that seeks critical insight into the professional practices of program staff or in-depth understanding of the lived experiences of participants is likely to engage staff and participant interest and concerns.

Many educational and training programs include an evaluation practicum. There are important gaps in current training programs for evaluators. Gaps may exit in such areas as management, communication and ethics as well as in the processes like negotiation, dialogue, deliberation and conflict resolution. According to Peter Senge, leadership today centres on 'subtle and more important tasks'. In a learning organization, leaders are designers, stewards and teachers. There are responsible for building organizations, make people continually expand models – that is they are responsible for learning… Learning organizations will remain 'a good idea' …until people take a stand for building such organizations.

2.6.2 Organizational Learning and Change

A management response system determines the procedures for dealing with completed evaluations, and such a system is a vital tool for promoting the effectiveness of evaluations. A management response system can be understood as a way of linking evaluation findings to future activities. It governs the procedures dealing with a completed evaluation and is intended to facilitate. In line with good practice, and as a means to help ensure transparency and accountability, it is proposed to establish an evaluation tracking system that functions as a database where evaluation findings can be uploaded and management responses/actions be tracked. It is proposed that this tracking system be accessible. Learning and performance improvement is a key outcome of evaluation work. Thus establishing effective feedback loops from evaluation to policy-and decision makers, operational staff and other stakeholders is critical for evaluation lessons are to be learnt, and for evaluation findings to inform key decisions. Learning should also contribute towards a culture where evaluation is integral to the planning, design and implementation of policies and programmes. There are a number of ways, both formal and informal, to promote and ensure organizational learning. Feedback into senior-level decision-making and action is promoted through the engagement of all staffs in various stages of the evaluation process, including consultation to develop the work-plan, commissioning of the decentralized evaluations, and the ownership of the management response/ action for evaluations. It is proposed that the development process includes a separate section on evaluation findings that informed the proposed programmatic results in the documents. Other strategy and policy documents, including resolutions, to be reviewed by the governing bodies could also highlight how they were informed by any relevant evaluation findings. In some cases, evaluation findings could also help to pause implementation of specific programmes/activities, including in cases of scale-up or follow-up activities. In other instances, evaluation findings could be the reason to undertake necessary mid-course corrections, or to initiate new activities and programmes. Various other avenues exist to promote learning during the evaluation process. Findings and evidences generated through evaluation should also be part of the organization's broader knowledge management efforts.

Thus working closely with the knowledge management department to integrate evaluation lessons with other forms of learning is important. An important additional route to strengthen the culture of learning and increase transparency and stakeholder ownership is to communicate evaluation work and findings effectively.

According to Peter Senge(1990) ;learning organizations are organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together. *The five factors that Peter Senge identifies are said to be converging to innovate learning organizations.* They are as follows:

1. Systems thinking
2. Personal mastery
3. Mental models
4. Building share and division
5. Team learning

2.6.3: Strategic Planning in Evaluation

Strategic planning is the art of formulating business strategies, implementing them, and evaluating their impact based on organizational objectives. The concept focuses on integrating various departments like research and development, production, marketing, information systems, management) to achieve organizational goals. The term strategic planning is synonymous with strategic management, only that the former is used in the corporate world and the latter in the academic setting.

The concept of strategic planning originated in the 1950s but only became popular in the mid-1960s and the mid-1970s. Its application was later revived in the 1990s and remains relevant in modern business.

On the basis of Cheng and Tam's (1997) write-ups- The indicator for quality evaluation of an educational institution have been classified under seven heads:- This dimensions of institutional evaluation focus on systems approach where the institution is to be seen in totality in the context of its different components viz. Inputs, process, product and mechanism of evaluation. This compound and can be a long list of infrastructure, learners, teachers, setup administrator and administrative setup curriculum, teaching learning process and evaluation, output of the system, planning, research and development, social responsiveness, etc. The quality of this components can be studied in the context of different indicators. Moreover, these indicators need to be specified in such a way that clear cut and pinpointed outcomes of evaluation can be arrived at as a result of program evaluation.

S.N.	Indicators	Areas	Criteria
1.	Goals/ Objectives	School objectives, standards, and specializ_ations listed in school programmes and plans, e.g. academic rate, dropout rate etc.	Clarity; time-bound; specific and observable; whether resources are sufficient to achieve the goals, whether goals are achievable.
2.	Resources	Quality of student intake, facilities, financial support etc.	Clear relationship between input (resources) and output, whether resources are of needed quality.
3.	Process	Leadership (Teachers/ Principals), participation, social interactions, classroom climate, learning activities and experiences.	Clear relationship between process and output. Smooth internal process leading to expected outcome.
4.	Satisfaction of stakeholders	Satisfaction of educational authorities, management board, administrators, teachers, parents, students, employers etc.	Satisfaction of all powerful school constituents or stakeholders.
5.	Institution's legitimacy and reputation	Public relations, marketing, public image, reputation, status in the community, evidence of accountability, etc.	Accountability of school to communtty, social reputation, meeting social needs, demands and requirements.
6.	Absence of problems and troubles in the institution	Absence of conflicts, dysfunctions, difficulties, defects, weaknesses, troubles, etc.	Strategies adopted for minimising problems and troubles.
7.	Adaptation to environmental changes and internal barriers, continuous improvement.	Awareness of.essential needs and changes, internal process · monitoring, programme evaluation, development planning, staff development etc.	Openness and flexibility in internal organization towards environmental changes and its strategies for planning and development.

Source: Cheng and Tam (1997)

Parameters of instituional evaluation for strategic planning

Strategic Planning Process

The application of the strategic planning in education business is as a result of difficult managerial decisions that comprise good and less desirable courses of action.

The development and execution of strategic plans is a well-thought-out plan primarily performed in three critical steps:

Strategy Formulation

In the formulation of strategies, the business assesses its current situation by performing an internal and external audit. Strategy formulation also involves identifying the educational evaluation's strengths and weaknesses, as well as opportunities and threats (SWOT Analysis).

Business strategies result in long-term effects on evaluation success; only top business evaluators understand their impact and are authorized to assign the resources necessary for their implementation.

Strategy Implementation

After the strategy formulation, the evaluators needs to establish short-term goals (usually one-two year(s) goals), devise policies, and allocate resources for their execution. It is also referred to as the action stage and is the most important phase of strategic planning. The success of the implementation stage is determined by the firm's ability to nurture an environment and a culture that motivates employees to work. A manager's interpersonal skills are critical during this stage.

Effective strategy implementation also involves developing a functional organizational structure, maximum utilization of information systems, and redirecting marketing efforts.

Strategy Evaluation

Any person knows that success today does not guarantee success tomorrow. As such, it is important for managers to evaluate the performance of various strategies after the implementation phase. Strategy evaluation involves three crucial activities: reviewing the internal and external factors affecting the implementation of the strategies, measuring performance, and taking corrective steps.

All the three steps in strategic planning occur in three hierarchical levels: the authority, middle, and operational levels. Thus, it is imperative to foster communication

and interaction among the faculty and educational managers in all the levels so as to help the institution to operate as a functional team.

Benefits of Strategic Planning

The volatility of the education environment causes most institutions to adopt reactive strategies and not proactive ones. However, reactive strategies are short-term, causing firms to spend a significant amount of resources and time. Strategic planning helps institutions prepare beforehand; it lets them initiate influence instead of just responding to situations:

Helps formulate better strategies using a logical, systematic approach

It is still the most important benefit. Some studies show the strategic planning process makes a significant contribution more than the decision itself.

Enhanced communication between educational managers and faculty

Communication is crucial to the success of the strategic planning process. It is initiated through participation and dialogue among the managers and employees, which shows their commitment to achieving organizational goals.

Strategic planning also helps educational managers and faculty to show commitment to the organization's goals. Strategic planning makes organizational goals and objectives real as the faculty can understand the relationship between their performance and excellence. As a result, both become innovative and creative, which fosters the growth of the institution further.

Empowers the individuals working in the organization

The increased dialogue and communication across all the stages of the process strengthens the faculty's sense of effectiveness, initiative-taking, and imagination. It explains the need for institutions to decentralize the strategic planning process by involving lower-level staffs.

Evaluation is a data-driven process for increasing knowledge and decision making within organizations. It involves answering questions and addressing issues through a systematic collection and analysis of information about an organization's programs, processes, systems, products, and services. Evaluation is a powerful tool which assists organizational leaders in allocating funds, performance improvement, and demonstrating effectiveness. Evaluation can occur at all levels of the organization.

There are the criteria that one is looking out when we do the evaluation:

1. It is needed to recheck either the plan is connected with the mission and vision. To make sure that all goals and strategies align with one's vision and support the mission. Moreover to modify or delete any outliers so that all the energy is focused on reaching the vision.
2. The plan must be realistic in order to achieve the target. Over planning is a common problem. One need to ensure the plan is integrated so that all the elements of the plan support each other.
3. To make sure that there is a good balance between financial, community, internal business process, and faculty and learning goals and to identify any gap in the plan or potential activities that are unsupported.
4. Writing down an action item or a goal that makes sense in the moment is easy, but making sure that the action makes sense in few months is crucial and to make sure that every statement is explicit so everyone knows what's intended. Need to seek someone who can be trusted from outside of the organization to review the plan for clarity and consistency. Documentation is the important thing that management should be following.

Strategy planning encompasses consumer-oriented service on the part of the institution. It has to therefore make a case for quality policies and well-designed action plan for its attainments and maintenance. Quality control and quality assurance are the two components in strategic planning. It is a positive concept, regular and continuous monitoring that is very much essential for the administrators to aspire for it and plan for it. It ensures the best of services from the existing resources to be given to the consumer viz. that is the students in case of educational institutions both the administrator, faculty, student,administrative staff and the community are included who think collectively and help the authority to solve or take decision conducive for the learning. This ensures proper development of the institution and belongingness on the part of the beneficiaries. Therefore decentralization is an important aspect to raise the effectiveness organization learning.

2.7: Advocacy and Communication

2.7.1 General Introduction

Evaluation should be based on the goals and objectives that were set at the outset of the advocacy planning process. Questions that you might ask in order to evaluate the impact of your work are as follows:

- Have you achieved your objectives?
- How many meetings have you had with key target decision-makers and what were the outcomes of those meetings?
- What actions were taken by these target decision-makers?
- Is the situation better than before? By how much?
- If there is no change, how might you change your advocacy methods?
- What would you do differently next time?
- Are the people involved with the advocacy effort happy with the results and the way the work was implemented? Are they still involved?

Advocacy is often an ongoing process. Thus rather than simply aiming for a single policy or piece of legislation, advocacy plans may have multiple or even changing goals and objectives. Ideally then, advocacy plans should be designed to be sustainable over time. Planning for continuity means articulating long-term goals, keeping functional coalitions together and adjusting advocacy methods as situations change.

Over the long term, you will need to evaluate the situations that result from advocacy activities. Possible scenarios, and recommended courses of action, are:

- If desired policy changes occur, monitor their implementation.
- If desired policy changes do not occur, review previous advocacy strategy and action, revise the strategy, enact a new advocacy process or identify other actions to be taken.
- Develop plans to sustain or reinforce the desired change.

Internal assessment (self-assessment)

Successful internal assessment presupposes that minds are open and receptive ideas. It requires the involvement of all major stakeholders including teachers, students and management to get their feedback. Assessment of all the programmes and work of all the individuals of the institution is mandatory. It may be conducted on the following ways:

- Self-appraisal of teachers
- Self-appraisal of departments

Internal-appraisal of the teachers includes work of Heads of Departments and Deans of schools and internal review covers the work of main administrators like

Registrars, Controllers of Examination, Finance Officers, and Vice-Chancellors in universities and Principals and Vice-principals of educational institutions.

External assessment (accreditation)

External assessment is a mechanism of quality control in the functioning of education. The focus is more on the culture of compliance rather than one of continuous quality enhancement.

Fund allocation to college and universities is generally based ion the recommendations on external assessment. Finally, it helps in the institutions in the process of quality enhancement.

Whereas communication is a part of all programme evaluation activities. Indeed the nature of evaluation has as an ultimate purpose; the improvement has to be evaluated. Reporting or communication of evaluation results help to assure evaluation which will again lead to this improvement. Evaluation implies the necessity in communicating the stakeholders and other audiences.

Evaluation communications are part of a larger communication network and there are continual interactions between the parts of the network. We are surrounded by language. We believe that a heightened awareness of language makes us better communicators and better evaluators because it helps us to reflect on evaluation itself. To be precise and thoughtful in our communication is a discipline that affects not only our speaking and writing but all the practices we use for evaluation, the very way that we do our work.

2.7.2 Advocacy in Evaluation

Continuity does not end — advocacy is an ongoing learning process of planning, reflecting and acting.

Advocacy efforts must be evaluated in the same way as any other communication campaign. Since advocacy often only provides partial results, an advocacy team needs to monitor and measure regularly and objectively what has been accomplished and what more remains to be done.

Monitoring is the measurement of progress towards the achievement of set objectives, noting which activities are going well and which are not. Evaluation is about judging the quality and impact of activities. Evaluation asks why some actions went well and others did not, and why some activities had the desired impact while others did not. Both process evaluation (how you worked) and impact evaluation (what changes) need to be considered.

There are numerous ways of monitoring and evaluating advocacy work. The following methods can be:

- qualitative (e.g. case studies, stories, opinions, survey questionnaires)
- quantitative (e.g. statistics or trends that indicate a change over time)

  Monitoring methods should be chosen according to the indicators that you have selected to evaluate the impact of your work. Monitoring methods may include:

- keeping records of meetings, correspondence or conversations with target audiences and the responses elicited;
- tracking when your key messages or briefing notes are used by elected officials, other key influencers or the media;
- carrying out surveys and interviews to determine the impact your actions have had and the recognition they have received;
- monitoring the media and keeping track of coverage of your topic in the media.

Over the last decade increasing attention has been given to the development of needs, assessments to improve aid effectiveness and impact.

Dialogue has been drawn for the attention of evaluators in recent years especially in the context of democratic societies providing new perceptions regarding the meaning of evaluation and its constructive use. This is also a time when democratic societies extensively practise coercive use of evaluation for accountability in their educational systems. Development evaluations act more softly to achieve transparency and they encounter fewer obstacles to acceptance and use.

2.7.3 Communication in Evaluation

Communication efforts will need to consider the range of potential target audiences and the diversity of these audiences when preparing the necessary communication products. Communication of evaluation results in a timely and effective manner can influence views not only of staff but also of (delegates, parliaments, and decision-makers), the broader donor community and other stakeholders. It contributes towards transparency, and building confidence and trust in the work of the organization. A number of useful models exist for communicating the evaluation work, including: The annual report, stakeholder seminars and webinars, briefings to interested members, short, clear executive summaries of completed evaluations need to be publicly

available. Evaluation findings and ongoing work need to be presented in a quarterly electronic newsletter (with a synthesis of a few evaluations); and a well maintained, informative and up-to-date website is an absolute necessity for drawing inter-relationship with other external assessments and reviews.

There are several sects of main "actors" in evaluation. The evaluator (or evaluators) fashion the evaluation message in various ways and formats. A second set of participants in the communication act are usually referred to as the "audience". Evaluators orchestrate and perform numerous activities during an evaluation and play a critical role in communicating their findings. Evaluators must be attentive to who will be the recipient of the communication.

Generally evaluators want to know which clients, stakeholders and others will, and other ought to be recipients of evaluation and need to be communicated. Communication is further facilitated by developing a complete understanding as possible of what these audiences want to know, why they want to know it, and what use they intend to make of it.

In structuring the communication plan, the first concern is identifying the participants in this structuring. It is important to recognize that this with whom the evaluator communicates during planning and structuring are privileged parties relative to others. Thus, the essential part of the evaluation structuring activity is determining which audiences will participate in the process of structuring the communication plan and to which degree that the participating group is broadly representative, then the evaluator has a special responsibility to raise the issue of the potential relevant audiences for the evaluation communication. Again, the extent to which the evaluator would feel obliged to advocate for broader inclusion is related to the evaluator's personal theoretic position.

Three principal criteria need to be satisfied in order, for our evaluation function and products to be considered of high quality:

- Independence of evaluations and evaluation systems. The evaluation process should be impartial and independent in its function from the process of policy making, delivering and managing our programmatic and administrative work.
- Credibility of evaluations. The credibility of evaluation depends on the expertise and independence of evaluators and the degree of transparency of the evaluation process.

- Utility of evaluations. To have an impact on decision-making, evaluation findings must be perceived as relevant and useful and be presented in a clear and concise way. Findings must contribute to organizational learning and performance improvement. These three overarching criteria inform the proposed framework for strengthening evaluation and organizational learning. Another critical aspect of the evaluation function is the balance between independence and engagement in undertaking evaluation work. While maintaining strong independence covers the accountability dimension, more engagement with management/programme staff in the evaluation process contributes better towards learning.

Most entities try to find a balance between these two, not only in their overall approach to evaluation work, but also for each individual evaluation – for example, one evaluation may be more focussed on addressing the accountability dimension, while another may focus on utility i.e. the learning dimension. The interrelationship between the corporate/centralized evaluation need to be undertaken by the central evaluation unit and the decentralized evaluations commissioned and managed outside of the central unit. The framework will seek to address evaluation and organizational learning based on desk reviews, consultations and review of evaluation functions of various multilateral and bilateral entities, and the review of on-going evaluation work, the following framework which incorporates best practices and models that could be implemented. The framework is both ambitious and forward-looking. It should be seen as work in progress rather than an end result. There is a necessity for constant communication and feedback.

More and more ongoing communication among management and faculty effects improvement in the organization in the evaluation process. Communication becomes essential among all stakeholders to solve intricate problems.

The following ideas about communication are important in building quality organizations:

i) Communication must be interactive so that stakeholders' ideas and concerns can actively impact the direction the organization is taking.

ii) One way communication by letters, memoranda, newsletters are becoming highly ineffective.

iii) Open communication removes reservations and misunderstanding from the participants.

iv) Interpersonal communication behaviours can make or mar the environment of trust and openness which is necessary for a group to transform into a high performance team.

v) Ensure that each member of the team has a chance to be heard, develop a shared knowledge base, go slow to go fast, listen with respect.

Evaluators also communicate when they negotiate joint responsibilities and report expectations i.e. evaluators communicate about the evaluation process- about the doing of the evaluation. The evaluators also engage in various communication activities when collecting and analysing evaluation data and the impact of these activities on the evaluation process can also be considered as evaluation.

Evaluation must be communicated to the society so as to complete the learning cycle which require four kinds of learning abilities. They are as follows:

i) Concrete experience- learners are enabled and encouraged to become involved in new experiences.

ii) Reflective observations - gives learners time to reflect on their learning

iii) Abstract conceptualisation – learners must be able to form and process idea and integrate them into logical theories

iv) Active experimentation - learners need to able to use theories to solve problems and test theories in new situations.

Educational institutions are no islands in themselves they exist in an established social system they cannot exist apart from a society. Consequently their personnel must work with people and agencies and organisation in their communities so that the institution is sustained. The educational institutions in the community have the primary interest and the parents have the responsibility and have a right and obligation to understand what the institution is doing or evaluating for their children. The communities' very survival is dependent upon what happens to their children's learning. These institutions exist to foster the development of children, wherein education personnel and communication agencies work in collaboration, chances of development of students are much brighter. Parents and community need tounderstand the changing world and how schools are providing for the students with the skills for the success in 21st century. Progressive schools cooperatively plan their educational programmes with parents and the community whether at the school site or as support to their children at home. Parents must interact with

teachers so that they may know more details about children. This would enable teachers to provide children with appropriate learning experiences that suit them best, especially in an inclusive set-up.

Unless there is cooperative atmosphere prevailing the influences of the various agencies may be at variance and even counteract one another. If all the stakeholders join hands in providing quality education schools can then improve society. Through evaluative measures children understand, maintain and perpetuate culture. The community then would realise the changes brought about by educational institutions that not only affect learners but also the community at large. Community is very educative resources that can vitalise and enrich the instructional and evaluative processes in the educational institutions.

Making optimum use of community resources for enhancing excellence is an important aspect of education today. Administrators and teachers need to decide and plan adequate strategies for exploring the community resources for enriching students in every possible way. A committed partnership among parents, industries and the community is the need of the day.

Their practice of Evaluation of Humanitarian Action (EHA) and Development Evaluation (DE) initially focused almost exclusively how evaluation can jointly bring about participatory evaluation for promoting empowerment and capacity building in the society by the extended contribution of social media.

2.9: Let us Sum Up

2.9: Unit End Exercise

2.10: References

- Krishnan, D. K., Thamarasseri, I. (2013). Contemporary Issues in Indian Education, Kanishka Publishers, Distributers.
- Aggarwal, J. C. (2005). Essentials if Examination System Evaluation, Tests and Management, Vikas Publishing House Pvt. Ltd.
- Sidhu, K. S. (2005). New Approaches to Measurement and Evaluation. Sterling Publishers Pvt. Ltd.
- Dr. Mrunalini, T., Prof. Reddy, K. S. S. (2011). Education Evaluation, Neelkamal Publications Pvt. Ltd.
- Dr. Panda, P.K. (2017). Educational Evaluation, A.P.H Publishing Corporation.
- Shaw, I., Greene, J., Mark, M. (2013). Handbook of Evaluation Policies, Programs and Practices, Sage.
- https://www.nap.edu/read/10023/chapter/8#63
- https://www.joe.org/joe/1968winter/1968-4-a4.pdf
- https://www.betterevaluation.org/sites/default/files/EA_PM%26E_toolkit_module_1_communication_for_publication.pdf
- https://corporatefinanceinstitute.com/resources/knowledge/strategy/strategic-planning/
- http://www.yourarticlelibrary.com/statistics-2/evaluation-in-teaching-and-learning-process-education/924
- https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/developing-assignments/cross-discipline-skills/teaching-problem-solving-skills
- http://homepages.uc.edu/~thomam/Intro_OOP_Text/Problem_Solving.html
- https://asq.org/quality-resources/problem-solving

Unit -3 □ Teaching-Learning and Evaluation

Structure

3.1. Introduction

Evaluation is a comprehensive term and plays a critical role in teaching-learning process. Evaluation of student learning requires the use of a number of techniques for measuring students' achievement. It is more than a mere collection of techniques. It begins with the identification of the goals and ends with the judgement concerning the extent to which those goals have been attained.

3.2: Objectives

After the completion of this unit, learners will be able to -

(i) understand the contexts, meaning and nature of evaluation of learning, evaluation of learning and evaluation in learning;

(ii) explain the tools for evaluation and its process of standardization;

(iii) understand about the equity and fairness in evaluation including its adaptations and accommodations;

(iv) know about format, content and mechanics of report writing;

(v) conceptualize the Mastery level learning and contribution of Bloom.

3.3. Evaluation of learning, Evaluation for learning and Evaluation in learning: Contexts, Need and nature

3.3.1. Meaning and Nature of Evaluation

Evaluation plays a vital role in the teaching-learning process. It facilitates teachers and learners to enhance respective teaching and learning outputs. Its nature is as follows:

(a) It is a continuous process and a regular exercise.

(b) It helps in forming the value judgement, educational status and learning achievement of students.

(c) Evaluation in one form or other is inevitable in the teaching-learning process.

(d) In learning, it contributes to formulation of objectives, designing of learning experiences and assessment of learner performance. Apart from this, it is needed to bring improvement in teaching and curriculum. It provides accountability to the society, parents, and to the education system.

(e) A simple representation explaining the role of evaluation in the teaching-learning process is shown below:

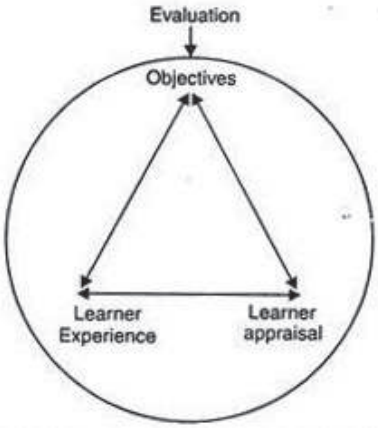


Fig. 3.1 : Representation of the Role of Evaluation in the Teaching-Leaching-Learning Process

From the diagram in Fig 3.1, it can be said that evaluation has four different aspects, namely, (i) Objectives, (ii) Learning experiences, (iii) Learner appraisal, and (iv) Relationships among the three.

According to Gronlund and Linn, evaluation is a systematic process of collecting, analyzing and interpreting information to determine the extent to which pupils are achieving instructional objectives.

Beeby (1977) has described evaluation as "the systematic collection and interpretation of evidence leading as a part of process to a judgement of value with a view to action".

The four important elements in this definition are: (i) systematic collection of evidences, (ii) its interpretation, (iii) judgement of value, and (iv) with a view to action.The first element 'systematic collection' implies that whatever information is gathered, it should be acquired in a systematic and planned way with some degree of precision. The second element, 'interpretation of evidence', is a serious aspect of the evaluation process. The mere collection of evidence does not by itself constitute the evaluation work. The information gathered for the evaluation of an educational programme must be carefully interpreted.The third element, 'judgement of value', takes evaluation far beyond the level of mere description of what is happening in an educational enterprise, but requires judgements about the worth of an educational endeavour. Thus, evaluation not only involves collecting and interpreting information about how well an educational programme is going on and reaching its goals but also judgements about the goals themselves. It includes questions about how well a programme is trying to meet larger educational goals. The last element, 'with a view to action', introduces the demarcation between an undertaking that results in a judgement of value with no specific reference to action (conclusion-oriented) and one that is deliberately undertaken for the sake of future action (decision-oriented).

Educational evaluation is clearly decision-oriented and is undertaken with the purpose that some action will take place as a result. It is designed to lead to better policies and practices in education.

3.3.2. Need

Educational evaluation is necessary as it assesses the effectiveness of an educational experience which is measured against the instructional objectives. Evaluation is carried out to fulfill the following needs:

(a) It helps a teacher to explore his pupils in details. The child's abilities, interest, aptitude, attitude etc. are to be identified so as to instruct him accordingly.

(b) It helps the teacher to determine, evaluate and refine his/ her instructional techniques.

(c) It helps him/ her in setting, refining and clarifying the educational objectives.

(d) It helps him/ her to study the entry behavior of the students.

(e) It helps an administrator in educational planning and guides him/ her to take educational decisions regarding selections, classification and placement. Education is a complex process. Thus, there is a great need of continuous evaluation of its processes and products. It helps to design better educational programmes.

(f) The parents are eager to know about the educational progress of their wards and evaluation can assess their progress from time to time.

(g) Determination of objectives based on an accurate information regarding pupil's abilities, interest, attitude and personality traits and such information is obtained through evaluation.

(h) Evaluation helps us to know whether the instructional objectives are achieved or not. Through evaluation better strategies for education can be adopted.

(i) A sound evaluation programme clarifies the aims and objectives of education and helps in reformulation of these aims and objectives.

(j) Evaluation studies the 'total child' and thus helps us to undertake special instructional programmes, such as enrichment programme for the bright and remedial programmes for the backward.

(k) It develops good study habits, increasees motivation and nurtures the abilities and skills among the students, discusses the results of progress and gets appropriate feedback.

(l) It helps us to undertake appropriate guidance services.

Therefore, it is evident that evaluation is quite essential for promoting pupil growth. It is equally helpful to parents, teachers, administrators and students.

3.3.3. Evaluation of Learning

The evaluation that is used primarily at the end of any term in a school is known as 'Evaluation of Learning'. Its objective is summative, intended to certify learning

and report to parents and students themselves about the individual learner's progress in the school, usually by highlighting students' relative position compared to other students. Evaluation of learning in classrooms is typically done at the end of a term (e.g., a unit, course, a grade, a key stage or a program) and takes in the form of tests or examinations that consist of questions drawn from the learning content studied during that particular period of time. In Evaluation of Learning, the results are expressed symbolically, usually as marks across several content areas to report to parents.

This is a kind of evaluation that still dominates in most classrooms, especially in schools. Teachers use the tests to evaluate the quantity and quality of student work, and the bulk of teacher effort is taken up in evaluation, in marking and grading. Weightage is given on comparing students and feedback to students comes in the form of marks or grades with little guidance or advice for future improvement. These kinds of testing events indicate which students are performing well and which ones are meeting the expected standard. Typically, they do not give much indication of mastery of particular ideas or concepts because the test content is generally too limited and the scoring is too simplistic to represent the broad range of skills and knowledge that has been covered. But this lack of specificity is not a problem because the teachers' perceived purpose of the evaluation is to produce a rank order of the students and assign a symbol to designate the students' position within the group, whatever group it might be. Teachers maintain huge records of student achievement that are used only for justifying the grades that are assigned.

3.3.4. Evaluation for Learning

Evaluation for Learning offers an alternative perspective to traditional assessment in schools. It shifts the weightage from summative to formative evaluation, from making judgements to creating descriptions that can be used in the service of the next stage of learning. Consistantly, it is used to evaluate the progressive stages of concept formation of a learner and to redesign his/ her teaching-learning process on the basis of the result of 'evaluation for learning'.

When they are doing Evaluation for Learning, teachers collect a wide range of data so that they can modify the learning task/ assignment for their students. They design evaluation tasks that focus on what students know and can do already and use the insights that come from the process to design the next steps in observation, worksheets, questioning in class, student-teacher conferences or whatever mechanism is likely to give them information that will be useful for their planning and teaching.

Marking is not designed to make comparative judgements among the students but to highlight each students' strengths and weaknesses and provide them with feedback that will improve their learning.

Clearly, teachers are the central characters in Evaluation for Learning as well, but their role is quite different from that of the previous approach. In Evaluation for Learning, teachers use their personal knowledge about the students and their understanding of the context of the evaluation and the curriculum targets to recognize particular learning needs. Evaluation for Learning happens in the middle of learning, when chances are often more than once, and not at the end. It is interactive, with teachers providing assistance as part of the evaluation. It helps teachers to provide the feedback to frame the next steps. It depends on teachers' diagnostic skills to make it work.

Record keeping, in this approach may include a grade book, but the records on which teachers rely on tools like checklists of student's progress against expectations, artefacts, portfolios of students' work over time, and worksheets to trace the progress of students along the learning continuum.

3.4. Tools for evaluation and process of standardization

3.4.1.Tools for Evaluation

Tools are required to gather information for evaluation. Interpretation of gathered information may be in the form of numerical scores, grades as well as in qualitative terms for performance on both scholastic and non-scholastic areas of learning. Interpretation of student's attainment may be measured at three levels:

(a) With reference to the learner himself/ herself and the current status of progress,

(b) To identify the status of learner with reference to his/her peer group (percentile rank), and

(c) With reference to the criteria, or the expected level of learning for required skills.

Before using any tool for evaluation, factors like its relevance, validity, reliability, fairness, objectivity and speed must be considered. Some of these evaluation tools that are used to collect evidence of the student's performance include:

(a) Unit Tests and Achievement Tests: It is a test developed for measuring the level of a skill or knowledge learned in a given concept, usually through

planned training/ instruction. It can cover a broad range of formal and informal assessments that may be given at various points during or at completion of a learning instruction. Through questions and problems; one can find out what children know, think, imagine and feel. Even the ability to make a set of questions for given answers is a valid test of learning. A teacher can develop various types of questions like Supply-Type questions (Essay, Short-Answer, Very Short-Answer, Fill in the Blanks); Transformation-Type questions (Pictorial, Interpretive etc.), Selection-Type questions (Alternative Response like True/ False, Match the Columns, Multiple-Choice etc.).

(b) *Oral Tests*: These are conducted to formally evaluate if a student has the knowledge and understanding of some particular key-concepts of the curriculum. In an oral test, the 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 response, usually using rating sheets that contain the answers to the questions. Communication in an oral test is highly structured and usually one-way. For objectivity, student answers should be either recorded on digital recorder or on paper.

(c) *Assignments*: These are used for both learning and evaluation. Skills like presentation of information in a systematic way, organization of the important points on a given topic, originality, creativity etc., are evaluated based on specific assignments designed for such abilities and skills. These may be developed as an extension of classroom lesson, self-evaluation situation, or for detailed study of specific topics; based on the instructional objectives of the curriculum.

(d) *Quiz*: It is a form of game or mind-sport in which the players (as individual or in team) attempt to answer questions correctly. The results of a well-designed quiz often provide valuable insight into how effectively the course material is being presented. It highlights the subject areas and skill-sets in which the student is particularly strong as well as points out those areas which would benefit them. The quiz may be question-based or it may be pictorial or in form of puzzles etc.

(e) *Anecdotal Records*: These are used to record specific observations of an individual student behaviours, skills and attitudes as they relate to the learning outcomes. Such notes provide cumulative information on student learning and direction for further instruction. They are brief, objective and focused on specific outcomes;

and are ideally taken during or immediately after an activity for accuracy of records. These are informal written observational notes in the form of a story, that teacher records about what students are learning, their academic performance, learning behavior, their achievements and social interactions.

(f) *Projects*: These are undertaken over a period of time and generally involve collection and analysis of quantitative and qualitative data. They are useful in theme-based tasks to be completed as classwork and/ or homework as an individual or in groups. They can be open-ended or structured and should be based on contexts outside the textbook but related to the child's environment/ culture/ lifestyle/ community based social programs.

(g) *Portfolio*: It is a collection of student work gathered to demonstrate student performance on specific skills and knowledge, generally linked to state content standards. Portfolio contents are individualized, and may include wide ranging samples of student learning, including but not limited to actual student work, observations recorded by multiple persons on multiple occasions, test results, record reviews, or even video or audio records of student performance. The portfolio contents are scored according to pre-determined scoring criteria, usually through application of a scoring rubric to the varying samples of student work.

(h) *Performance Assessment*: It is a direct measure of student concept, knowlwdge or skills, usually in a one-on-one assessment. It can be highly structured, requiring a teacher or test administrator to give students specific items or tasks similar to a traditional paper and pencil test, or it can be a more flexible item or task that can be adjusted based on individual student's needs. For example, the teacher and the student may work through an assessment that uses manipulatives, and the teacher observes whether the student is able to perform the assigned tasks. Generally, the performance assessments used with students with significant cognitive disabilities are scored on the level of independence the student requires to respond and on the student's ability to generalize the skills, and not simply on accuracy of response. Thus, a scoring rubric is generally used to score responses similar to portfolio or body of evidence scoring.

(i) *Checklists*: Checklists are lists of skills, reviewed by persons familiar with a student who observe or recall whether students are able to perform the skills and to what level. Scores reported are usually the number of skills that the

student is able to perform successfully, and the settings and purposes where the skill was observed. It is a tool for identifying the presence or absence of conceptual knowledge, skills or behaviours. It can be used to verify whether the student has followed the key tasks in a procedure, process or activity to be completed. A checklist itemizes task descriptions in one column and provides space beside each column to mark the completion of the task.

(j) *Inventories*: These are usually used to assess personality of students. It is constructed in the form of a questionnaire, consists of questions or statements to which the students respond by saying 'yes/no' or 'agree/disagree'. It is important, that the statements of an inventory are put in the first-person language. For example, a teacher may develop an inventory for assessment of interpersonal skills of students by using statements like: "I shake hands if other person offers", "I can make arrangements with peers for social activities", "I know who can help me, if I'm unable to resolve a conflict" etc.

(k) *Rating Scale*: Rating is a term applied to expression of opinion or judgement regarding some situation, object or character. Opinions are usually expressed on a scale or values. Rating scales are devices by which such judgements may be quantified. Rating scale is a method by which we systematize the expression of opinion concerning a trait/ object/ event of a person. It provides a scale with a set of points which describe varying degrees of dimensions of an attribute being observed.

(l) *Rubrics*: These use a set of criteria to evaluate a student's performance. They consist of a fixed measurement scale and a pre-determined detailed description of the characteristics of each level of performance. These descriptions focus on the quality of the product or performance and not the quantity. Rubrics give structure to observation; and is a coherent set of criteria for students work that includes description of levels of performance quality on the criteria. It can consist of rating of a performance, which can be generic (viz., Very Poor to Excellent) or customized (viz., Detrimental to Highly Effective).

(m) *Matrix*: It requires students to distinguish between related or seemingly similar items or concepts. It may be considered as an extension of a double matching-type items, wherein more than two responses are linked to a stimulus. In a matrix, a stimuli is presented vertically (in a row) whereas, responses are presented horizontally (in columns). Students are asked to check-mark whether response in each cell on horizontal column is true for each stimuli. For example,

a matrix can be developed for deficiency of different vitamins and related diseases.

Choosing the right evaluation tool is essential for producing useful, credible and rigorous evidence in evaluation. These tools can generally be either direct or indirect measures. Direct measures are those in which the products of student's work are evaluated in the light of learning outcomes of the curriculum. Indirect measures are not based directly on student academic work, but rather on the perception of outside agents like teachers, peers etc. while both direct and indirect measures have their place in holistic evaluation, it is most useful to start with direct measures for evaluation.

3.4.2. Process of Standardization:

The process of standardization consists of four main stages. They are (I) Planning, (II) Preparing the test, (III) Trying out of the test, and (IV) Evaluating the test.

Sage 1: *Planning:*

Before constructing a standardized test, systematic planning is required. Proper planning includes the following activities:

(a) Fixing up the objectives/ purposes

(b) Determining the weightage to different instructional objectives,

(c) Determining the weightage to different content areas,

(d) Determining the item types to be included,

(e) Preparation of the table of specification- Blue Print,

(f) Taking decision about its mechanical aspects like time duration, test size, total marks, printing, size of letters, etc.

(g) Giving instructions for scoring of the test and its administration procedure,

(h) Weightage to different categories of difficulty level of the questions is to be fixed.

Stage II: *Preparing the Test:*

The next step after the finalization of the blue-print is writing appropriate question items in accordance with the broad parameters set out in the blue-print. At this stage we have to prepare:

(a) The test items,

(b) The directions to test items,

(c) The directions for administration,

(d) The directions for scoring,

(e) A question-wise analysis chart.

Stage III: *Trying Out of the Test:*

Since the test is being prepared by a group of persons and experts, it cannot be entirely error-free. Therefore, all standardization requires preparation of a try-out form of the test and its testing over a sample population. The purposes of the trying-out are as follows:

(a) To identify the defective or ambiguous items,

(b) To discover the weakness in the mechanism of test administration,

(c) To identify the non-functioning or implausible distractors in case of multiple choice tests,

(d) To provide data for determining the difficulty level of items,

(e) To provide data for determining the discriminating value of the items,

(f) To determine the number of items to be included in the final form of the test,

(g) To determine the time limit for the final form.

The main purpose of trying out is to select the good items and reject the poor items. The try-out is done in following three steps:

(i) Preliminary Try-out: It is done individually to improve and modify the language difficulties and ambiguity of the items. This try-out is done on 10 or 15 individuals.

(ii) The Proper Try-out:

It is done on a group of at least 40 students/ individuals. The purpose is to select good items for the test and to reject poor items. This step includes the following activities:

- *Item Analysis*: The worth of an item is judged from three main angles, i.e., difficulty index of the item, discriminating power of the item, and effectiveness of distractors.
- *Preparing Final Draft of the Test*: After item analysis only good items with appropriate difficulty level and with satisfactory discriminatory power are

retained and these items form the final test. Accordingly, good items are selected out of the large number of items.

- Final Try-out: It is done on a large sample of about 400 individuals for estimating the reliability and validity of the test. Its purpose is to decide the duration of the test also.

Stage IV: *Evaluating the Test:*

It is done in the following manner:

(a) The final form and the answer sheet of the test are printed.

(b) Time required for the test is determined by taking average of three pupils' time on answering the test. The pupils selected for the purpose, represent three groups - bright, average and below average.

(c) Instruction to the persons who will administer the test is prepared and printed.

(d) The scores are tabulated and various measures of central tendencies and measures of variability are found out.

(e) The validity of the test scores is estimated by correlating the test scores with some other criterion. The construct validity can be found out by factor analysis.

(f) In evaluating newly constructed test reliability is also estimated.

(g) Lastly, we will have to evaluate how far a test is usable from administration, scoring, time and economy point of view. The test must provide percentile norms, standard-score norms, age-norms and grade-norms which will facilitate the interpretation of scores.

3.5. Equity and fairness in evaluation including adaptations and accommodations

3.5.1. What are the issues of fairness and equity?

If students learn according to their own learning style, then it is the duty of the teacher to evaluate them according to their respective learning styles. Lam (1995) suggested that evaluation is unfair if students are - (i) not provided an equal opportunity to demonstrate what they know, (ii) judged on abilities and needs using biased assessments, and (iii) limited in their educational opportunities because of assessment information. Although some teachers may insist that equality means

that all students use the same test that is scored in the same way, bias results from various factors like gender, ethnicity, race, linguistic background, socio-economic status, or disability (Lam, 1995). It is unlikely that any group of students would have all of these characteristics. Therefore, administering a single test to all students and scoring this test in the same way for all children is absolutely unfair.

The National Centre for Research on Evaluation, Standards and Student Testing (CRESST, 1996) defined equity as the concern for fairness (i.e., that assessments are free from bias or favouritism). An assessment or evaluation technique that is fair enables every student to demonstrate what they can do. At the minimum, teachers should review their assessments to make sure that the assessment is free from (i) stereotypes, (ii) situations that may favour one culture over another, (iii) language demands that prevent some students from showing their knowledge, and (iv) form or content that exclude students with disabilities or limited English proficiency. Biases may occur because of unfamiliar language or format, not because the student does not grasp the concept (Nickell, 1993).

Fair assessment and evaluation is adapted to the individual student's instructional context and special background. It recognizes variations in prior knowledge, cultural experience, language proficiency, cognitive style, and interests (Lam, 1995). Individualization of assessment can be implemented at different levels in the assessment process, ranging from choice of assessment approach (e.g., project instead of a test), content (e.g., selecting a topic to write an essay on, allowing translation), administration (e.g., flexible time, allowing a dictionary), scoring (e.g., differential weighting) and interpretation (e.g., using a sliding grading scale).Using assessment methods and administration procedures appropriate to the student reduces bias because factors that could inhibit the student's performance are reduced. The student's performance is a truer measure of what he or she knows or can do. For example, in place of a paper-and-pencil word problem test in mathematics to be administered to a class, a teacher could give the test orally to a LEP student, rephrasing the questions and using the student's native language, if necessary. When assessment content is customized, congruence between assessment and instruction for all students is enhanced. By adjusting scoring and grading procedures individually based on student background and prior achievement, fairness is directly addressed.

For the teachers, fair evaluation means that they frequently design four or five forms of a test that cover the same content. Tests may be read to the student with responses recorded by a scribe, additional time may be given to take the tests, the tests may be taken in a different environment, or one sentence may be written

instead of three. Most of all, it means that evaluation is a daily part of the teaching process, and that instruction and evaluation are integrated.

Stainback, Stainback, and Stefanich (1996) argued that one set of objectives cannot be expected to meet the unique learning abilities of all students in inclusive classrooms. They stated that although not everyone will achieve the same objectives, whatever knowledge can be gained is valuable and worthwhile. Jason Haap, however, suggested that alternative forms of evaluation can cater to an inherent accommodation. For example, the same structure for a performance-based project can be used for various learners, but the expectations of outcomes based on individual student ability can be varied. The project is the same but the participants are different.

Assessment for its intended purpose is unfair, if (i) students are not provided with equal opportunity to demonstrate what they know (e.g., some students were not adequately prepared to perform a type of assessment task) and thus the assessments become biased; (ii) these biased assessments are used to judge and tking decesions about the student capabilities and needs and (iii) these distorted views of the students are used to make improper educational opportunities for them.

3.5.2. Adaptations, accommodations and modification

Adaptations, accommodations and modifications may seem like interchangeable terms, but when it comes to inclusion they carry significantly different meanings (Table 1).

Table 1: Adaptations, Accomodations and Modifications

Adaptations

Accommodations	Modifications
Adaptations that do not fundamentally alter all the work standards or lower expectations in either the instructional or assessment phases of a course of study can be designated as 'accommodations'.	Adaptations that alter or lower standards or expectation can be termed 'modifications'. These modifications, although providing access, will necessitate careful selection of assessment components to achieve accountability of performance.

According to NCERT (2015):

(a) Adaptation refers to adjusting assessments, material, curriculum, or classroom environment to accommodate a student's needs, so that he/ she can participate in and achieve the teaching-learning goals.

(b) Modifications involves making changes to learning goals, teaching processes, assignments and/ or assessments to accommodate a student's learning needs.

(c) Accommodations in the form of adaptations occur when teachers differentiate instruction, assessment and materials in order to create a flexible learning environment. For example, a student could be working on below grade level learning outcomes in Language, Arts and at grade level in all other subjects or courses, some of which require reading materials at the lower reading level.

Adaptations include all, but are not confined to:

(a) audio tapes, electronic texts, or a peer helper to assist with assigned readings;

(b) access to a computer for written assignments (e.g., use of word prediction software, spell-checker, idea generator);

(c) alternative to written assignments to demonstrate knowledge and understanding;

(d) advance organizers/graphic organizers to assist with following classroom presentations;

(e) extended time to complete assignments or tests;

(f) support to develop and practices study skills, for example, in a learning assistance block;

(g) use of computer software which provides text to speech/ speech to text capabilities;

(h) pre-teaching key vocabulary or concepts; multiple exposure to materials;

(i) working on provincial learning outcomes from a lower grade level.

Accommodations in the form of modifications are instructional and assessment-related decisions made to accommodate a student's educational needs that consist of individualized learning goals and outcomes which are different from the learning outcomes of a course or subject.

Modifications should be considered for those students whose special needs are such that they are unable to access the curriculum (i.e., students with limited awareness of their surroundings, students with mental/ physical health problems,

students medically and cognitively/ multiply challenged). In many cases, modifications need only form part of an educational program for a student with special needs, and they need not be a permanent or long-term solutions. Whether to use modifications should be reviewed on a regular basis. Decisions about modifications should be subject or course specific wherever possible. For example, a student with intellectual disability may require modifications to a specific subject area such as mathematics; however, modifications may not be required to meet the provincial outcomes in physical education.

3.5.3. What adaptations and accommodations are useful in testing situation?

CRESST (National Center for Research on Evaluation, Standards and Student Testing, 1999) defined accommodations and adaptations as modifications in the way assessments are designed or administered so that students with disabilities and students with limited English proficiency can be included in the assessment. The Center for Innovations in Special Education (1998) stated that the purpose of an accommodation is to help each student show what he or she knows and can do and to remove the impact of the disability. The intent is to provide equal footing. Accommodations do not change what the test is evaluating. Typical accommodations include modifications in -

(a) Time or schedule of the assessment,

(b) Test directions,

(c) Presentation of questions, and

(d) Test setting.

The Assessment Accommodation Checklist (Elliot, Kratochwill, & Gilbertson, 1998) was developed with input from general and special educators. This instrument was designed to help maintain consistent documentation and implementation of testing accommodations for students with disabilities. The Assessment Accomodations Checklist contains 74 accommodations in the domains of (a) motivation, (b) assistance prior to administration of the test, (c) scheduling, and (d) setting, assessment directions, assistance during assessment, use of equipment or adaptive technology, and changes in format, which has been shown in following table:

Table 2. Accommodations in the areas of the assessment checklist

Area	Accommodation
Motivating	Working toward a reward for continued effort throughout the assessment
Assisting prior to administering test	Teaching test-taking skills
Scheduling	Additional time: breaking the sessions into several shorter sessions
Setting	Distraction-free space; individual administration
Directing	Paraphrase directions; reread directions
Providing assistance during assessment	Record responses for the student
Using aids	Electronic reader
Changing test form and content	Braille or large print; audiotaped questions

3.5.4. Individual Adaptation and Accommodation Plans

The following needs to be kept in mind before any adaptation are made:

(a) Correlate adaptations to Individual Educational Plans/ Individual Training Plans.

(b) Do not adapt just for the sake of adaptation, but adapt to meet the student's need.

(c) A child with a learning difficulty may not require adaptations in all the nine areas. The teacher should determine the best and the most appropriate methods to address students' needs.

(d) The teacher is not expected to make different programs for students; but managed the differences using a variety of approaches.

(e) The teacher should find ways to meet the learning needs within the unit or lesson being taught.

3.5.5. Types of Adaptations:

(a) Input: Multiple experiences with materials are to be provided for different learning styles (visual, auditory and kinaesthetic learners).

(b) Output: Flexibility should be maintained in assessing and evaluating learning outcome by providing alternatives to written assignments/ tests.

(c) Size of the Content: The content may be reduced. The most critical portions and some parts may be omitted to ensure maximum learning of each child. Planning of the content to cater to pupils' needs may be best described using the pyramid mode.

(d) Time: Number or nature of questions should be reduced or extra/ extended time should be given to complete assignments and tests. Frequent breaks and additional instructional time should be given.

(e) Difficulty level: By understanding the limitations and difficulty level of a student, appropriate aids and support can be used to help overcome or reduce the difficulty to ensure maximum learning.

(f) Participation: Activities done in the classroom must ensure active and equal participation of all the students.

(g) Level of Support: Level of support will depend on the nature of difficulty faced by the student in terms of physical, cognitive or sensory issues.

(h) Alternative Goals: Goals or objectives are changed though the content taught is the same.

*(i) Substitution of the Curriculum:*The intended curriculum is replaced by an easier one. This is usually practiced in special schools. ///////////

3.6. Report writing: Format, content and mechanics

3.6.1.Format and Content of Report Writing:

The following outline or format is the typical format prepared according to the American Psychological Association's Publication Manual.

I. Title Page
   - (a) Title
   - (b) Author's Name and Affiliation
   - (c) Running Head
   - (d) Acknowledgements (if any)

II. Abstract

III. Introduction (no heading)

(a) Statement of the Problem

(b) Background/ Review of Literature

(c) Purpose and Rationale/ Hypothesis

IV. Method

(a) Subjects

(b) Apparatus (if any)

(c) Design (if a complex design has been incorporated)

(d) Procedure

V. Results

(a) Tables and Figures

(b) Statistical Presentation

VI. Discussions

(a) Support or Non-support of Hypotheses

(b) Practical and Theoretical Implications

(c) Conclusions

VII. References

VIII. Appendix (if appropriate)

I. **Title page**

The first page is the title page which basically contains three elements: title, author(s) name and affiliation, as well as a running head.

(a) Title and running head: The title should be brief and should clearly mention the purpose of the study. It should not be stated so broadly that it seems to provide such an answer that it cannot be generalized either from the data gathered or from the methodology employed. Abbreviations should not be used in the title. The best length of the title is 12 to 15 words approximately. Introductory phrases should not be given. The title should be typed in upper case and lower case letters, centred on the page and when two lines are needed they should be double-spaced. Running head is an abbreviated or a short title which is printed at the top of the pages of a published article to identify the articles. The running head or the short title which should be a

maximum of 50 characters including letters, punctuation and spaces between words, may be typed in upper right side of the pages.

(b) Author's name and affiliation: On the title page author's name should be centred below the title and the next line should indicate the name of the institution to which the author is affiliated. In case of more than one author from the same situation, the affiliation should be listed last and only once. Acknowledgements, if any, should be entered at the bottom of the title page. Running head and acknowledgements should be separated by a double space.

II. Abstract

The abstract is written on a separate sheet of paper which is page 2. It describes the study in about 100 to 150 words. In fact, the abstract is the summary of the study, which includes the problem under the study, method, such as characteristics of the subjects, research design, apparatuses, results (including statistical significance levels) and conclusions as well as implications. References must not be cited in abstract.

III. Introduction

This starts on the third page. From this, the text of the reports start and all the sections of the test follow one another without a break, that is, Introduction, Method, Results and Discussions follow one after another without any break and not that they are started on new pages. Page 3 where Introduction starts is not labelled as 'Introduction'. However, the running head on the upper right side of the page and the complete title without the name of the author in the centre of the page are entered. A good introduction has following three components:

(i) The researcher must give a clear and definite statement of the problem and must develop it logically in the light of relevant studies. He/ She must indicate the need for the present research and why the problem is important in terms of theory and/ or practice.

(ii) The second important component of introduction is the review of previous literature. The researcher must try to establish an understanding of the existing literature relevant to his or her study. He needs to connect logically the previous body of literature with the present study.

(iii) The third and final component of introduction is to formulate a clean rationale of the hypotheses to be proposed. Every hypothesis must be clearly stated so

that it is clear how it would be scientifically tested. Different variables and terms should be properly defined and investigated.

IV. Method

The main body of the report continues with method section after introduction. The major purpose of this section is to explain the learned reader how the research was conducted. The method section is separated from introduction by the centred 'Method'. The sub-sections are subsequently labelled at the left margin and underlined. In general, the following sub-sections, in order, are included in method section:

(a) Population and Sample/ Subject: The population should be clearly specified as well as the method of collecting samples should also be stated. In specifying the population such characteristics like age, sex, geographical location, SES, race, institutional affiliation, etc., should be clearly mentioned. Not only that, the total number of subjects and the number assigned to each condition should also be spelled out. The researcher should also state that the treatment given to subjects was in accordance with the ethical standards of APA.

(b) Variables: Theoretical propositions consists of relationships between/among abstract constructs. These require measuring constructs accurately before the strength of their relationships are measured.Identification of these measuring constructs are known as variables. It may be 'independent', 'intervening'. 'categoroical' or 'dependent.

(c) Tools/ Apparatus: If the research has been conducted with the help of some relevant apparatuses, their names and model numbers should also be mentioned so that another researcher, if he wishes, may obtain or construct it. If possible, the researcher should provide a diagram of the apparatus in his write-up and this is extremely important where the apparatus is a complex and novel one.

(d) Design: The type of research design should also be spelled out after the subsection of apparatus. Here the procedure for assigning participants to groups as well as labels to groups (experimental or control) should also be indicated.

(e) Procedure: this sub-section describes the actual steps carried out in conducting the study.

IV. Results

The third section of the main body is results whose purpose is to provide sufficient information about how the conclusion was drawn. The heart of this section is the presentation of data relevant to the hypothesis/ Research Question. All relevant data are presented including those that do not support the hypothesis. Tables and

figures are commonly employed for supplementing textual material. A table consists of several numbers that summarize the major findings of the experiment or the study. A figure is the graph, photograph, chart or like materials, which are relevant particularly for certain kinds of data like showing the progress of learning or maturation over designated period. Data in the text and in tables or figured should not be contradictory, rather, they should be complementary. Results of the statistical analyses carried should be provided and the level of significance for these statistical analyses should also be presented. However, they should not be interpreted and discussed in this section.

V. Discussions

The final section of the main body report is discussion. The major function of this section is to interpret the results of the study and to relate those results to other studies in the same area. The implications of the study including the hypotheses, supported or not supported are discussed. If the findings are contrary to the hypothesis, some new explanation is required so that a new hypothesis may be advanced. New hypotheses may also be advanced about any uncommon deviation in the results. Sometimes faulty hypotheses can be modified to make them consistent with the results obtained. Negative results should also be discussed. Such results occur when a hypothesis predicts something but the results do not support that prediction. A brief speculation about why they occurred, is sufficient. A short discussion of the limitations of the present study and proposals for future research is appropriately discussed here. The researcher finally includes conclusions that reflect whether the original problem is better resolved as a result of the investigation.

VI. References

'References' section begins at a new page with the label "References" at the centre. References comprise of all the documents including journals, books, technical reports, computer programmes and unpublished works mentioned in the text of the report. References are arranged in alphabetical order by the last name of the author(s) and the year of publication in parenthesis or in case of unpublished citations, only the reference is cited. Sometimes no author is listed and then, in that condition the first word of the title or sponsoring organization is used to begin the entry. When more than one name is cited, they are separated by semicolons. The researcher should check carefully that all references cited in the text appear in the references and vice-versa.

References should not be confused with Bibliography. A bibliography contains everything that is included in the reference section plus other publications which are useful but were not cited in the text or manuscript. The Publication Manual of the American Psychological Association (6th Edition) has given some specific guidelines for writing references of various types of works.

VII. Appendix

In an appendix those items of information are provided that would be inappropriate or too long for the main body of research. Each appendix appears as a new page with the level 'Appendix' along with the identifying letter, centred. Usually, in appendix the materials such as tests, detailed statistical treatments, computer programmes, etc., are included.

3.6.2. Mechanics of Report Writing

The following points deserve mention so far as the mechanics of writing a report are concerned:

(a) *Size and physical design:* The manuscript should be written on unruled paper 8½ inches×11 inches size. If it is to be written by hand, then black or blue-black ink should be used. A margin of at least one and one-half inches should be maintained at the left hand and of at least half an inch at the right hand of the paper. There should also be one-inch margins, top and bottom. The presentation of the paper should be neat and legible. If the manuscript is to be typed, then all typing should be double-spaced on one side of the page only except for the insertion of the long quotations.

(b) *Procedure:* Necessary steps in writing the report should be strictly adhered.

(c) *Layout:* Keeping in view the objective and nature of the problem, the layout of the report should be thought of and decided and accordingly adopted.

(d) *Treatment of quotations:* Quotation should be placed in quotation marks and double spaced, forming an immediate part of the text. But if a quotation is of a considerable length then it should be single-spaced and indented at least half an inch to the right of the normal text margin.

(e) *The footnotes:* Regarding footnotes one should keep in view the followings:

- The footnotes are meant for cross references, citation of authorities and sources, acknowledgement and elucidation or explanation of a point of view.

- Footnotes should be placed at the bottom of the page on which the reference or quotation which they identify or supplement ends.
- Footnotes should be numbered consecutively, usually beginning with 1 in each chapter separately. The number should be put slightly above the line, say at the end of a quotation.
- Footnotes are always typed in single space though they are divided from one another by double space.

(f) Documentation style: Documentary footnotes follow a general sequence in accordance to The Publication Manual of the American Psychological Association (6th Edition).

(g) The final draft: Revising and rewriting the rough draft of the report should be done with great care before writing the final draft. A friendly critic, by pointing out passages that seem unclear or illogical, and perhaps suggesting ways of remedying the difficulties, can be an invaluable aid in achieving the goal of adequate communication.

(h) Bibliography: It should be prepared in accordance to The Publication Manual of the American Psychological Association (6th Edition).

(i) Preparation of the index: At the end of the report, an index should invariably be given, the value of which lies in the fact that it acts as a good guide, to the reader. Index may be prepared both as subject index and as author index. The index should always be arranged alphabetically.

3.7. Mastery level learning

3.7.1. Concept of Mastery Learning

Mastery learning of Bloom is a beneficial approach that can provide successful and rewarding learning experiences to almost all students to reach a pre-determined level of learning. It proposes that most students could learn what schools have to teach. Further, it suggests procedures whereby most students can attain a high level of learning capabilities within the context of group-based classroom instruction. Mastery learning, enables about four-fifths of students to reach a level of achievement, which less than one-fifth attain under non-mastery conditions. The time costs for this are of the order of 10 to 20 per cent additional time over the classroom

scheduled time. It produces greater student interest in and attitude towards the subject learned, than usual classroom methods.

Mastery learning involves the identification of particular elements of learning and then the mastery of them by individual students. It provides a structure for teaching that includes whole group (class) instruction followed by small group work. It is a group-based approach to individualized instruction in which students often can learn collaboratively with their classmates. It is a way to individualized instruction within the framework of a traditional group instruction classroom setting. Mastery leaning, as developed by Dr. Benjamin Bloom, is based on the concept that teachers can help students become better learners.

3.7.2. Bloom's Mastery Learning

Benjamin Bloom outlined a specific instructional strategy to make use of the feedback and corrective procedure, labeling it "learning for mastery" (Bloom, 1968), and later shortening the name to simply "mastery learning" (Bloom, 1971). With this strategy, teachers first consolidate the concepts and skills they want students to learn into instructional units that typically involve about a week or two of instructional time. Following initial instruction on the unit, teachers administer a brief 'formative" assessment based on the unit's learning objectives. Instead of signifying the end of the unit, however, this formative assessment's purpose is to give students information, or feedback, on their learning. It helps students identify what they have learned well to that point and what they need to learn better (Bloom, Hastings, & Madaus, 1971).

Paired with each formative assessment are specific "corrective" activities for students to overcome their learning difficulties. Most teachers match these 'correctives" to each item or set of prompts within the assessment so that students need work on only those concepts or skills not yet mastered. That is to say, the correctives are "individualized". They may point out additional sources of information on a particular topic, such as page numbers in the textbook or workbook where the topic is discussed. They may identify alternative learning resources such as different textbooks, learning kits, alternative materials, CDs, videos, or computerized instructional lessons. Or they may simply suggest sources of additional practice, such as study guides, independent or guided practice activities, or collaborative group activities.

With the feedback and corrective information gained from a formative assessment, each student has a detailed prescription of what more needs to be done to master

the concepts or skills from the unit. This "just-in-time" correction checks minor learning difficulties from accumulating and becoming major learning problems. It also gives teachers a practical means to vary and differentiate their instruction in order to meet students' individual learning needs better. As a result, many more students learn well, master the important learning goals in each unit, and gain the necessary prerequisites for success in subsequent units (Bloom, Madaus & Hastings, 1981).

When students complete their corrective activities after a class period or two, Bloom recommended that they should take a second formative assessment. This second, "parallel" assessment covers the same concepts and skills as the first, but is composed of slightly different problems or questions, and serves two important purposes. First, it verifies whether or not the correctives were successful in helping students overcome their individual learning difficulties. Second, it offers students a second chance to succeed and hence, has powerful motivational value.

Some students, of course, will perform well on the first assessment, demonstrating that they have mastered the unit concepts and skills. The teacher's initial instruction was highly appropriate for these students and they have no need of corrective work. To ensure their continued learning process, Bloom recommended that these students should be provided with special 'enrichment' or 'extension' activities to broaden their learning experiences. Such activities are often self-selected by students and might involve special projects or reports, academic games, or a variety of complex, problem-solving tasks. Figure 2 illustrates this instructional sequence:

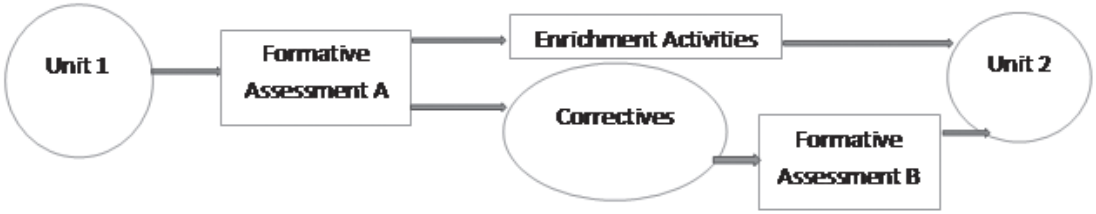


Figure 2: The Mastery Learning Instructional Process

Through this process of formative classroom assessment, combined with the systematic correction of individual learning difficulties, Bloom believed all students could be provided with a more appropriate quality of instruction than is possible under more traditional approaches to teaching. As a result, nearly all might be expected to learn well and truly master the unit concepts or learning goals (Bloom, 1976).

This, in turn, would drastically reduce the variation in students' achievement levels and eliminate achievement gaps.

In describing mastery learning, however, Bloom emphasized that reducing equalization students' achievement does not imply making all students the same. Even under the more favorable learning conditions, some students undoubtedly will learn more than others, especially those involved in enrichment activities. But by recognizing relevant, individual differences among students and then altering instruction to better meet their diverse learning needs, Bloom believed that variation among students in terms of how well they learn specific concepts or master a set of articulated learning goals could eventually reach a "vanishing point" (Bloom, 1973). As a result, gaps in the achievement of different groups of students would be minimized.

3.7.3. Designing and Implementing Mastery Learning Programmes

Education intending to design and implement successful mastery learning programmes must achieve four major tasks, namely, (a) defining mastery, (b) planning for mastery, (c) teaching for mastery, and (d) grading for mastery. Each of these major tasks can be divided into several subtasks, the attainment of which is related to the attainment of the overall task. Each of the tasks andrelated subtasks has a significant function within the context of mastery learning.

(a) Definition of Mastery

As Bloom (1968) pointed out, to develop mastery in each student's learning, teaching must be able to recognize when students have attained it. So the preliminary task is to define mastery. That is, specify the objectives of instruction in terms of skills (content as well as cognitive process) the student is expected to learn. The major function of this task is the communication of learning expectations to students, teachers, administrators, and parents. The initial subtask related to defining mastery is the identification of the most essential, critical course objectives. Subsequent to this sub-task is preparing a summative test. The functions of this test are to (i) assess the degree of student learning over the entire course, and (ii) evaluate the overall quality of student learning.

Based on an examination of the objectives and related test items a standard of performance for the summative test (typically the score to be attained) is set which, when achieved, will be accepted as mastery of the course.

Next, the entire course is divided into a series of smaller learning units. A set of objectives for each unit, based on identified inter-relationship is described. The

function of such units is to facilitate the teaching and learning of new objectives of the units.

The units are then sequenced so that the facts, concepts, principles, skills, and appreciations acquired in one unit are used over again in sub-segment units. This approach to sequencing helps to ensure retention and transfer of the things learned. Also, the sequencing helps to increase the likelihood that the subsequent objectives will be at an appropriate level of difficulty for students who have mastered the objectives of the previous unit(s).

The final subtask of defining mastery involves deciding on the evidence of mastery of each learning unit. Formative tests to measure the unit objectives are designed. These tests are intended to help teachers identify student errors and misunderstandings. Once again, as in the case of the summative test, performance standards are set for each formative test to help the teachers in the determination of masters and non-masters who will require supplementary learning material and time to become masters.

(b) Planning for Mastery

After defining mastery, the next task is to plan mastery. Planning is necessary for helping students acquire the objectives of each unit that is designed. Such plans must include activities and materials for non-masters to attain the performance standard on the unit formative test. The purpose of planning for mastery is that teachers can predict likely problems in their classroom and respond in one of a variety of appropriate, preplanned ways. In essence, planning helps teachers to monitor learning on a unit-by-unit basis.

The first subtask for mastery is to develop a general plan, often referred to as the 'original instructional plan', for helping all students attain the unit objectives. Such plan should consist of material and activities appropriate for vast majority of students.

The second subtask involves the preparation of methods for interpreting and using the information obtained from the formative tests. A set of alternative instructional material and learning activities (referred to as correctives) related to each objective of the unit's formative test is designed to reach each unit's objectives. Small group study sessions, peer or cross-age tutoring, or alternative learning aids such as different textbooks, workbooks, and audio-visual materials are often used for this purpose.

The third subtask involves allocation of appropriate amounts of time to the original instruction, corrective instruction, and testing. Such time planning helps (i) to

make realistic estimates of the amount of material and objectives that can be included in the course, and (ii) to increase the quality of the time that each student spends in learning.

(c) Teaching for Mastery

In teaching for mastery the focus has to be on managing learning rather than managing learners in the classroom. As such, "the function of the teachers to specify what is to be learned, to motivate pupils to learn it, to provide them with instructional materials, to administer these materials at a rate suitable for each pupil, to monitor student's progress, to diagnose difficulties and provide proper remediation for them, to give praise or encouragement for good performance and to review and practice that will maintain pupils' learning over long periods of time." (Carroll, 1971).

In teaching for mastery, the first sub-task is that students are informed of what they are expected to learn, how they will learn it, how they are expected to demonstrate their learning and how they are learning will be assessed. Finally they are told that they will be provided with additional time and help as needed in order to ensure their learning.

The successive subtasks following this are: (a) teaching each learning unit in sequence using the original instructional plan, (b) administering the unit's formative test before proceeding to the next unit, (c) certifying those students who have achieved the performance standard and identifying the non-masters, and (d) engaging masters in enrichment activities and/or as tutors for their 'slower' classmates, and moving the non-masters to the corrective stage of the mastery learning instructional model.

As formative provide information regarding the adequacy of instruction as well as learning, two phases of corrective instruction can be visualized. The first phase provides corrective instruction for those objectives not mastered by large number of students in the class. In this case, additional class can be taken to provide whole-class or large-group corrective instruction related to such objectives. The second phase provides alternative activities and materials that are relevant to each objective.

This cycle of original instruction, formative testing, and certification or correction is repeated unit-by-unit, until all units have been completed. This cycle is paced by the teacher to ensure all students- the 'faster' as well as 'slower'- are exposed to as much course material and as many courses as they would normally encounter.

(d) Grading for Mastery

The final major task in developing a mastery learning programme is grading for mastery. The function of this task is to reward students with grades based on their performance on the units' summative tests relative to a pre-determined standard. Some educators have expressed the desire to use formative test results as part of the grading process.

3.8. Let us sum up

- Evaluation is the systematic collection and interpretation of evidence leading as a part of process to a judgement of value with a view to action.
- Evaluation is quite essential for promoting pupil growth. It is equally helpful to parents, teachers, administrators and students.
- Evaluation of learning is intended to certify learning and report to parents and students about students' progress in school, usually by highlighting students' relative position compared to other students.
- Evaluation for learning makes judgements to create descriptions that can be used in the service of the next stage of learning.
- The various kinds of tools used in evaluation are unit tests and achievement tests, oral tests, assignments, quiz, anecdotal records, projects, portfolio, performance assessments, checklists, inventories, rating scale, rubrics, and matrix.
- The four main stages of standardization of a test are (i) Planning, (ii) Preparing the test, (iii) Trying out of the test, (iv) Evaluating the test.
- Lam (1995) suggested that evaluation is unfair if students are (i) not provided an equal opportunity to demonstrate what they know, (ii) judged on abilities and needs using biased assessments, and (iii) limited in their educational opportunities because of assessment information.
- The National Centre for Research on Evaluation, Standards, and Student Testing (CRESST, 1996) defined equity as the concern for fairness (i.e., that assessments are free from bias or favouritism).
- According to NCERT (2015), adaptation refers to adjusting assessments, material, curriculum, or classroom environment to accommodate a student's needs so he/she can participate in, and achieve the teaching-learning goals.

- Adaptations that do not fundamentally alter all the work standards or lower expectations in either the instructional or assessment phases of a course of study can be designated as 'accommodations'.
- Adaptations that alter or lower standards or expectation can be termed 'modifications'.
- According to the American Psychological Association (6th Edition), a typical format of a report should include- (i)Title Page (Title, Author's Name and Affiliation, Running Head, Acknowledgements), (ii) Abstract, (iii) Introduction (Statement of the Problem, Background/ Review of Literature, Purpose and Rationale/ Hypothesis), (iv) Method (Sample, Subjects, Variables, tools/ Apparatus, Design, Procedure), (v) Results (Tables and Figures, Statistical Presentation), (vi) Discussion (Support or Non-support of Hypotheses, Practical and Theoretical Implications, Conclusions), (vii) References, (viii) Appendix.
- Certain points, such as, size and physical design, procedure, layout, treatment of quotations, footnotes, documentation style, final draft, bibliography, and preparation of index, etc. need to be kept in mind while considering the mechanics of report writing.
- Mastery learning is a powerful approach that can provide successful and rewarding learning experiences to almost all students to reach a pre-determined level of learning.
- Education intending to design and implement successful mastery learning programmes must accomplish four major tasks. These tasks are (a) defining mastery, (b) planning for mastery, (c) teaching for mastery, and (d) grading for mastery.

3.9. Unit End Exercises

(a) Define evaluation?

(b) Why is evaluation needed?

(c) How is evaluation of learning different from evaluation for learning?

(d) Discuss the different tools for evaluation.

(e) Discuss the process of standardization of a test.

(f) Explain the issues of fairness and equity in evaluation.

(g) Differentiate between adaptations, accommodations and modifications in educational evaluation.

(h) What adaptations and accommodations are useful in a testing situation?

(i) Discuss the format and content of report writing.

(j) Explain the mechanics of report writing.

(k) Discuss the concept of mastery learning.

(l) How will you design and implement a mastery learning programme?

3.10. References

Bauer, A. & Brown, G. M. (n.d.). *Assessing learning and evaluating progress*. Retrieved from http://www.ldonline.org/article/6016/

Bloom, B. S. (1968). Learning for mastery. *Evaluation Comment* (UCLA-CSIEP), 1(2), 1-12.

Bloom, B. S. (1971). Mastery learning. In J. H. Block (Ed.), *Mastery learning: Theory and practice.* New York: Holt, Rinehart & Winston.

Bloom, B. S. (1973). Individual differences in school achievement: A vanishing point? In L. J. Rubin (Ed.), *Facts and feelings in the classroom*. New York: Walker and Company.

Bloom, B. S. (1976). *Human characteristics and school learning*. New York: McGraw-Hill.

Bloom, B. S., Hastings, J. T., & Madaus, G. (1971). *Handbook on formative and summative evaluation of student learning*. New York: McGraw-Hill.

Bloom, B. S., Madaus, G. F., & Hastings, J. T. (1981). *Evaluation to improve learning*. New York: McGraw-Hill.

Carroll, J. B. (1971). Problem of measurement related to the concept of learning for mastery. In Block J. H. (Ed.), *Mastery learning: Theory and practice*. New York: Holt, Rinehart and Winston.

Cimino, A. (1980). *Centering on mastery learning in your classroom: A handbook for an approach to an alternative learning strategy*. New York: New York City Teacher Centers Consortium. Retrieved from https://files.eric.ed.gov/fulltext/ED237469.pdf.

Construction of a Standardised Test. Retrieved from http://www.yourarticlelibrary.com/statistics-2/construction-of-a-standardised-test-4-steps-statistics/92629

Evaluation in teaching and Learning Process. Retrieved from http://www.yourarticlelibrary.com/statistics-2/evaluation-in-teaching-and-learning-process-education/92476

Guskey, T. R. (2005). *Formative classroom assessment and Benjamin S. Bloom: Theory, research, and implications*. Retrieved from https://files.eric.ed.gov/fulltext/ED490412.pdf

Lam, T. C. M. (1995). *Fairness in performance assessment*. Eric Digest. Retrieved from https://www.ericdigests.org/1996-4/fairness.htm

Mechanics of writing a research report- Research methodology. Retrieved from https://www.wisdomjobs.com/e-university/research-methodology-tutorial-355/mechanics-of-writing-a-research-report-11591.html

Pathak, R. P. (2012). *Measurement and evaluation in education*. Delhi: Pearson.

RCI. (n.d.). *Curriculum accommodations and adaptations*. Retrieved from http://www.rehabcouncil.nic.in/writereaddata/Block3accie.pdf

Singh, A. K. (2002). *Tests, measurements and research methods in behavioural sciences*. Patna: Bharati Bhawan.

Unit - 4 □ Programme Evaluation and Review

Structures

4.1 Introduction

The term **Evaluation** is an important part of our education system. In this unit, programme evaluation is a special type of evaluation process in which data or information about a programme or some aspects of programme which are carefully collected in order to make necessary decision about the successful implementation of programme. It is also a management tool used to schedule, organize and coordinate tasks involved in completing a programme. In the programme evaluation process, important considerations often include how much the programme costs per participant, how the programme could be improved, whether the programme is worthwhile, whether there are better alternatives, if there are intended outcomes and whether the programme goals are appropriate and useful. In the social science research programmes, evaluation can involve both the quantitative and qualitative methods.

The evaluators for this process may come from different subject backgrounds such as sociology, psychology, economics, social work, educational planning and policy.

Consider the following key-questions when designing a program evaluation.

1. For what purposes is the evaluation being done, i.e., what do you want to be able to decide as a result of the evaluation?
2. Who are the audiences for the information from the evaluation, e.g., customers, bankers, funders, board, management, staff, customers, clients, etc.
3. What kinds of information are needed to make the decision you need to make and/or enlighten your intended audiences, e.g., information to really understand the process of the product or program (its inputs, activities and outputs), the customers or clients who experience the product or program, strengths and weaknesses of the product or program, benefits to customers or clients (outcomes), how the product or program failed and why, etc.
4. From what sources should the information be collected, e.g., employees, customers, clients, groups of customers or clients and employees together, program documentation, etc.
5. How can that information be collected in a reasonable fashion, e.g., questionnaires, interviews, examining documentation, observing customers or employees, conducting focus groups among customers or employees, etc.
6. When is the information needed (so, by when must it be collected)?
7. What resources are available to collect the information?

4.2 Objectives

After completing the course teacher educators will be able to:

* explain about the concept of programme evaluation
* describe the needs, goals and tools for programme evaluation
* explain about the different techniques of programme evaluation
* explain about the Reliability , validity and sensitivity in programme instruction
* describe about the different reviewing outcomes from programme instruction

4.3 Concept, need, goals and tools:

4.3.1: Concept:

Programme evaluation is a process in which different information are collected, scheduled , organized ,and evaluated in a proper method on some aspects of a particular programme. It is basically a method to analyze the different tasks involved to complete the given programme. To identify the minimum time needed to complete the total programme the following steps are generally considered:

1. Identification of specific activities regarding this programme;
2. Determination of proper sequence of the activities;
3. Construction of network diagram;
4. Estimation of the time required for each activity;
5. Determination of critical path;
6. Analysis of information collected through different activities;
7. Modification of programme evaluation on the basis of review analysis;

So we can say that programme evaluation refers to all those types of activities or steps undertaken to take decision about the effectiveness of programme. Since every programme is created in its own context, so it has to be evaluated in that context only. The inputs of different programme are different, so its evaluation has to be done in terms of the following given categories as they are all concerned related to the programme's effectiveness.

1. given input;
2. processes involved;
3. outputs in the form of results;
4. material produced;
5. products accrued;
6. impact made on community;
7. teaching staff and;
8. Students;

Therefore, for implementation of proper programme evaluation we have to undertake the following types of evaluation:

1. *Context evaluation:* In this evaluation we judge special type of context like students intake, quality of teachers, social environment which affect the attainment of instructional objectives.
2. *Input evaluation:* For input evaluation except financial and other resource inputs, it is the students' or participants' or teachers' or developers' inputs which are to be evaluated in the programme evaluation. What pupils' have learnt and how efficiently teachers have taught are reflected in pupil evaluation that validates the programme evaluation.
3. *Process evaluation:* It includes evaluating the personnel involved strategy adopted, activities followed, formative evaluation etc. However one of the success indicator is students' achievement or learning which is reflected through pupil evaluation.
4. *Product or Output evaluation:* This evaluation includes quality of materials produced, staff development, growth of learners' participants and performance objectives.
5. *Impact evaluation:* This is also an one aspect of programme evaluation which includes evaluation of changes in personnel, institutional system, collateral effects etc. This evaluation changes the learning habits, instructional practices, learning environment etc.

Judgement making methodology varies with the programme intent and also the decision may lead to programme acceptance, programme modification and programme review or termination.

4.3.2 : Needs:

The needs of the programme evaluation may be formative if we intend to improve the programme. Framing of a proper evaluation process is very necessary for the following reasons:

1. Evaluation process initiates communication among the Head of the institution and the other staff.
2. It facilitates analytical thinking and logical discussion about the programme
3. It provides an opportunity to revisit the goals, if it is an existing programme, and to bridge any gaps that may exist between the vision of the programme and the reality of the programme operations

4. It identifies different elements of the programme such as programme's strength, validating existing knowledge and providing data to support continuation of these activities
5. It helps to take decision about the programme which is being implemented correctly in terms of intended methodology or guidelines provided
6. It helps to assess the impact of programme in terms of intended objectives or referred to as outcomes evaluation that represent success indicators

When the programme continues it may be judged as formative purposes.Then it serves as summative purposes.

4.3.3 : Goals: The goals of the programme evaluation in our education system are as follows:

1. To analyze the setting of context in which the programme is conceived;
2. To identify programme objectives stated in terms of intended objectives;
3. To determine the inputs needed in terms of financial , material and human resources;
4. To implement the process of transaction in terms of strategies ,time frame and timetabling;
5. To monitor the formative evaluation of the programme;
6. To analyze the output intended or impacts in terms of specific programme indicators.

In the programme evaluation process to judge it's effectiveness is basic to provide for accountability of public funds and taking decision about programme installation, expansion ,modification, gathering evidences to support or oppose the programme.

4.3.4: Tools: For the development of a programme evaluation process, proper use of tools is very much necessary. The tools are generally used for gathering data from different specified sources. In education the tools may be classified broadly into the following categories :

1. Different psychological tests;
2. Inquiry Forms;
3. Observation;

4. Interview;

5. Different sociometric techniques.

In selecting tests for collecting data or information, every test should have their validity, reliability and usability. Inquiry forms are a set of data gathering research tools which make use of properly designed proformas for inquiring and securing information about certain phenomenon under investigation.

The inquiring forms included different categories like questionnaire, schedule, check list, rating scale, score card and opinionnaire or attitude scale.

A questionnaire is a series of questions dealing with some of the psychological, social, emotional. topics sent or given to an individual or a group of individual, with the object of obtaining data with regard to some problems under investigation .A schedule is a device consisting of a set of questions which are asked and filled-in by an interviewer in a face to face situation with another person.

A checklist is a simple device consisting of a prepared list of items which is thought by the researcher to be relevant to the problem being studied.

Rating scale refers to a scale with a set of points which describe varying degrees of the dimensions of an attribute being observed.

Observation is a process in which one or more persons observes what is occurring in some real life situation, and classify the records of pertinent happenings according to some planned scheme.

The interview is a process of communication or interaction in which the subject of interviewee gives the needed information verbally in a face-to-face situation.

Sociometric techniques attempt to describe attraction or repulsions between the group members by asking them to indicate whom they would select or reject in various situations.

4.4 Evaluation of Instructional Programmes :

4.4.1: Any instructional programme involves five stages. These are—

1. Programme objectives;

2. Programme planning;

3. Programme development;

4. Programme implementation and;

5. Programme evaluation.

At each of the stages rational judgments are made based on logic and expert opinion. In order to undertake a programme we have first to evaluate each component on rational basis. In programme evaluation all decisions are taken by pooled opinion of the experts, programme conductors or agencies sponsoring the programme, on the basis of their experiences and rational judgments. The major evaluation processes of the programme may be classified into the following approaches:

1. Rational evaluation

2. Formative evaluation;

3. Summative evaluation;

4. Process evaluation;

5. Impact evaluation;

6. Out come Evaluation;

7. CIPP model of evaluation.

4.4.2: Rational evaluation: it refers to that mode of evaluation which is based on logic, expert opinion, pooled opinion of stake holders like teachers, teacher educators, principals, administrators etc. Here, experiences from those who are involved, is the basis of judgment which are formed on the basis of logical reasoning.

4.4.3 : Formative Evaluation: This type of evaluation processes occur during the process. These evaluations are used to measure how well the process is proceeding overall and if changes are necessary. For example, in an educational setting, a teacher may ask the students to write a short paper reflecting on the topic just presented. The teacher can look at these reflections to determine if the students understand the material and make changes in their instruction to help students as they progress in the classroom.

4.4.4 : Summative Evaluation: This type of evaluation occurs at the end of the programme. This evaluation considers the effectiveness of the programme as a whole and make suggestions to improve it. As for example after completion of course an achievement test has taken on the pupils to measure the achievement of the course content at their cognitive level of learning.

4.4.5: **Process Evaluation**: Process evaluation focuses on how a programme was implemented and how it operates. The goal of the process evaluation is to see if the programme is meeting its intended goals. The evaluation includes looking at how the programme is delivered, the services it delivers and how it was carried out. Process evaluation can determine why a programme was successful or unsuccessful and provides information such as whether the programme can be replicated.

4.4.5: **Impact Evaluation**: Impact evaluation measures the programme's effect and the overall effectiveness of realizing the goals of the programme. The most effective impact evaluations are those that occur over longer period of time as opposed to those programs that evaluate the immediate before and after a program. Long term evaluations give a broader, more complete view of the outcomes of the program. Impact evaluation tends to be more expensive due to the time frame involved.

4.4.6: Outcome Evaluation: Outcome evaluations measure the short- term impact of implementing programs. The evaluation gives information on how well the program is reaching its target audience. This can help the initial impact of a programme and how the programme being received. The outcome evaluation is able to assess the changing attitudes and knowledge of the target audience.

4.4.7: CIPP Model of evaluation: CIPP Model is an attempt to make evaluation directly relevant to the needs of the decision makers during phases and activities of the programme. The overall activities of the model are Context, Input, Process, Product. The aspects of this model are as follows:

1. *What should we do?*

   This involves collecting, analyzing, needs assessment data to determine goals, priorities and objectives.

2. *How should we do it?*

   This involves the steps and resources needed to meet the new goals and objectives and might include identifying successful external programs and materials as well as gathering information.

3. *Are we doing it as planned?*

   This provides decision makers with information about how well the programme is being implemented. By continuously monitoring the program, decision makers learn such things as how well it is following the plans and guidelines, conflict arising, staff support and morale, strength and weakness of materials, delivery and budgeting problems.

4. *Did the program work?*

By measuring the actual outcomes and comparing them to the anticipated outcomes, decision makers are able to decide if the program should be continued, modified and dropped together.

CIPP model allowed us to ask formative questions at the begging of the programme, later gives us a guide of how to evaluate the program impact by allowing us to ask summative questions on all aspects of the program.

CONTEXT: What needs to be done? Vs What were important needs addressed ?

INPUT: How should it be done ? Vs How was a defensible design employed ?

PROCESS: Is it being done ? Vs Was the design well executed?

PRODUCT: Is it succeeding ? Vs Did the effort succeed ?

4.4.6: Methods, overall purposes, advantages and Challenges of different types of Evaluation Tools:

Method	Overall Purpose	Advantages	Challenges
questionnaires, surveys, checklists	when need to quickly and/or easily get lots of information from people in a non threatening way	-can complete anonymously - inexpensive to administer -easy to compare and analyze - administer to many people -can get lots of data -many sample questionnaires already exist	-might not get careful feedback - wording can bias client's responses -are impersonal -in surveys, may need sampling expert - doesn't get full story
interviews	when want to fully understand someone's impressions or experiences, or learn more about their answers to questionnaires	get full range and depth of information - develops relationship with client -can be flexible with client	can take much time -can be hard to analyze and compare -can be costly -interviewer can bias client's responses
documentation review	when want impression of how program operates without interrupting the program; is from review of applications.	get comprehensive and historical information -doesn't interrupt program or client's routine in program -information	-often takes much time -info may be incomplete -need to be quite clear about what looking for -not flexible means to get data; data restricted to what already exists

	finances, memos, minutes, etc.	already exists -few biases about information	
observation	to gather accurate information about how a program actually operates, particularly about processes	view operations of a program as they are actually occurring - can adapt to events as they occur	-can be difficult to interpret seen behaviors -can be complex to categorize observations -can influence behaviors of program participants -can be expensive
focus groups	explore a topic in depth through group discussion, e. g., about reactions to an experience or suggestion, understanding common complaints, etc.; useful in evaluation and marketing	-quickly and reliably get common impressions -can be efficient way to get much range and depth of information in short time - can convey key information about programs	-can be hard to analyze responses -need good facilitator for safety and closure -difficult to schedule 6-8 people together
case studies	to fully understand or depict client's experiences in a program, and conduct comprehensive examination through cross comparison of cases	-fully depicts client's experience in program input, process and results -powerful means to portray program to outsiders	-usually quite time consuming to collect, organize and describe - represents depth of information, rather than breadth

4.4. 7. : The relation between Formative, Summative evaluation and curriculum evaluation for the pupils has been shown in the following diagram:

INTER-LINKAGES AMONG CURRICULUM PROGRAMME AND PUPIL EVALUATION

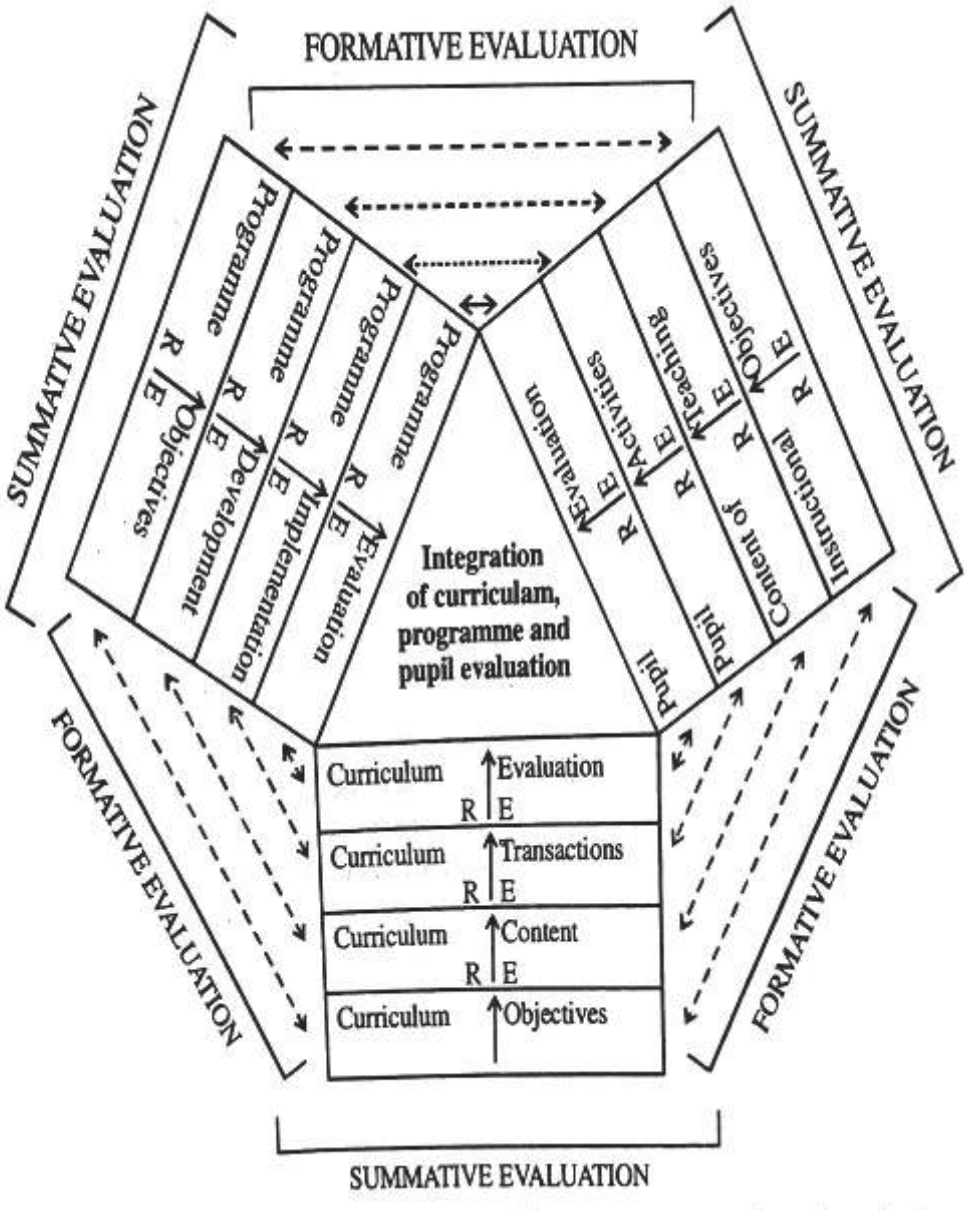


Figure 4.1 : Inter-linkage among curriculum, programme and pupil evaluation
Source : Programme Evaluation, In NCERT : Educational Encyclopedia

4.4.8 : The interrelation between the Formative Evaluation, Summative Evaluation, Curriculum Evaluation and Programme evaluation are shown as follows:

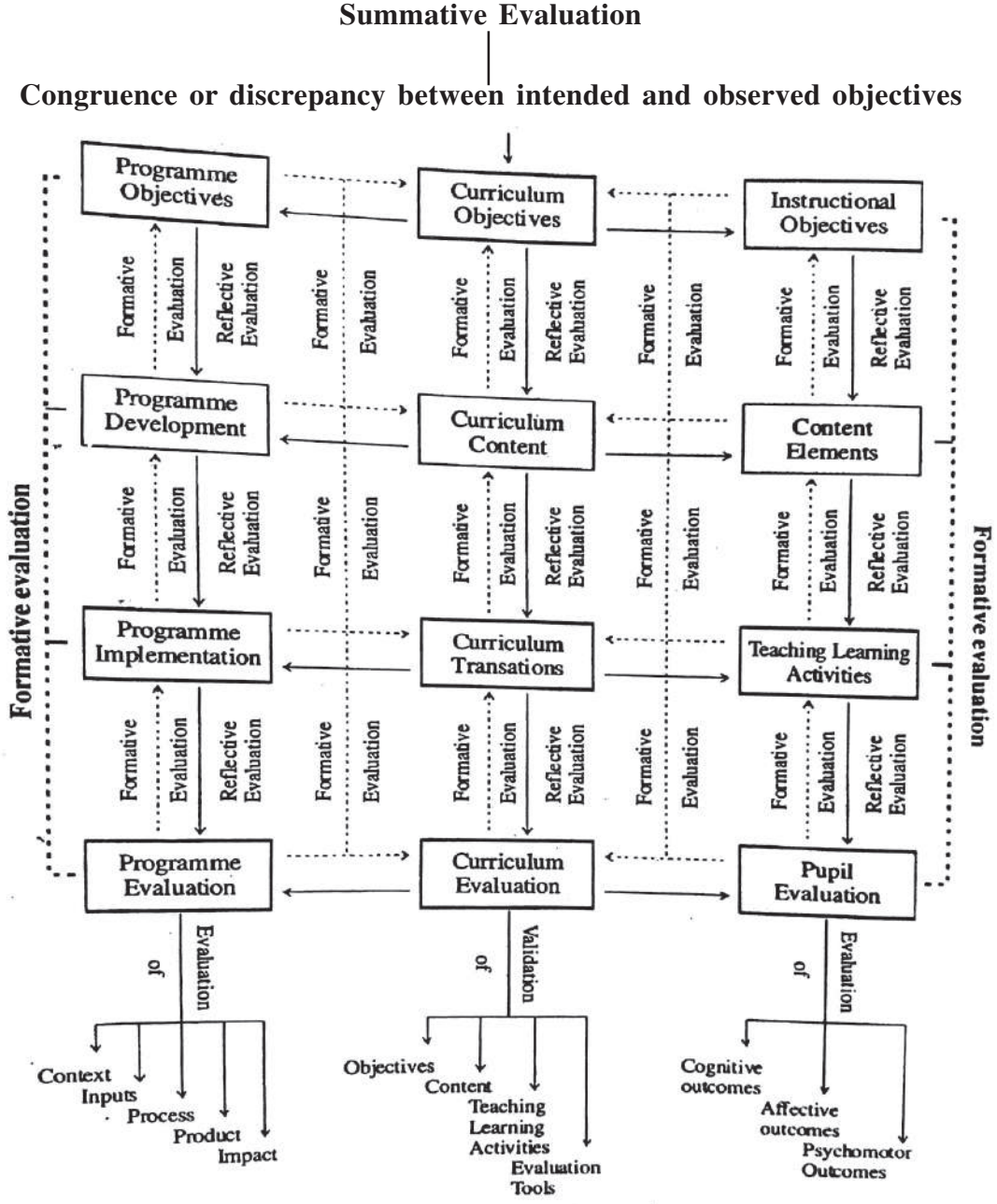


Figure 4.2 : Integration of pupil, curriculum and programme evaluation

4.4.9 : A comparative study between different types has been shown in the table :

Evaluation Types	When to use	What it shows	Why it is useful
Formative Evaluation Evaluability Assessment Needs Assessment	During the development of a new program. When an existing program is being modified or is being used in a new setting or with a new population.	Whether the proposed program elements are likely to be needed, understood, and accepted by the population you want to reach. The extent to which an evaluation is possible, based on the goals and objectives.	It allows for modifications to be made to the plan before full implementation begins. Maximizes the likelihood that the program will succeed.
Process Evaluation Program Monitoring	As soon as program implementation begins. During operation of an existing program.	How well the program is working. The extent to which the program is being implemented as designed. Whether the program is accessible an acceptable to its target population.	Provides an early warning for any problems that may occur. Allows programs to monitor how well their program plans and activities are working.
Outcome Evaluation Objectives-Based Evaluation	After the program has made contact with at least one person or group in the target population.	The degree to which the program is having an effect on the target population's behaviors.	Tells whether the program is being effective in meeting it's objectives.
Economic Evaluation: Cost Analysis, Cost-Effectiveness Evaluation, Cost-Benefit Analysis, Cost-Utility Analysis	At the beginning of a program. During the operation of an existing program.	What resources are being used in a program and their costs (direct and indirect) compared to outcomes.	Provides program managers and funders a way to assess cost relative to effects. "How much bang for your buck."
Impact Evaluation	During the operation of an existing program at appropriate intervals. At the end of a program.	The degree to which the program meets its ultimate goal on an overall rate of STD transmission (how much has program X decreased the morbidity of an STD beyond the study	Provides evidence for use in policy and funding decisions.

4.5 Techniques of Programme evaluation:

4.5.1: There are various techniques in programme evaluation. All techniques actually depends on the nature of the stakeholders who are associated with this programme. Stake holders are people or organisations who are affected by the success or failure of what we are evaluating. As for example if the university wants to implement a new online learning scheme for its students, the stake holders might be the following:

- Students;
- Lecturers/teachers;
- Institution/department/school management;
- IT support officers;
- Other support services (staff development, library);
- Funders.

These stake holders may have a number of concerns such as:

1. Will this new online learning scheme improve learning?
2. How much will it cost?
3. Will it provide students easier access to teaching materials?
4. Will students be motivated to use it?
5. How easy will it be to use?
6. What will be its effect be on other systems/processes?

4.5.2:Example – EASEIT-ENG

The following example takes a real project EASEIT-Eng which was part of the third Phase of the Teaching and Learning Technology Programme. EASEIT-Eng aimed to assist engineering academics in selecting learning technology material, for use in their teaching that was right for both them and their students.
From the mission statement:
"…enable an academic tutor to make an informed choice from a range of Evaluated computer based materials…"
We will look at what was evaluated.

1. Usability

2. Navigation
3. Online help
4. Error trapping
5. Use of colour
6. Ease of installation
7. Media use
8. System requirements
9. Pedagogic aspects of the project
10. Potential role
11. Clearly stated objectives
12. Assessment and feedback
13. Challenge and motivation
14. Integration into course
15. Reason for wanting to use CAL
16. Number of students
17. Availability of computers
18. Is CAL perceived as "optional extra"?
19. Relevance to subject of course

4.5.3: How to Evaluate?

There are many different methods of evaluation. The following section will outline the most commonly used techniques.

4.5.3.(1) Checklists:

A checklist is a list of action items, steps, or elements needed for a task. Each item is checked off as it is completed.

1. Uses:
2. Making sure early version of software conform to standard guidelines
3. Checking whether a range of materials meet your criteria

Criteria :

1. Can be cheap and easy
2. Can apply to prototypes
3. Quick – can cover a lot of factors

Flexibility :

1. There is a degree of interpretation needed
2. Not much depth or richness to the information gathered

4.5.3.(2) Questionnaires

A questionnaire is comprised of a series of questions and can be used as a survey instrument or a discussion guide.

Uses:

1. Obtaining feedback from a large number of students
2. Obtaining semi-quantitative ratings from students – e.g. Likert scale

Questions:

Likert Questions

These types of questions have the form – "circle 1 if you disagree strongly, 2 if you somewhat disagree, through to 5 if you agree strongly".

Criteria :

1. Can get input from many people
2. Can get quantitative input

Conditions:

1. Can be difficult to get questionnaires returned
2. Often only get simplest form of question completed – no extra comments
3. Questions may be misinterpreted

4.5.3(3) Interviews

An interview is a conversation between two or more people where questions are asked to obtain information about the interviewee.

Uses:

1. Anything that requires more than a two-word answer
2. Anything where the questions need explaining
3. Explorative work

There are various different types of interviews. Here are a few of the most common:

a) Closed – like a spoken questionnaire

b) Conversational – let the interviewee take the lead

c) Can be one-to-one or involve a (focus) group

Condition :

1. Open-ended – you can pick up on important issues as they are raised
2. Can make sure questions are understood
3. Rich information – a debate may occur between interviewees allowing you to capture the reasons behind their answers, not just their answers

4.5.3(4) Other Techniques

Listed below are some other frequently used evaluation techniques:

1. Observation
2. User diaries/logs
3. Nominal group technique
4. Controlled experiments
5. Pre-post testing
6. Concept maps

4.5.3.(5) Your Evaluation Report

Your project evaluation report should detail:

1. The concerns you addressed
2. The methods you used
3. The data gathered
4. What was inferred
5. Conclusions/recommendations

4.6 Reliability, Validity and Sensitivity in Programme evaluation:

4.6.1: Reliability: The instruments (e.g. tests, questionnaire etc.) used in programme measurement must be reliable in evaluation process. It means the extent to which the measure gives the same results when used repeatedly to measure the same thing. The reliable a measure is, greater its statistical power and the more credible

its findings. In the evaluation process, if the measuring instrument is unreliable, it may dilute and obscure the real effects of a programme. As a result the programme will appear as less effective. Hence it is important to ensure the instruments of the evaluation are as reliable as possible.

4.6.2: Validity: In the evaluation process, the measurement instrument which to be used must be valid for the specific purposes. The validity of the instrument is the extent to which it measures what is intended to measure. In the general use of programme evaluation, an instrument may be deemed valid if it is accepted as valid by the stakeholders of the evaluation process. In this process stake holders may include Programme administrators, agency executive director, development director, programme staff at all levels, evaluation consultant, funders, programme participants and other external stakeholders like govt officials, sister agencies etc.

4.6.3: Sensitivity: The principal purpose of the programme evaluation process is to measure whether the programme has an effect on the major social problems. Hence the measurement instrument must be sensitive enough to identify the potential changes on the different social issues. The instrument may the insensitive if it contains items measuring outcomes on which the programme possibly effect. So it is the duty of the evaluators to produce credible evaluations, as their findings may have far reaching effects. A discreditable programme evaluation which is unable to show that a programme is achieving its purpose when it is in fact creating positive change which may cause the programme to lose its funding undeservedly.

4.7 Reviewing outcomes:

4.7.1 : A Program Review is a rigorous, systematic, objective, impartial, expert-based examination, evaluation and self-evaluation of how effectively a program is working, as part of the ongoing pursuit of higher levels of achievement and quality in the university, and in the service of program improvement. A Program Review includes:

a) Preparation and submission of a self-evaluation document;

b) Review of the self-evaluation document by the Program Review Panel;

c) Collection and submission of additional documentation to the Program Review Panel;

d) Scrutiny of the documentation by the Program Review Panel;

e) A visit by the Program Review Panel to the program and its officers;

f) The production of a report that comments on judgements about the program, the strengths of the program, areas for improvement, and recommendations for further action.

g) Following the receipt of the report, a follow-up action plan for the program's development.

Program review addresses questions such as:

- What are we doing, why, how and how well on the program?
- How high is the quality of the program?
- How do we know?
- How can the program be improved and the improvement sustained?

4.7.2: The Questions which are related to reviewing outcomes:

1. What does the Faculty *say* it is doing and values about the program?
2. What *procedures* does the Faculty have for planning, monitoring, reviewing, developing what it says it does and values about the program?
3. What *processes* does the Faculty have for planning, monitoring, reviewing, developing what it says it does and values about the program?
4. How does the Faculty know and inform itself and stakeholders if these procedures and processes are *working/being used*?
5. Are the procedures and processes in place, operating and *effective* in meeting the Faculty's stated mission, values, purposes, policies, self-evaluation contents and criteria for the effectiveness of the program?
6. How does the Faculty *inform itself and stakeholders* about the procedures and processes for planning, monitoring, reviewing, developing what it says it does and values about the program?
7. How does the Faculty inform itself/stakeholders about how these procedures and processes for the program are effective in terms of *outcomes* and *quality* (i.e. impact analysis)?
8. How high is the quality of the program and its elements?
9. What benchmarks and benchmarking does the Program operate?
10. How has the program *improved* its quality over time, and how do we know?

11. What recommendations can be made for needed *interventions and developments*?
12. *How* and *where* can the quality of the program be improved and enhanced, *by whom* and in what *time frames*?

4.7.3: Programme Review:

A Program Review is conducted by internal members of the university and by external reviewers. It comprises a self-evaluation by the program and the program committee(s), together with a review by members of the university who are not from the Faculty, and who include senior officers of the university. The intention is to show that the program has proper procedures and processes for quality assurance that these are actually operating, that they are making a positive difference, and that they are impacting on the program. Within Program Review, self-evaluation has a primary purpose of bringing about improvement, to ensure that the program is meeting its goals, and has procedures for informing itself of this, and that its statements of quality are evidence-based. It is designed to identify and diagnose the strengths and weaknesses of the program in a way that can bring about improvement, i.e. its intention is constructive and formative. The Australian Universities Quality Agency (2008: 5) indicates other several possible intended outcomes of self-evaluation within Program Review:

a) Verifying that processes are in place, and whether these are operating effectively;
b) Determining whether existing policies and procedures are effective in meeting [program] goals, and identifying any gaps;
c) Providing information that may not normally be evident (such as localised innovative practices in teaching and learning);
d) Enhancing understanding (across staff, student and/or other stakeholders) of organisational processes and outcomes;
e) 'Reality testing' achievements toward strategic goals;
f) Increasing engagement with change;
g) Disclosing weaknesses and forcing confrontation;
h) Promoting honest communication;
i) Encouraging benchmarking, internally and/or externally;
j) Providing a base for ongoing comparison and benchmarking;
k) Identifying activities that are misaligned with organizational [and program] goals/objectives;

l) Providing evidence of quality processes in place;

m) Promoting empowerment and engagement of participants;

n) Promoting an evidence based culture;

o) Promoting learning;

p) Enabling self identification of improvement gaps and development of associated strategies to address these prior to external audit.'

4.7.4: Difference between Program, Course, Examination, Assessment, Award and Programme Review:

A 'program' is defined here as an entire set of courses leading to an award.

A 'course' is defined here as a single element of a program to which an identifying code has been assigned.

'Examination' is defined here as any formal assessment, examination, and/or evaluation of performance which contributes to the grading of students in a course or program.

'Assessment' here is defined as the process of reaching a decision on the marks/ grades to be awarded to students. It also includes the provision of formative feedback to students where appropriate (see also below: releasing marks).

An 'award' here is defined as the degree/certificate/diploma awarded, together with its classification (where appropriate).

A program review involves: evaluation and self-evaluation; internal peer review; the involvement of external parties with the appropriate disciplinary expertise; and student, alumni, faculty and administrative input.

4.8 Let us sum up:

4.8.1: Programme evaluation is a process in which different information are collected, scheduled, organized ,and evaluated in a proper method on some aspects of a particular programme. It is basically a method to analyze the different tasks involved to complete the given programme. To identify the minimum time needed to complete the total programme the following steps are generally considered.

1. Identification of specific activities regarding this programme;

2. Determination of proper sequence of the activities ;

3. Construction of network diagram;

4. Estimation of the time required for each activity;
5. Determination of critical path;
6. Analysis of information collected through different activities;
7. Modification of programme evaluation on the basis of review analysis.

4.8.2: In programme evaluation all decisions are taken by pooled opinion of the experts, programme conductors or agencies sponsoring the programme, on the basis of their experiences and rational judgments. The major evaluation processes of the programme may be classified into the following approaches:

1. Rational evaluation,
2. Formative evaluation,
3. Summative evaluation,
4. Process evaluation,
5. Impact evaluation,
6. Outcome Evaluation,
7. CIPP model of evaluation.

4.8.3: Reliability of Programme Evaluation: The instruments (e.g. tests, questionnaire etc.) used in programme measurement must be reliable in evaluation process. It means the extent to which the measure gives the same results when used repeatedly to measure the same thing. The reliable a measure is, greater its statistical power and the more credible its findings.

Validity: In the evaluation process, the measurement instrument which to be used must be valid for the specific purposes. The validity of the instrument is the extent to which it measures what is intended to measure. In the general use of programme evaluation, an instrument may be deemed valid if it is accepted as valid by the stakeholders of the evaluation process.

Sensitivity: The principal purpose of the programme evaluation process is to measure whether the programme has an effect on the major social problems. Hence the measurement instrument must be sensitive enough to identify the potential changes on the different social issues. The instrument may the insensitive if it contains items measuring outcomes on which the programme possibly effect. So it is the duty of the evaluators to produce credible evaluations, as their findings may have far reaching effects.

4.8.4: To develop the programme evaluation process , proper use of tools is very much necessary. The tools are generally used for gathering data from different specified sources. In education the tools may be classified broadly into the following categories :

1. Different psychological tests,
2. Inquiry Forms,
3. Observation,
4. Interview,
5. Different sociometric techniques.

4.8.5: A Program Review is conducted by internal members of the university and by external reviewers. It comprises a self-evaluation by the program and the program committee(s), together with a review by members of the university who are not from the Faculty, and who include senior officers of the university. The intention is to show that the program has proper procedures and processes for quality assurance that these are actually operating, that they are making a positive difference, and that they are impacting on the program. Within Program Review, self-evaluation has a primary purpose of bringing about improvement, to ensure that the program is meeting its goals, and has procedures for informing itself of this, and that its statements of quality are evidence-based.

4.9 Unit End Exercises

4.9.1: Define Programme Evaluation.

4.9.2: Discuss about the needs and goals of Programme Evaluation .

4.9.3. Discuss about the factors on which the effectiveness of Programme Evaluation Depend.

4.9.4. What are the different tools which are generally used for Programme Evaluation ?

4.9.5: Explain the Interrelation between FORMATIVE, SUMMATIVE AND CURRICULUM EVALUATION.

4.9.5: Discuss about the Review outcomes

4.9.6: Explain the difference between Formative and Summative Evaluation.

4.9.7: Explain the terms Reliability , Validity and Sensitivity of Programme evaluation .

4.10 References

1. Adams, R., Strong, J., Mattick, L.E., McManus, M.E., Matthews, K.E. and Foster, J. (2008) *Self-review for Higher Education Institutions*. Melbourne: Australian Universities Quality Agency.

2. NCERT, National Policy of Education (2000). New Delhi

3. M.ED Study Materials , IGNOU ,New Delhi

4. WIKIPEDIA , Social Science Research

Unit - 5 □ Current Trends in Evaluation

Structure

5.1: Introduction

Suppose you are a student of a computer class and your teacher wants to know whether you can switch on a computer or not. Then how can your teacher know that? Is it possible to know by merely asking you a question and getting your answer by paper pencil method? Suppose you are a student of a English class and your teacher wants to test whether you can speak English or not. Then how can your teacher test that? Is it possible to test your English speaking capacity by paper pencil method? The answer is 'No'. Suppose you want to evaluate the writing skill and communication style and depth of the knowledge of the writer about the content of the topics. Then is it possible to evaluate that by traditional paper-pencil method. The answer is 'No'. At present several methods of evaluation have been emerged to evaluate these. In this unit those methods have been discussed one by one.

5.2: Objectives

The objective of this unit is to provide a broad knowledge about the recent trends of evaluation. At the end of this unit you will be able to:

(a) state the knowledge-based evaluation and its proper use;

(b) illustrate performance-based evaluation and its effective use;

(c) design a effective role play;

(d) describe concept maps and differentiate it from mind map;

(e) prepare a model of concept maps;

(f) differentiate authentic evaluation from traditional evaluation;

(g) describe proper methods of taking interview, writing sample, project based evaluation, exhibition;

(h) use reflective journals properly;

(i) inspire the students self evaluation by using self evaluation rubrics and rating scale and

(j) describe what are online examination, on-demand examination, take home examination and open book examination.

5.3:Knowledge based Evaluation

Communication is one of the most challenging areas for students who are deaf or hard of hearing and who use ASL or a manually coded English system. Many preschool students who are deaf or hard of hearing enter school without the conversational or narrative language skills. For the students with hearing impairment (Deaf and dumb or hard hearing students) there may always happen a communication gap between the students and the teachers. Perfect communication between the teachers and the students in those cases is an impossible matter. As a result of that the student cannot get the proper knowledge of that which a teacher intends to communicate. Even the students do not know which information he/she caught is imperfect. So it became a sole duty of the teacher to evaluate the students in the formative stage to know the parts of the knowledge which has not reached to the students properly. The evaluation used for this purpose is called knowledge based evaluation. The knowledge based evaluation is intended to confirm

the knowledge acquisition and learning outcomes that cannot be wholly assessed during summative evaluation. In each step of learning of the students the highest assessment priority should be placed on conversational and narrative language skills in the student's preferred communication modality based on the knowledge which the teacher intends to communicate.

5.1.1: When knowledge based evaluation is used?

In the following cases knowledge based evaluation may be used:

(a) As proficiency in the communication is pre-condition of learning, the student's communication skill may be assessed at entrance level to the school by this method based on the knowledge which the student has already acquired. It will help the teachers to plan for the necessary conversational and narrative language skills training of the student as pre-literacy preparation before going to literacy. It may be sign language or other preferred communication modality.

(b) The base level knowledge of the deaf and hard hearing students may also be assessed through knowledge based evaluation which will help the teachers to plan the lesson for learning of the students.

(c) The knowledge based evaluation may also be used to assess the learning capacity of the deaf and hard hearing students. In this case the teacher first helps the students to learn something and then he will assess the students learning capacity through knowledge based evaluation method.

(d) For the deaf and hard hearing students it will be a continuous process to assess the learning of the students by knowledge based evaluation method to assess the communication gap between the teacher and the students.

5.4: Performance Based Evaluation: Role play, Concept maps

If a teacher wants to know whether his/her student can switch on the computer or not or if a teacher wants to know whether his/her student can speak English or not then he/she can do that by your performance only and no other method is suitable in this case. When performance of a student is the only way to evaluate a student this type of evaluation is called performance based evaluation. Performance based evaluation is a set of strategies for the acquisition and application of knowledge, Skills, and work habits of students through the performance of tasks that are meaningful and engaging to students.This type of assessment provides the teacher

with information about how students understand and applies knowledge. In its simplest term, a performance based evaluation is one which requires students to demonstrate that they have mastered specific skills and competencies by performing or producing something. While a test is an efficient way to gather evidence about students' conceptual knowledge, a performance based evaluation is a better tool for gathering evidence about what students can do with their knowledge. Effective performance based evaluation allows students to apply knowledge to solve a problem or demonstrate a skill. In performance based evaluation, students demonstrate or construct something, and that work is assessed using observation and judgment, often using a tool like a rubric. Performance based evaluation is especially useful for assessing students' achievement of complex learning standard, assessing their ability to apply concepts they learned to solve problems and assessing skills. As it is said, "The only way to know whether a student can swim or not is to put them in the pool." Some simple skills are also best assessed by observing student performance. Performance tasks for performance based evaluation must be carefully designed so that the student's responses really do give evidence of the knowledge and skills we are trying to assess. Performance criteria must be clear and help students focus on those things that they can show what they know. Performance tasks help show students what real work in a discipline looks like — what it means to be a writer, mathematician, historian, or scientist, for example. And when students understand the criteria for success with a learning task and apply those criteria as they work their performance and their achievement both increase through performance based evaluation.

5.2.1:Performance based Evaluation:

Performance based evaluation is one alternative to traditional methods of testing student achievement. While traditional testing requires students to answer questions correctly, performance based evaluation requires students to demonstrate knowledge and skills, including the process by which they solve problems. Performance assessments measure skills such as the ability to integrate knowledge across disciplines, contribute to the work of a group, and develop a plan of action when confronted with a new situation. Performance assessments are also appropriate for determining if students are achieving the higher standards set by states for all students. This brochure explains features of this assessment alternative, suggests ways to evaluate it, and offers exploratory questions you might ask your child's teacher about this subject. The Office of Technology Assessment of the U.S. Congress described performance based evaluation as testing that requires a student to create an answer or a product that demonstrates his or her knowledge or skills. Examples of performance based evaluation include:

(a) Group projects enabling a number of students to work together on a complex problem that requires planning, research, internal discussion, and group presentation.

(b) Essays assessing students' understanding of a subject through a written description, analysis, explanation, or summary.

(c) Experiments testing how well students understand scientific concepts and can carry out scientific processes.

(d) Demonstrations giving students opportunities to show their mastery of subject-area content and procedures.

(e) Portfolios allowing students to provide a broad portrait of their performance through files that contain collections of students' work, assembled over time.

One key feature of all performance based evaluation is that they require students to be active participants. They also focus attention on how students arrive at their answers and require students to demonstrate the knowledge or skills needed to obtain a correct answer. To illustrate, if high school juniors are asked to demonstrate their understanding of interest rates by shopping for a used-car loan (i.e., comparing the interest rates of banks and other lending agencies and identifying the best deal), a teacher can easily see if the students understand the concept of interest, know how it is calculated, and are able to perform mathematical operations accurately.

5.2.2Advantages of performance based Evaluation:

Instruction in most subject areas is being altered to include more practical applications of skills and to incorporate a greater focus on the understanding and combining of content and skills.Performance based evaluation closely tied to this new way of teaching provide teachers with more information about the learning needs of their students and enable them to modify their methods to meet these needs. They also allow students to assess their own progress and, therefore, be more responsible for their education.

Advocates of performance based evaluation believe these tests will prompt educators and school officials to identify the skills and knowledge they want their students to acquire and to focus on teaching students this information. It also provides educators with information about what students have learned, not just how well they can learn.

5.2.3:Disadvantages of performance based Evaluation:

Performance based evaluation usually include fewer questions and call for a greater degree of subjective judgment than traditional testing methods. Since there are no clear right and wrong answers, teachers have to decide how to grade and what distinguishes an average performance from an excellent one. This potential disadvantage can be avoided if teachers set up an evaluation rubric (rating scale with several categories) that clearly defines the characteristics of poor, average, and excellent performances so teachers can score them in a consistent manner.

Critics argue that performance based evaluation will not improve schooling and could be harmful. The following concerns have been expressed about performance based evaluation: teachers might teach only to the test, thereby narrowing the curriculum and reducing the test's value. When using performance based evaluationsuch as portfolios, teachers and other individuals who are grading the work may differ greatly in their evaluations. Students may be unintentionally penalized for such things as having a disability, being from a certain cultural background, or attending classes at a school with limited resources.

5.2.4:Effective performance based evaluation:

The teachers who wish to evaluate the effectiveness of performance based evaluation should ask the following questions:

(a) Does the performance based evaluation cover important skills and knowledge?

(b) Are the test items varied to fairly test students having different experiences, backgrounds, and motivations?

(c) Does the performance based evaluation give my child worthwhile educational experiences?

(d) Does the performance based evaluation require my child to use higher level thinking and problem-solving skills rather than simply memorizing to determine the answer?

(e) Are teachers receiving training and assistance in designing and using performance based evaluation?

How are assessment results going to be used? Are teachers using the results to evaluate their student's performance in their own classrooms and then tailoring instruction in areas of weakness? Or are the results being compared to those in other classrooms and schools and for evaluating the teacher or school? If assessments

are going to be used as accountability measures, reliability (the degree to which a test can be depended on to produce consistent results repeatedly), and validity (the extent to which a test accurately measures the result that it is intended to measure), become critically important.

5.2.5:Parent's role in doing well on performancebased Evaluation:

Students who are accustomed to traditional testing will need to be carefully prepared for these new approaches to assessment. Project Appleseed engages parent involvement in schools. Parents can help their children in the following ways:

(a) Ask the teacher to explain the types of performance based evaluation to be used so that you can answer your child's questions and help him or her decide how to prepare for the assessment.

(b) Request that the school give a presentation on performance based evaluation for parents.

(c) When you talk with your child about what he or she is learning in school, ask questions that encourage problem solving or creativity. Help your child see that learning is a process and demonstrate how it is applied to real-life situations.

(d) Ask your child if he or she understands what will be expected on the assessment. If you notice confusion or anxiety, encourage him or her to ask the teacher for help.

5.2.6: Role Play:

Role playing is the learning activity that involves the participants acting in some common character types in daily life or simulation of real life situations. Role playing can also be used as an assessment. Teachers can use role play to assess students' understanding or perspectives on the role of the characters, or their engagement and involvement during the role play. It has been suggested that role playing is particularly effective when applied to second language learning, which provides valuable opportunities for students to practice and develop the new language. Learners acquire new languages efficiently when they receive comprehensible input, engage in genuine communication, have active involvement, and have positive effect, during the role playing.

5.2.7: Structure of Role Play:

There are two ways for which role play can be used as an assessment. The first way involves the teacher specifying the characters and context for students to act.

The students then express their imagination and creativity through their words and actions in the play. This will assess the students' engagement, involvement and understanding of their roles during the role play. The second way involves the teacher pre-organizing a role play for which students are to answer some pre-set questions.The role play process can either be completely autonomous (the teacher just watches silently outside the group), or can be 'directed' by the teacher as a 'narrator' in old movies (by stating the flow of the play during its performance outside the group). Some interesting set-ups for role play learning:

(a) Guessing games of famous people – One participant try to role play the characteristics of a famous person, and the other participants ask questions in order to guess the person's identity.

(b) Extraterrestrial organisms – Students are told to be extraterrestrials that do not have knowledge about the human civilization. The teacher presents some earthly objects (e.g. toothbrushes, watches) to them, and students have to draw conclusion about the uses as if they had no knowledge of them. This can stimulate students' imagination and creative thinking when trying to describe the objects.

(c) Role switching – The teacher describes different characters for students. Students role-play one character, and switch on another character on the teacher's signal.

5.2.8:Advantages of Role Play Assessment:

- Sets up a relatively non-threatening setting in which the students can feel comfortable and relaxing with speakingan unfamiliar language, resulting in the development of long-term motivation in mastering the new language.
- Encourages the students to make use of their innovative thinking and creativity when acting the characters out.
- When preparing and rehearsing for the role play, students need to cooperate and communicate with their team members. This can promote effective interpersonal relations and social transactions among the team members, as students need to communicate well and accept their role responsibilities, and relate themselves to others during the simulation.
- Changes the way the students see the world because role play allows them to view things and approach problems with a different perspective.
- Allow students to explore the feelings, attitude, values and culture contained in the characters of role play. Dramabased activities usually create a strong

emotional involvement to performers, because in the story they often have to think about big issues in life (e.g. love, hate, death) which are issues that they may not commonly have a chance to experience in their usual life.

5.2.9: Disadvantages of Role Play Assessment:

Teachers have to do heavy preparation for setting up the background, contexts, and learning goals for the role play activities.

- Data and background information about the role played character may need to be prepared and distributed to the students to help them with the assigned roles.
- It may be quite difficult to assess proficiency of the students on their role play performance.

5.2.10: Designing a good Role Play Assessment:

- An important step in designing a role play simulation is to decide the specific learning objectives for it. For instance, it can be to promote students' effectiveness of communication in using the language for shopping when travelling to that country. Specific learning objectives can be very useful for both the teachers and students to evaluate and reinforce what the students have learnt during the activity.
- In the role play process, the teacher should just define the general structure of the flow, and let the students interact among themselves spontaneously. The teacher's role is to maintain students' motivation by stimulating their curiosity and keeping the role play performance relevant to the topic and learning objectives. The emphasis for learning in role play is on its process.
- Teachers can engage the students in the topic by activating their background knowledge, and set up an interactive display of items such as - photographs, pictures, posters, books etc. so that the students can obtain confidence and perform smoothly.
- The teacher should always involve all the students as either the performers or the audiences, and tell them to take notice of other students' performance and give feedback. Audiences' reactions can contribute significantly to the feeling and experience of the performers, and shape their performance in real-time.
- The teacher can also prepare role play cards, which are cards stating the roles that students are responsible of. Randomly select the roles for students using

role play cards can prevent them from selecting only the easy and less challenging roles.

- Recording, self-assessment observations can help in giving feedback to students regarding their performance and usage of their knowledge.

5.2.11: Concept Maps:

Coined by Joseph Donald Novak in a research program at Cornell University in 1972, concepts maps have been designed with the purpose to monitor and understand changes

in children's knowledge regarding the understanding of science. In the course of this program, the researchers interviewed a number of children and had difficulty in identifying specific changes in the understanding of scientific concepts. Novak based his research program on Ausubel's theory. Ausubel studies about the cognitive psychology and believed that learning was given through the assimilation of new concepts andpropositions into existing concepts and proportional systems already present in the student (or individual). This knowledge structure is called cognitive structure of the individual. Having as a challenge to find a better way to represent conceptual understanding of children, Novak came up with the idea that children's knowledge could be represented by a sort of concept maps. Based on this study, Novak designed and presented a new tool and a new opportunity that might be used to comprehend the way individuals organize the concepts cognitively for the understanding of some subject. Novak developed the concept maps from diagrams indicating relationship between concepts or between words that are used to represent other concepts. The concept maps are structures that present the most general concepts down to specific ones; they are used with the purpose of organizing and sequencing content hierarchically. It is worth mentioning that the concept maps cannot and should not be misunderstood with any charts or diagrams, since the purpose is not the same. Concept maps are hierarchically organized from the lines, the relationship among several concepts identified and explained by the individuals, then it is up to them to build cognitively the relationship among concepts and recognize what is more important about a given subject. The concept maps are based on human cognition, and soon they attracted the interest of educators seeking new alternatives in terms of teaching pedagogies. The concept maps come up to provide the students (at any level) the relationship among concepts that other pedagogies do not provide in order to build a knowledge base about a particular

topic or subject. It should be emphasized that there is no way a student establishes relationships among contents, if the basic concepts were not handed out previously and absorbed by them. Here, it is recognized that the contribution of Ausubel becomes so necessary in concept maps through the theory of meaningful verbal learning, where students create links among concepts from the proposition. This researcher brings in the scope of their studies, the perspective that students acquire and organize concepts according to their cognitive structure, in other words, by student's perception and. There is no doubt that the concepts are the basis of human understanding. Fodor does a metaphor when characterize that the concepts are as "atoms" of human thought; Vergnaud argues that the conceptualization is at the "core" of cognitive development. This researcher believes the field of knowledge does not exist without concepts, because human knowledge consists of conceptual fields. Therefore, it is possible to answer the probable question: why are concepts important? Because without them there is no understanding about of anything, there is no cognitive development and the individuals living in a world of concepts. The author defines the theory of conceptual fields from three sets - (a) a set of situation that gives sense and constitutes its referent; (b) a set of invariants (the categories of thoughts seen as relevant); propositions understood as being true about the reality; and relationships (the operation of the concept and its meaning); (c) and a set of symbolic representations that form its significant.

For Moreira the role of concepts in knowledge construction is the motto of the conceptual maps and should centralize the activities of teaching and learning, since without them the individual is not able to have understanding of the knowledge and the human cognition would be harmed. In this sense, Ausubel defines that concept learning is given in two ways: one is the construction of concepts from real experiences, learning by discovery and by the comprehension of the other concepts; and second in which new knowledge may be obtained by interactiong and anchoring under concepts existing in the cognitive structure of the individual. But, when recognize the meaningful learning? In this case, when individual absorb new information and "anchor" on concepts or relevant propositions pre-existing in their cognitive structure. To be meaningful learning, it is necessary to establish the relationship between the theme that will be learned from the cognitive structure of the individual, by not arbitrary and not literal way. Another possibility is the predisposition that the individual must have in order to link, not arbitrary and not literal, the new subject with the pre-existing concepts, and learning will be distinguished

in proportion of their willingness and interest in such relationships. For Novak and Cañas, when learning is significant, there is integration which is positive and it results in human enhancement. The human being thinks, acts, and understands the concepts in an integrated way. Thus, it is possible to draw up an analogy between the meaningful learning and mechanical learning. In the meaningful learning prioritizes some aspects, such as: meant, understanding, transferring ability, relationship among concepts. In the mechanical learning four aspects are prevalent: (a) new content is "stored" in a literal way, without interaction; (b) educators present the concepts; students memorize and "decorate" the concepts; (c) the students generate a dislike to certain content of subjects, mostly those related to field of human sciences; (d) there is less knowledge kept concerning the content, thus, it willbe gradually oblivious. It seems that in mechanical learning, there is low level or no integration of new knowledge with existing ones, resulting in negative consequences: the learned knowledge tends to be soon forgotten; and the structure of knowledge (or cognitive) is not reinforced or modified to clarify misconceptions.Therefore, the learned knowledge has little or no potential for use in training or solving problems.

5.2.12: Concept Maps versus Mind Maps:

Tony Buzan was an English mathematician and psychologist, who created mind maps in the end of the 1960s. Buzan conceived this tool through the observations of the behaviors of students and co-workers who obtained great results using different strategies work and to record their information. Buzan found that they got a great performance from designs, colors, illustrations, symbols and arrows and record of study texts with colored pens. Soon, his study was based on the psychology of learning and Buzan took the view that ideas are not created by the human brain in an organized manner, but rather chaotic; as images seemingly unconnected and random, which will become clear as the neural network of the brain works their relationships with the experiences already witnessed. Before such principle, Buzan created the mind map as a way to draw and structure the thinking that enables quick and deep exploration of ideas, without losing focus of the central theme. It is a graphical representation that designsthe process of thinking about a particular subject or theme, though a process of stimulating creative thinking, by means planning, summarization and memorization. This technique allows relating a set of ideas that new ideas emerge, reaching a virtuous circle that is the focus of creative

thinking. Mind mapping is a powerful tool for recording information non-linearly, i.e., drawn from “webs”, where the main idea is placed at the center, because the ideas are only described with keywords and illustrated with images, icons and many colors. A mind map must be structured from a “tree” and its “branches”; where the center the main trunks expand each topic from the main subject, and each of them come out “branches” smaller with explanatory details. The “web” format of a mind map enables a strong structure through the bindings created, because while linked each other, can be benefited from the support of the entire structure, helps strengthen and understanding it. When drawn, a mind map is organizing a hierarchy and the topics of subject, while summarizing, providing a global view, showing details and inter connections of the subject and the use of figures and colors can promote memorization of information to “encourage” the brain.

Thereby, the mind map is a useful tool for various applications, such as lecture notes, book summaries, planning lectures, etc. In short, to organize thinking similarly to the way the brain works, because the mind map improvement their skills, promoting the understanding, analysis, interpretation and records of the subject. Buzan and Buzan identified some advantages in using the mind map in relation to the traditional way of record: (a) reductions in record time information, avoiding loss of content; (b) reduction in reading time: easier identify and memorizing information; (c) reduction in time to identify key words in a text, since the mind map and these are words used; (d) and stronger correlation between the information. Thus, the question comes out: what are the benefits that mind maps provide for those who use them? First, it is theorganization of knowledge and greater opportunities forapplication. Second, it is easier and safer to remember about subjects learned previously. Third, focusing on what is relevant and important about some specifically topic. Fourth, increased productivity in the study; and Fifth, the information is more structured and secure. However, the development of mind maps depends on several factors: the resources that the individual has; the individual’s goals and needs; the content to be mapped and its current format; the individual’s level knowledge about the content; the individual’s experience with mind map; and the individual’s experience about software to assist them in the drawn and modify the mind maps. In summary, the ideal is the structural unit of mind maps. This guideline leads to mind maps that are known mnemonic, because: contain keywords that are used to reactive memories; serve to develop memory and make easy the memorization (through

technical exercise); and should be easy to remember about some sort of subject. This means that mind maps are as a network of concepts linked and connected, where goals are finding creative associations between the ideas and. There is no doubt that the mind map has the major advantage of freely and without restrictions to prepare the structure; but the main disadvantage is that the links are restricted to simple associations, and is no efficient for an aim which requires an understanding of how a concept is essential to understand the other. For this case, the concept map seems to become more effective. Nevertheless, the concept maps may produce to educators the following benefits: (a) summarize and integrate concepts; (b) make easy the understanding of complex concepts; (c) understand connections amongseveral concepts; (d) assisting in the teaching and learning process; (e) increase the "role" of students learning; (f) learn concepts from relations and propositions; (g) make students to show the understanding about some subject; (h) organize concepts through hierarchies. However, the challenges are: awareness that concept maps cannot be applied in all classes and the educators must set up criteria to evaluate the maps.

5.2.13: Models for Assessment of the ConceptMaps:

One of the biggest challenges of the concept maps is the evaluation process, due to the fact that the map is prepared by the perception of individuals learning. In the other words, there are no maps 100% incorrect (or wrong). However, there are some models using assessment scales, for example 0-3; and there are others who assess using: great, good, acceptable and unacceptable. In order to provide a variety of options of assessment, it will be exposed seven alternatives for assessing a concept map. We will not discuss the merits about what is the best or worst, but rather, provide the reference parameters for evaluation.

There are so many models for assessment of concept map. Here two models have been presented. The first model prepared by Bartels established three assessment parameters: concepts and terminology; knowledge of the relationships between concepts; and ability to communicate through concepts maps, as follows in Table 1. The second model is from Cronin, Dekker and Dunn, and has a structure very similar to Novak and Gowin: concepts; grouping; hierarchy, branching and proposition, as follows in Table 2.

Table 1 : Bartels Model

Criteria	Description
Concept and Terminology	Shows an understanding of the topic's concepts and principles and uses appropriate terminology and notations. (**Score 3 points)**Makes some mistakes in terminology or shows a few misunderstandings of concepts.(**Score 2 points)**Makes many mistakes in terminology and shows a lack of understanding of many concepts.(**Score 1 point)**Shows no understanding of the topic's concepts and principles. (**Score 0 points)**
Knowledge of the Relationshipamong Concepts	Identifies all the important concepts and shows an understanding of the relationships among them. **(Score 3 points)**Identifies important concepts but make some incorrect connections. (**Score 2 points)**Makes many incorrect connections. (**Score 1 point)**Fails to use any appropriate concepts or appropriate connections. (**Score 0 points)**
Ability to Communicate throughConcept Maps	Constructs an appropriate and complete concept map and includes examples; places concepts in an appropriate hierarchy and places linking words on all connections.(**Score 3 points)**Places almost all concepts in an appropriate hierarchy and assigns linking words to most connections; produces a concept map that is easy to interpret. (**Score 2 points)**Places only a few concepts in an appropriate hierarchy or uses a few linking words; produces a concept map that isdifficult to interpret. (**Score 1 point)**

Table 2: Cronin, Dekker and Dunn Model

Criteria	Description
Concepts	Concepts are objects, events, situations or properties of things that designated by a label or symbol. ***Score 1 point,*** for each concept that is connected to at least one other concept by a proposition
Grouping	Grouping at the ways concepts can be linked or joined together. There are three types of grouping: (I) point grouping: a number of single concepts emanating from one concept. ***Score 1 point*** for each concept in the group; (II) open grouping: three or more concepts that are linked in a single chain. ***Score 2 points for each concept in the group;***(III) closed grouping: concepts that form a closed system (a loop). ***Score 3 points*** for each concept in the group.
Hierarchy	Concepts on a map can be represented as a hierarchical structure in which the more general, more inclusive concepts are at the top of the map; the specific and exclusive concepts are at the lower end of the map. Concept hierarchy is based upon the extent that concepts are present in "assigned levels" (as designated by the instructor). ***Score 4 points*** are given to eachconcept correctly assigned to a level; ***Score 2 points*** for each concept on a level one-removed from an assigned level; and***no score*** for concepts that are on a level two or more levels removed from the assigned level.

Criteria	Description
Branching	Branching of concepts refers to the level of differentiation among concepts, that is, the extent the more specific concepts are connected to more general concepts. ***Score 1 point*** for each branching point that has at least two statement lines.
Proposition	Relationships between concepts are represented by connecting word(s) and phrases written on the line joining any two concepts. (I) a Simple Proposition is a simple English word or phrase. ***Score 1 point*** for each word or phrase; ***give a half*** for repeated use of Simple Propositions; (II) a Scientific Proposition is a phrase or statement that is composed of technical or scientific word(s). Score 2 points for each proposition; give 1 point for repeated use of Scientific Proposition.

It must be acknowledged, from the two models of evaluation of conceptual maps, the different views of the authors who produced such models. It is not for them to hold a position on which is the best or worst model. So, empirical research is necessary to make conclusions.

5.5: Authentic Evaluation: Interviews, Writing Samples, Projects, Exhibitions, Reflective Journals

More traditional forms of assessment, such as essays and examinations, have no specific application in most real-world settings. Authentic assessment helps students contextualize their learning and to see how real-life conditions or situations, in all their unpredictability, ambiguity and complexity, affect their theoretical knowledge. As they draw together their knowledge and skills to engage productively and solve problems, their behaviour clearly shows, both to staff and themselves, the level of capacity or competency they have gained. Authenticity is a fundamental characteristic of good assessment practice and students usually value it highly.

5.3.1:Authentic Assessment:

When considering how to assess student learning in a course, most instructors would agree that the ideal assessment would be one that not only assesses students' learning; it also teaches students and improves their skills and understanding of course content. One fundamental aspect of such assessments is that they are *authentic*.

Authentic assessment is the measurement of "intellectual accomplishments that are worthwhile, significant, and meaningful, as contrasted to multiple choice standardized tests. Authentic assessment can be devised by the teacher, or in collaboration with

the student by engaging student voice. When applying authentic assessment to student learning and achievement, a teacher applies criteria related to "construction of knowledge, disciplined inquiry, and the value of achievement beyond the school." Authentic assessment tends to focus on contextualized tasks, enabling students to demonstrate their competency in a more 'authentic' setting.

An authentic assignment is one that requires application of what students have learned to a new situation, and that demands judgment to determine what information and skills are relevant and how they should be used. Authentic assignments often focus on messy, complex real-world situations and their accompanying constraints; they can involve a real-world audience of stakeholders as well. According to Grant Wiggins (1998), an assignment is authentic if it -

- is realistic,
- requires judgment and innovation,
- asks the student to "do" the subject,
- replicates or simulates the contexts in which adults are "tested" in the workplace or in civic or personal life,
- assesses the student's ability to efficiently and effectively use a repertoire of knowledge and skills to negotiate a complex task,
- allows appropriate opportunities to rehearse, practice, consult resources, and get feedback on and refine performances and products.

An authentic assessment usually includes a task for students to perform and a rubric by which their performance on the task will be evaluated.

5.3.2:Differences between Conventional Test and Authentic Assessment:

Authentic assessments can be contrasted with conventional test questions, which are often indirect measures of a student's ability to apply the knowledge and skills gained in a course. Conventional tests have an important place in college courses, but cannot take the place of authentic assessments. The table 3 below, drawn from Wiggins, illustrates the differences between conventional tests and authentic assessments:

Table : 3

Conventional tests	Authentic assessment	Indicators of authenticity
Require correct responses	Require a high-quality product or performance, and a justification of the solutions to problems encountered	Correctness is not the only criterion; students must be able to justify their answers.
Must be unknown to the student in advance to be valid	should be known in advance to students as much as possible	The tasks and standards for judgment should be known or predictable.
Are disconnected from real-world contexts and constraints	Are tied to real-world contexts and constraints; require the student to "do" the subject.	The context and constraints of the task are like those encountered by practitioners in the discipline.
Contain items that isolate particular skills or facts	Are integrated challenges in which a range of skills and knowledge must be used in coordination	The task is multifaceted and complex, even if there is a right answer.
Include easily scored items	Involve complex tasks that for which there may be no right answer, and that may not be easily scored	The validity of the assessment is not sacrificed in favor of reliable scoring.
Are "one shot"; students get one chance to show their learning	Are iterative; contain recurring tasks	Students may use particular knowledge or skills in several different ways or contexts.
Provide a score	Provide usable diagnostic information about students' skills and knowledge	The assessment is designed to improve future performance, and students are important "consumers" of such information.

5.3.3: Philosophical difference between traditional assessment and authentic assessment:

By "traditional assessment" I am referring to the forced-choice measures of multiple-choice tests, fill-in-the-blanks, true-false, matching and the like that have been and remain so common in education. Students typically select an answer or recall information to complete the assessment. These tests may be standardized or teacher-created. They may be administered locally or statewide, or internationally. Essentially, traditional assessment is grounded in educational philosophy that adopts the following reasoning and practice:

(a) A school's mission is to develop productive citizens.

(b) To be a productive citizen an individual must possess a certain body of knowledge and skills.

(c) Therefore, schools must teach this body of knowledge and skills.

(d) To determine if it is successful, the school must then test students to see if they acquired the knowledge and skills.

But authentic assessment is grounded in educational philosophy that adopts the following reasoning and practice:

- A school's mission is to develop productive citizens.
- To be a productive citizen, an individual must be capable of performing meaningful tasks in the real world.
- Therefore, schools must help students become proficient at performing the tasks they will encounter when they graduate.
- To determine if it is successful, the school must then ask students to perform meaningful tasks that replicate real world challenges to see if students are capable of doing so.

5.3.4: When to use authentic assessment:

Ideally authentic assessment should provide long-term student engagement with learning and can occur at any stage of the teaching program. It should utilise a variety of resources and perspectives over a sustained period of time, as well as peer collaborations to promote engaging and open conversation.

Authentic assessment should be based in an environment that the student could work in, learn in or utilize post task and include the development of a scenario. This type of learning and teaching is preferable toward the end of a degree when students are comfortable collaborating and working on ill-defined problems, and have skills in reflection.

5.3.5: Benefits of authentic assessment:

Authentic assessment can benefit students in many ways:

(a) Students generally accept authentic assessment as a valid approach, and favour it as a method that motivates them to engage in deeper and more productive learning.

(b) Because it involves addressing "ill-structured", unpredictable challenges, it helps students rehearse for the complex ambiguities of working and professional life, and to visualise themselves as real professionals.

(c) It requires students to construct unique responses rather than selecting from pre-existing options. In this way it challenges students to undertake complex higher order reasoning, and to think independently and creatively.

(d) Students can reflect on and assess their own work and effort. They can see, meaningfully, how effectively they apply conceptual learning.

(e) Students can integrate their learning in a holistic way, bringing together work samples collected over time, perhaps in the preparation of a portfolio.

(f) External stakeholders, such as industry groups and professional bodies, favour universities offering work-relevant experiences. Authentic assessment enhances graduate employability by developing students' "work-readiness" capabilities.

(g) It can creatively disrupt the traditional power balance in assessment by allowing external markers to give feedback and/or grade students' work, and students to actively engage in self and peer assessment.

(h) Authentic assessment addresses Boud and Falchikov's (2005) calls for "sustainable assessment". It helps equip learners with relevant workplace skills and competencies and prepares them for lifelong learning.

5.3.6: Challenges of authentic assessment:

The very characteristics that make authentic assessment so significant challenges for students are as follows:

- Unpredictability increases the potential for things to go wrong and jeopardise a student's chance to demonstrate their achievements and capabilities.
- Authentic assessment in actual workplaces can place a significant burden on associated staff. Arranging each student's unique setting in advance, negotiating their individual tasks and interpreting and grading their work can be very time-consuming.
- Developing appropriate simulations is resource intensive, although it can yield long-term returns.
- Assessment tasks, if their scope is not carefully articulated at the outset, can expand to create an unreasonable workload for students. The resulting problems or delays in completing tasks may place students and staff in an awkward position with host organizations or supervisors.

Authentic assessment tasks may be problematic for particular students. For example:

- Access to off-campus activities may be difficult for students with mobility issues. Block placements may place prohibitive additional burdens on students with carer responsibilities.
- Students may feel anxious about whether they will fit in, whether they will be able to communicate effectively and so on, particularly when high-stakes assessment will depend on their capacity to interact within the authentic setting.
- Make sure you tell students what accommodations and alternative arrangements are available in such circumstances. Also, be aware of students' diverse levels of experience in the types of authentic settings established for learning and assessment activities, so that students can be well prepared and supported at all stages.

5.3.7: The attributes of traditional and authentic assessments:

Let me clarify the attributes by elaborating on each in the context of traditional and authentic assessments:

***(a) Selecting a Response to Performing the Task*:** On traditional assessments, students are typically given several choices (e.g., a,b,c or d; true or false; which of these match with those) and asked to select the right answer. In contrast, authentic assessments ask students to demonstrate understanding by performing a more complex task usually representative of more meaningful application.

***(b) Contrived to Real-life*:** It is not very often in life outside of school that we are asked to select from four alternatives to indicate our proficiency at something. Tests offer these contrived means of assessment to increase the number of times you can be asked to demonstrate proficiency in a short period of time. More commonly, in life, as in authentic assessments, we are asked to demonstrate proficiency by doing something.

(c) Recall/Recognition of Knowledge to Construction/Application of Knowledge: Well-designed traditional assessments (i.e., tests and quizzes) can effectively determine whether or not students have acquired a body of knowledge. Thus, as mentioned above, tests can serve as a nice complement *t*o authentic assessments in a teacher's assessment portfolio. Furthermore, we *are* often asked to recall or recognize facts and ideas and propositions in life, so tests are somewhat authentic in that sense. However, the demonstration of recall and recognition on tests is typically much less revealing about what we really

know and can do than when we are asked to construct a product or performance out of facts, ideas and propositions. Authentic assessments often ask students to analyze, synthesize and apply what they have learned in a substantial manner, and students create new meaning in the process as well.

(d) Teacher-structured to Student-structured: When completing a traditional assessment, what a student can and will demonstrate has been carefully structured by the person(s) who developed the test. A student's attention will understandably be focused on and limited to what is on the test. In contrast, authentic assessments allow more student choice and construction in determining what is presented as evidence of proficiency. Even when students cannot choose their own topics or formats, there are usually multiple acceptable routes towards constructing a product or performance. Obviously, assessments are more carefully controlled by the teachers offer any advantages and disadvantages. Similarly, more student-structured tasks have strengths and weaknesses that must be considered when choosing and designing an assessment.

(e) Indirect Evidence to Direct Evidence: Even if a multiple-choice question asks a student to analyze or apply facts to a new situation rather than just recall the facts, and the student selects the correct answer, what do you now know about that student? Did that student get lucky and pick the right answer? What thinking led the student to pick that answer? We really do not know. At best, we can make some inferences about what that student might know and might be able to do with that knowledge. The evidence is very indirect, particularly for claims of meaningful application in complex, real-world situations. Authentic assessments, on the other hand, offer more direct evidence of application and construction of knowledge. Can a student effectively critique the arguments someone else has presented (an important skill often required in the real world)? Asking a student to write a critique should provide more direct evidence of that skill than asking the student a series of multiple-choice, analytical questions about a passage, although both assessments may be useful.

Teaching to the Test

These two different approaches to assessment also offer different advice about teaching to the test. Under the traditional assessment model, teachers have been discouraged from teaching to the test. That is because a test usually assesses a sample of students' knowledge and understanding and assumes that students' performance on the sample is representative of their knowledge of all the relevant

materials. If teachers focus primarily on the sample to be tested during instruction, then good performance on that sample does not necessarily reflect knowledge of all the materials. So, teachers hide the test so that the sample is not known beforehand, and teachers are admonished not to teach to the test.

With authentic assessments, teachers are encouraged to teach to the test. Students need to learn how to perform well on meaningful tasks. To aid students in that process, it is helpful to show them models of good (and not so good) performance. Furthermore, the student benefits from seeing the task rubric ahead of time as well. Is this "cheating"? Will students then just be able to mimic the work of others without truly understanding what they are doing? Authentic assessments typically do not lend themselves to mimicry. There is not one correct answer to copy. So, by knowing what good performance looks like, and by knowing what specific characteristics make up good performance, students can better develop the skills and understanding necessary to perform well on these tasks.

5.3.8: Authentic assessment complements traditional assessment:

But a teacher does not have to choose any one between authentic assessment and traditional assessment. It is likely that some mix of the two will best meet your needs. To use a silly example, if I had to choose a chauffeur from between someone who passed the driving portion of the driver's license test but failed the written portion or someone who failed the driving portion and passed the written portion, I would choose the driver who most directly demonstrated the ability to drive, that is, the one who passed the driving portion of the test. However, I would prefer a driver who passed both portions. I would feel more comfortable knowing that my chauffeur had a good knowledge base about driving (which might best be assessed in a traditional manner) and was able to apply that knowledge in a real context (which could be demonstrated through an authentic assessment).

5.3.9: Interviews:

An interview is a method of asking quantitative or qualitative questions orally of key participants. Quantitative questions are closed-ended, and have specific answers to choose among that can be categorized and numerically analyzed. Qualitative questions are open-ended, that is, the respondent provides a response in his or her own words. Interviews conducted for program evaluation are typically qualitative but may also include some quantitative questions. There are three approaches to qualitative interviews that vary in their level of structure and can be combined.

(a) ***Informal conversational interviews are the leaststructured:*** The wording of the questions and topics to be discussed are not predetermined. These types of interviews often occur spontaneously.

(b) ***Semi-structured interviews*** include an outline of topics or issues to be covered, but the interviewer is free to vary the wording and order of the questions.

(c) ***Standardized open-ended interviews*** are the most structured and include a set protocol of questions and probes. The interviewer is not allowed flexibility in the wording or order.

5.3.10: When should you use interviews for evaluation?

One may use interviews for evaluation in the following cases:

- **To get more in-depth information about perceptions, insights, attitudes, experiences, orbeliefs.** Interviews are useful for gathering subjective perspectives from respondents.
- **When you are evaluating individual differences between respondents' experiences and outcomes.** You can ask the same question of people individually to compare their responses and analyze how these individual differences may reflect on your program.
- **As a follow-up to other methods.** Interviewing is a useful way to follow-up with questions you may have after analyzing data from other evaluation methods such as observation, questionnaires, or record review.

5.3.11: Planning for interviews:

Successful interviews start with thorough planning:

(a) ***Determine your focus.*** Think about the evaluation question(s) you want to answer and make sure that you include only interview questions that will answer your evaluation questions.

(b) ***Develop an interview guide or questionnaire.*** The specificity of written interview guidance will vary depending on the types of interview you are conducting. For an informal conversational interview you will probably not prepare any interview guidance. For a semi-structured interview your interview guidance might include specific topics to be covered in the interview and may also include some questions. For a standardized open-ended interview you will need to develop all your questions, the order of the questions, and probes.

Probes are a way to clarify a response to a question by asking more detailed follow-up questions.

(c) ***Select the number and type of people to beinterviewed.*** Select the type of people you want to interview to answer your evaluation questions. You should also decide if you should include all possible participants or if a sample will suffice. This will depend on the number of possible participants and the resources you have available.

(d) ***Train the interviewers.*** If other people are interviewing your respondents they will need to be trained in how to conduct an interview and on your interview guide.

(e) ***Ensure respondents' confidentiality.*** Determine how you will maintain confidentiality of respondents and provide respondents with information about how you will do so.

Pilot test the interview guide or questionnaire. Pilot testing allows you to identify questions that may be confusing to or misinterpreted by your respondents. Pilot testing typically involves conducting a few interviews and then determining if any changes are needed to the interview guide or questionnaire.

5.3.12:How to conduct an interview?

At the time of taking interview an interviewer must keep the following things in mind:

(a) ***Build trust and establish rapport.*** It is important that your respondent feels comfortable answering questions honestly. Providing the respondent with appropriate assurances of confidentiality will help you build trust. During the interview, show empathy, listen actively, and maintain eye contact. You may also want to start with less sensitive questions before asking more sensitive, controversial questions.

(b) ***Keep a neutral demeanor.*** Most respondents will not want to say things that they feel you disagree with so it is important that you not show strong reactions or emotions.

(c) ***Stay in control of the interview.***Although it is important to allow for flexibility during the interview, you also need to set the direction for the interview and keep the respondent from straying from the topics you planned to discuss.

5.3.13: Advantages of interviews:

The advantages of interviews are that -

(a) it is useful for gaining insight and context into a topic;

(b) it allows the respondent to describe what is important to her or him;

(c) it is useful for gathering quotes and stories;

5.3.14: Disadvantages of interviews:

The disadvantages of interviews are that—

(a) it is susceptible to interview bias;

(b) it is time consuming and expensive compared to other data collection methods;

(c) it may seem intrusive to the respondent.

5.3.15: Writing samples:

Writing samples is a modern technique of evaluation. This enables to evaluate the writing skill and communication style and depth of the knowledge of the writer about the content of the topics of the writing sample. Though at present this method of evaluation is mainly used by the employer of different company to evaluate job-seekers, in entrance test of various courses but this may be a supplementary method of evaluation along with other evaluation of the school students also. Fields that commonly require writing samples include editing, publishing, research, and law. The length of the writing sample is usually determined by the evaluator. However, as a general rule samples should not exceed five pages in length. If the evaluator does not specify a certain topic, pick something that interests you and that relates somewhat to the field you are entering. Do not write about a topic that may be construed as controversial in nature. Additionally, be careful to omit any confidential and privileged information from your writing sample. For example, if you are submitting a case study, delete names or any other identifying information. As with any material that you submit to a prospective employer, your writing sample should be grammatically correct and free of typographical errors and misspellings.

5.3.16: Choosing a writing sample:

When an evaluator asks for a writing sample one should be careful of the following things as he chooses the topics of writing sample:

(a) ***Follow the evaluator's instruction.*** The evaluator might ask for a specific type of writing like a piece covering a certain topic. Read the evaluator's instructions carefully before making a writing sample selection.

(b) ***Consider relevant writing samples.*** When deciding on a writing sample, you should consider only those writing pieces that are relevant to the position. For example, if you are applying for a job of scientific research position and you are asked to submit a writing sample, you should select a research paper from your most recent position or highest level of schooling. If you are applying for a position in Public Relation Officer, you should submit a press release or other relevant document in your writing sample. If you are a student to be evaluated your mathematics knowledge you will definitely select a topics on mathematics.

(c) ***Find relatable topics.*** Along with selecting a relevant writing style, you should try to find a sample that also relates to the subject matter of the evaluation. Submitting a sample with content similar to what you'll be writing about on the job will help employers relate your writing skills directly to the job.

(d) ***Align your writing with the company's tone.*** One should select a piece of writing that is relatable for the company. For example, one should not submit a sarcastic, irreverent writing sample alternatively, one might not submit a modest, simple writing sample for evaluation.

(e) **Make sure it is up to date.** Selecting a writing sample that is older than one year might contain out of date or irrelevant content. If a student are selecting an old writing sample, be sure to carefully review and update it to reflect the most recent ideas.

(f) **Avoid sensitive subject matter.** Unless specifically requested by the evaluator, one should avoid sensitive content like politics, religion or personal information. The writer should also review his writing sample to exclude any confidential information like third-party contact information or information like financial or other data.

5.3.17: Projects:

Project is a unique set of co-ordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined schedule, cost and performance parameters. Project is a good medium of learning. Because, a student working with his assigned project, learns a lot of

thing related with the project when he engages himself with the project. On the other hand project is a very good method of evaluation of the student. Because, checking the project of a student an evaluator can evaluate the student's cognition up to higher level. When the cognitive level of a student is evaluated by assigning a project to the student it is called **project based evaluation**.

5.3.18: Project-based evaluation:

Project-based evaluation is an opportunity to utilize and measure the higher order thinking skills of students. A Project-based evaluation will apply multi-faceted skills to be encompassed into a cumulative **project**.

Assignments that compile into a Project-based evaluation are also a technique option for educators looking to review the ability of students to be creative, diverse and authentic with their course work and the experience gained throughout the time frame of the class. Learning is guided by much more than study skills and the completion of worksheets and lesson plans. The ability of teachers to apply additional assessment techniques to determine the level of understanding of a topic can be highly beneficial to the overall development of a student.

5.3.19: Effective Utilization of Project-Based Assessments:

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 evaluation but its effectiveness as an assessment opportunity would require a more direct correlation. Developing rubrics to define the class structure and curriculum design can be an effective means of applying project-based learning skills.

5.3.20: Advantages of Project-Based Assessments:

Some benefits of project based assessments include the overall advantage point of subject correlation with industry applications. For example, students learning traditional uses of mathematics formulas or physics theories may benefit from studying the use of these topics in everyday life. The idea behind a value added project-based assessment is to strengthen the understanding of the lesson plans through experiencing the subject matter in a relevant way.

Expressive educational areas such as the arts, are especially an area where the creativity of a project can be largely left up to the endeavors of a student. However, overall the teacher has the responsibility to develop adequate worksheets and lesson plans to support the central ideas or techniques surrounding the projects.

There are many teacher resources available to help with the development of a project-based assessment plan. From rubrics to lesson plans and study skill suggestions, effective methods are available to assist educators with the implementation and execution of these techniques. The ability to guide students towards developing an overall understanding of course work is integral to building on the continuous development of skills and classroom experiences.

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. You can use projects as part of the ongoing learning process or as a capstone assessment in place of a traditional final exam.

Project-based assessment is often a component of project-based learning (PBL), in which the entire focus of a course or unit is to teach via student engagement in problem-solving and exploration. Like PBL, project-based assessment is student-centered and requires reflection on both the process and the content to be meaningful.

Making project-based assessment work takes careful planning and a willingness to be flexible, as no two student projects will be alike. If a teacher likes to try project-based assessment in his classroom following practices may be considered:

- Allow students to choose topics, problems, and the direction of their work to make it personally meaningful.
- Be clear about the parameters of the project and your grading rubric from the outset so students—and parents—know what to expect.
- If students are working in groups, make sure you have a way to assess individual learning rather than just giving a shared grade on the final product.

The teacher should heck in with students frequently, both informally and with announced benchmarks to scaffold learning and set them up for success.

5.3.21:Benefit of Students from Project-based Assessments:

There are many ways in which project-based assessments benefit students. Below are a few key benefits:

(a) Authenticity:

The best projects are authentic in that they provide real-life experiences and opportunities to apply learning to areas that affect students' communities. Increasing

engagement with the world around them prepares students to be good citizens in addition to making them college-and career-ready. Colleges and employers require students who can do more than just memorize subject-area information.

(b) Motivation:

The best designed project-based assessments give students voice and choice; that is, students can select the work that is most meaningful to them. This increases engagement and motivation to do well and opens the door for deeper, richer learning that will stick with students for life. They also have the opportunity to share their work and develop strong communication skills in addition to standard subject-area knowledge.

(c) Meta-cognition:

Well-designed project-based assessments provide significant feedback to students about their progress along the way. Instead of waiting for the results of a single test, they can make their own goals and benchmarks to track their learning. This requires designing clear, detailed rubrics that students can use to measure their progress as they work. Informal check-ins will also help students sharpen their thinking and build confidence as they work.

(d) Collaboration:

Projects are the perfect opportunity for students to work together toward a common goal. Small group work is linked to better retention of information and career-readiness to the "soft skills" involved in working with others regularly. Structured collaboration is key, so grades should be clearly divided between group goals and individual progress to provide an accurate measure of learning.

(e) Creativity:

Because project-based learning often involves problem-solving, students develop creativity and critical thinking skills that serve them well in college and careers. Group projects in particular can boost this effect—studies have found that when students focus on overcoming conflict together instead of avoiding it, their academic and career-ready skills experience a boost. Finding innovative ways to approach a problem is great practice for applying skills in any future endeavor.

5.3.22: Exhibitions:

In education, the term exhibition refers to projects, presentations, or products through which students "exhibit" what they have learned, usually as a way of demonstrating

whether and to what degree they have achieved expected learning standards or learning objectives. An exhibition is typically both a learning experience in itself and a means of evaluating academic progress and achievement. **The exhibition** is a general term used for the organized collection of selected items and their display in public. In more simple words, an exhibition is simply a collection of things for display. The exhibition focuses on the identification, display, and interpretation of collective things. Talking about the exhibition in the education process of teaching and learning, the exhibition is a test of the teachers as well as the students and their combined learning process. The teachers are tested on how far they have been successful in imparting the desired knowledge and skills whereas the students are tested on the parameters of how much they have acquired by the teaching process. Here, the exhibition displays the learning of the students and even in the complete process of the exhibition the teaching and learning process continues.

In contrast to worksheets, quizzes, tests, and other more traditional approaches to assessment, an exhibition may take a wide variety of forms in schools:

- Oral presentations, speeches, or spoken-word poems;
- Video documentaries, multimedia presentations, audio recordings, or podcasts;
- Works of art, illustration, music, drama, dance, or performance;
- Print or online publications, including websites or blogs;
- Essays, poems, short stories, or plays;
- Galleries of print or digital photography;
- Scientific experiments, studies, and reports;
- Physical products such as a models, sculptures, dioramas, musical instruments, or robots;
- Portfolios of work samples and academic accomplishments that students collect over time.

Generally speaking, there are two primary forms of exhibition:

1. A multifaceted assignment that serves as a culminating academic and intellectual experience for students, typically during their final year of high school or middle school, or at the end of an academic program or learning-pathway experience (in this case, terms such as capstone exhibition, culminating exhibition, or senior exhibition may be used).

2. A project, presentation, product, or portfolio that teachers use as a form of summative assessment—i.e., an evaluation of student learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period, such as a unit, course, semester, program, or school year (in this case, terms such as performance exhibition, learning exhibition, or student exhibition may be used).

5.3.23: Benefits of Exhibitions:

Exhibitions no doubt are a very effective tool of the learning process as well as evaluation process. There are numerous benefits to organizing an exhibition for students. Let us enlist the advantages of an exhibition and find out the sole purpose of exhibition in the education process.

- **Mass Medium:** Exhibitions provide the students with a large platform to showcase their talent and present it in public. The exhibition is a mass medium through which students can represent their learning and hidden talent among others.
- **Exposure:** Exhibition of course gives exposure to the students, exposure to the needs of the society, exposure to the new discoveries and inventions, exposure to working in the group.
- **Research and Technical Mindset:** In the process of exhibiting a model, the students undergo a lot of research work to arrive at the required meaningful information. The mind develops the technical approach towards any given problem and starts analyzing the hidden facts, working, and procedure of the model.
- **Social Skills:** Education's one of the most important aims is to impart and instill in the students' social skills necessary to live a life of peace. Social skills are very crucial to living together in a social surrounding. The students learn to work in the group and respect each other's views. The students learn to care and love other human beings in the group. They also realize the value and power of working together in a group.
- **Awareness:** Getting involved in an exhibition demands awareness about the latest researches, challenges of the society, inventions and discoveries of the students. A student who is not aware of what is happening around him would not be able to give the desired results during the exhibition.
- **Creativity:** The exhibition drives creativity from deep inside the students. The students search and explore creative solutions to the various challenges they have to deal with.

- **Critical Thinking:** The science exhibition demands critical analysis of any situation and the student's needs to analyze both the pros and cons of the challenge. After analyzing the situation from all possible perceptions, using the critical ability the students reach the desired conclusion or the solution.
- **Solution Developing:** Generally, people feel anxiety or nervousness when faced with a challenge in life. The students when experience an exhibition ripen the solution developing ability. This ability to not becoming anxious and instead approach towards the solution or finding the best possible solutions help the students throughout life in facing major challenges.
- **Application:** Exhibition is one of the best methods to test the application of whatever has been taught or learned. The students learn to apply the knowledge and information collected through various sources and the teacher has the opportunity to test the students what and how much they have learned.
- **Goal Setter:** for the exhibition students need to select a challenge and then to find out the solution for the same by research and analysis. This way the students develop a tendency to set goals for themselves in life and then they work with all their strength to arrive at the solution and meet their goal. This helps the students to reach heights in their personal and professional life.
- **Preservance:** The models represented in an exhibition are preserved for future reference. In this way, a number of solutions to several problems are preserved.
- **Acceptance:** many times the talent does not get revealed due to a number of reasons. The exhibition is a great method to get the talent accepted and noticed. The words of praise raise the confidence and self-esteem of the students to strive for more.

5.3.24: Reflective Journals:

Journaling is used in academia as a means of aiding reflection, deepening students understanding and stimulating critical thinking. The value of journaling in improving student learning outcomes cannot be overemphasized. Hence, a wide range of teaching strategies using journaling have emerged in the literature. Reflective journal writing is one such technique that has been promoted by educators as a means of encouraging reflective learning.

The strength of reflective journaling is that it highlights students' thoughts and perceptions about course content. It is a heuristic teaching tool that fosters critical thinking skills and develops reflective practices among students. This increases

student interest and encourages further investigation. Reflective journaling is not simply a recounting of the day's events but a learning exercise in which students express in writing their understanding of, reflections on, response to or analysis of an event, experience or concept. This form of writing encompasses all aspects of the students' thoughts and emotions around specific aspects of their experiences in class and increases attention and concentration levels during class time.

Furthermore, reflective journaling plays a major role in the transformative learning process. Transformative learning is thoughtful learning employed deliberately by the student under the guidance of the teacher. It allows students to change their orientation by critically reflecting on their beliefs and consciously making and implementing plans that bring about improved ways of redefining their beliefs. Reflective journaling is a useful tool in facilitating the critical reflection underpinning transformative learning.

Study of questioning the current in-service teacher training also introduces a school-based reflective learning environment where teachers learn how to write and use reflective journals, which provide teachers with new experiences and develop reflective leadership skills. Journal writing, within this context, is considered to be new learning tools for teachers to create an awareness on their current practice. Through reflective journals aiming to create critical environments, teachers can provide other teachers with an opportunity to reflect on their existing consider.

5.3.25: Description of a Reflective Journal:

Reflective journaling provides a channel of inner communication that connects beliefs, feelings and actions which allows students to develop their knowledge and understanding of course content. This creates effective learning conditions that result in self discovery. A reflective journal - often called a learning journal - is a steadily growing document that the learner writes to record the progress of their learning. Learners keep a learning journal for any course they undertake, or even for daily work.

5.6: Self-evaluation

Student self-assessment involves students in evaluating their own work and learning progress. In order to become lifelong learners, students need to learn the importance of self-evaluation. They can do this by filling out self-evaluation forms, journalizing, taking tests, writing revisions of work, asking questions, and

through discussions. When students evaluate themselves, they are assessing what they know, do not know, and what they would like to know. They begin to recognize their own strengths and weaknesses. They become more familiar with their own beliefs, and possibly their misconceptions. After the self-evaluation they will be able to set goals that they feel they can attain with the new knowledge they have about themselves.

Teachers should encourage self-evaluation because self-assessment makes the students active participants in their education (Sloan, 1996). There are a variety of ways for teachers to provide the students with self-assessments. Research suggests that the simplest tools to encourage student self-assessment are evaluative questions that force students to think about their work (Hart, 1999). Some examples of these questions include the following:

1. How much time and effort did you put into this?
2. What do you think your strengths and weaknesses were in this assignment?
3. How could you improve your assignment?
4. What are the most valuable things you learned from this assignment?

It is important for teachers to model self-assessment too. Teachers need to show their students that it is important for everybody to self-evaluate by doing their own self-evaluations. One thing teachers can do is to ask their students for feedback on how the class is going and what the teacher is doing well and not so well. In this way the teacher is showing that they want to make improvements where needed. Teachers could put up a suggestion box, and they can hand out evaluation forms at different times of the year. This shows the students that continuous improvement is important.

Self-assessment is a valuable learning tool as well as part of an assessment process. Through self-assessment, students can:

- identify their own skill gaps, where their knowledge is weak;
- see where to focus their attention in learning;
- set realistic goals;
- revise their work;
- track their own progress;
- if online, decide when to move to the next level of the course.

This process helps students stay involved and motivated and encourages self-reflection and responsibility for their learning.

You should set clear expectations for student performance. As in peer assessment, you need to coach students on assessment criteria and how to apply them in grading their work. Give them practice assessing them.

A valuable process on its own, self-assessment may be paired with peer assessment. Applying knowledge gained through peer assessment, students' self-assessment can be a potent next step in actively promoting their own learning and achievement.

5.4.1: Teaching student's self-assessment:

A major goal in formative assessment (and in educationmore generally) is to helpstudents monitor and assess Students do not learn tomonitor or assess theirlearning on their own. They need to be taughtstrategies for self-monitoring and self-assessment. While teaching student's self-assessment the following points are to be kept in mind.

- Provide the students model of Success criteria using examples of work.
- Have the students opportunity to practice applying success criteria using anonymous examples.
- Have students practice applying success criteria using their own work; first identifying success and when they become confident in this, ask them to identify where the criteria have not been met, and what they need to do next or to set goals.
- Observe and provide feedback and support as students self-assess.
- Provide opportunities for students to discuss and/or justify their self-assessment.
- Learning to self-assess is not a one-shot event.
- Teachers need to provide ongoing support for self-assessment.
- Providing time and structures, such as templates and discussion about self-assessments, are critical for student success.

5.4.2: Rubrics:

In education terminology, rubric means "a scoring guide used to evaluate the quality of students' constructed responses".Simply, it is a set of criteria for grading

assignments. Rubrics usually contain evaluative criteria, quality definitions for those criteria at particular levels of achievement, and a scoring strategy. They are often presented in table format and can be used by teachers when marking, and by students when planning their work and for student's self-assessment. Rubrics, when used with formative assessment purposes, have shown to have a positive impact on students' learning.

A scoring rubric is an attempt to communicate expectations of quality around a task. In many cases, scoring rubrics are used to delineate consistent criteria for grading. Because the criteria are public, a scoring rubric allows teachers and students alike to evaluate criteria, which can be complex and subjective. A scoring rubric can also provide a basis for self-evaluation, reflection, and peer review. It is aimed at accurate and fair assessment, fostering understanding, and indicating a way to proceed with subsequent learning/teaching. This integration of performance and feedback is called ongoing assessment or formative assessment.

Rubrics can be classified as holistic, analytic, or developmental. Holistic rubrics integrate all aspects of the work into a single overall rating of the work. For example, "the terms and grades commonly used at university (i.e., excellent – A, good – B, average – C, poor – D, and weak – E) usually express an assessor's overall rating of a piece of work. When a research article or thesis is evaluated, the reviewer is asked to express his or her opinion in holistic terms – accept as is, accept with minor revisions, require major revisions for a second review, or reject. The classification response is a weighted judgement by the assessor taking all things into account at once; hence, holistic. In contrast, an analytic rubric specifies various dimensions or components of the product or process that are evaluated separately. The same rating scale labels may be used as the holistic, but it is applied to various key dimensions or aspects separately rather than an integrated judgment. This separate specification means that on one dimension the work could be excellent, but on one or more other dimensions the work might be poor to average. Most commonly, analytic rubrics have been used by teachers to score student writing when the teacher awards a separate score for such facets of written language as conventions or mechanics (i.e., spelling, punctuation, and grammar), organisation, content or ideas, and style. They are also used in many other domains of the school curriculum (e.g., performing arts, sports and athletics, studio arts, wood and metal technologies, etc.). By breaking the whole into significant dimensions or components and rating them separately, it is expected that better information will be obtained by the teacher and the student about what needs to be worked on

next. Developmental rubrics are analytical but also meet developmental characteristics described below. Developmental rubrics refer to a matrix of modes of practice. Practices belong to a community of experts.Each mode of practice competes with a few others within the same dimension. Modes appear in succession because their frequency is determined by four parameters: endemicity, performance rate, commitment strength, and acceptance. Transformative learning results in changing from one mode to the next. The typical developmental modes can be roughly identified as beginning, exploring, sustaining, and inspiring. The timing of the four levels is unique to each dimension and it is common to find beginning or exploring modes in one dimension coexisting with sustaining or inspiring modes in another.

5.4.3: Rating scales:

Rating scale is defined as a closed-ended survey question used to represent respondent feedback in a comparative form for specific particular features/products/ services. It is one of the most established question types for online and offline surveys where survey respondents are expected to rate an attribute or feature. Rating scale is a variant of the popular multiple-choice question which is widely used to gather information that provides relative information about a specific topic.

Researchers use a rating scale in research when they intend to associate a qualitative measure with the various aspects of a product or feature. Generally, this scale is used to evaluate the performance of a product or service, employee skills, customer service performances, processes followed for a particular goal etc. Rating scale survey question can be compared to a checkbox question but rating scale provides more information than merely Yes/No.

5.4.4: Types of Rating Scale:

Broadly speaking, rating scales can be divided into two categories: Ordinal rating scale and Interval rating scale.

(a) Ordinal rating scale: An ordinal rating scale is a scale that depicts the answer options in an ordered manner. The difference between the two answer options may not be calculable but the answer options will always be in a certain innate order. Parameters such as attitude or feedback can be presented using an ordinal scale. A common example of an ordinal rating scale is what's known as the Likert scale, which is named after it's inventor, psychologist Rensis Likert. This type of scale is usually presented with a statement, or set of statements, and the participant

is asked to rate how much they agree or disagree. In execution, ordinal/Likert scale questions usually look something like this:

> Tell us how much would you agree or disagree with the following statement: Your parents are always quarreling in home.

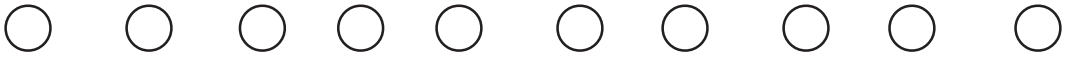
strongly agree **agree** **neutral** **disagree strongly** **disagree**

When to use ordinal rating scale: Ordinal scales can be useful when it comes to latitudinal studies where the researcher is interested in understanding an audiences' perception or opinion of something at a specific point in time. Ordinal scale data can also be easier to work with, as you get compositional data which is typically spread across just 4 or 5 categories (i.e. strongly agree, somewhat agree, etc).

***(b) Interval rating scale*:** An interval rating scale is similar to ordinal in that the response options can be ordered and ranked. But the key difference here is that the response options are numeric, hence the distance between the intervals is quantifiable (i.e. 4 is one unit greater than 3). An important distinction with interval scales compared to ordinal is that the focus shifts from the labels to the numbers, as it's the numeric values that indicate the magnitude of difference. Interval scales also tend to utilize larger ranges, such as a 10 or 11 point scale. In execution interval scales usually look something like this:

Rate how much your mathematics teacher teaches good

1 2 3 4 5 6 7 8 9 10



When to use interval rating scale: Interval scales are often used to give the researcher more precision in their measurement. This is because the respondent has more room for interpreting 'value', which in turn gives the researcher a lot more data. The benefit here is that you have more flexibility for analyzing things like standard deviation and how much variability there is in your dataset. I also find that there are generally more possibilities with how you apply interval scale data. For example, you can analyze your results simply by calculating the mean, median or mode, or you can cluster the results into ranges. Furthermore, interval scales can be better suited to latitudinal studies where you want to be able to track a persistent variable over time.

5.7 : Online Examination

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 online examinations issue results as the candidate finish the examination, when there is an answer processing module also included with the system. They can be used to efficiently evaluate the candidate thoroughly through a fully automated system that not only saves lot of time but also gives fast results. For students they give papers according to their convenience and time and there is no need of using extra thing like paper, pen etc. Candidate is given a limited time to answer the questions and after the time expiry the answer paper is disabled automatically and answers is sent to the examiner. The examiner will evaluate answers, either through automated process or manually and the results will be sent to the candidate through email or made available in the web site.Today many organizations are conducting online examinations worldwide successfully and issue results online.

Online Examination System is based on blockchain technology that continually checks the security and integrity of each record to make the examination processes most secure and tamper-proof. The concept is based on blockchain technology, which is a distributed database running on multiple servers, with a secured chain of data blocks containing highly secured hashcode values. Addition of blocks follows a very powerful proof of work algorithm which ensures that there is no duplicity. Each block is time-stamped and linked to previous blocks, using cryptography to ensure the data is immutable and tampered-proof.

The multi-level security framework prevents the misuse and mismanagement of legal and official data by any unauthorized and potential security threats to the sensitive data on the examination automation software.

The Online Examination System has been designed to make the examination processes easier and paper free which is designed under a multi-level security framework to prevent misuse and mismanagement of legal and official data by any unauthorized and potential security threats to the sensitive data on the examination department automation software.

The registered candidates can create test and give it from their mobile/tablet at any time. Students are given the flexibility to create test Subject wise, Topic wise, and Level wise, choosing the level of test, which could be school level, IIT, Medical

or other competitive examination. If students have any doubt, they can request for 'Plan Test for Me' (PTM) and experts will help them by carefully looking into their study domain.

All the records of completed tests and upcoming tests are there on the cloud and can be accessed by the students and their parents anytime. Soon after submitting the test, the grade card will be sent to the Student and their parents' dashboards.

There are advantages and disadvantages in online examinations. The main advantage is that it can be conducted for remote candidates and evaluation of answers can be fully automated for Multiple Choice questions and other essay type questions can be evaluated manually or through automated system, depending on the nature of the questions and the requirements. Also online examinations can be conducted at any time and does not incur higher cost as traditional exam scenario as there is no paper work involved(eg: printing exam papers, prepare paper admissions etc) , there is no invigilators, also no need of arrangement of exam centers. When comparing with traditional examination scenario the cost for an online examination will be almost zero after the online examination system is established and if maintenance cost is not considered.

5.5.1: On-demand examination:

The 'On-demand Examination System' (ODES) is a Learner-centric Examination System. It allows the learners to take the examination when he/she is ready. Readiness depends on the learner and not on the institution.

In general one or two summative examinations are conducted in every year. While trying to enhance flexibility in the timing of summative assessment, an institute may came up with the innovative concept of ICT based On-demand Examination (ODE), where assessment takes place when the learner considers himself/herself ready to take an examination on one or more subject. Not only On-demand Examination provides independent of time but it also allows the learners to improve their performance till they are satisfied with the mastery level set by them individually. Thus, On-demand Examinationhas extended and enhanced the dimension of openness in the Open Education System where examination is self paced and degree of performance is learner controlled. Undoubtedly such a system provides a non-threatening evaluation system vis-a-vis the traditional fixed schedule Public Examination. On-demand Examination reduces pre examination stress.

5.5.2: Characteristics of On-demand Examination:

The Characteristics of the 'On-demand Examination' are as follows:

- On-demand Examination allows the student to take examination when he/ she is ready. Readiness depends on the Student and not on the institution.
- On-demand Examination permits the student to choose the date of his/her examination.
- On-demand Examination reduces the threat of failure in examination.
- On-demand Examination removes frustration, loss of self esteem, peer group ridicule, and depression that are generally characterized by the Term-End Examination.
- Since under On-demand Examination, information about result is immediate, success even bits is a strong motivating factor.
- Under On-demand Examination, the degree and level of performance is decided by the student who can reappear in the examination as many times as s/he wants, till satisfied.
- On-demand Examination is also helpful in containing malpractices in examinations, as it is a system where the tools for evaluation are unique for individual student. The question paper for each Student is different having comparable difficulty level.
- On Demand Examination respects the individuality and sovereigntyof the student.

5.5.3: Advantages:

The advantages of On-demand Examination can be stated as follows:

- Allows the Student to get assessed when he/ she is ready. Readiness depends on the Student and not on the institution.
- Attempts to remove the stress of appearing in examination(s), whether for all subjects or in one subject at a fixed time and schedule.
- Attempts to remove the threat of failure in examination.
- Removes frustration, loss of self esteem, peer group ridicule, depression etc.
- Knowledge of results is almost immediate and success, even in one subject, is a strong motivating factor.

- Degree and level of performance is decided by the Student who can reappear in the examination as many times as one wants, till satisfied.
- Malpractices will be reduced, as it is a system where the tools for evaluation are unique to an individual Student. Every question paper for each Student is different having comparable difficulty level.
- Respects the individuality and sovereignty of each Student.

5.5.4: Take-home Power Tests:

Take home examination is that type of examination where the students are allowed to take the question to his/her home and the students use varied degree of resources and references to answer the questions and submit the answer within a limited period of time. The "take-home exam" is a mix between homework and an open-book exam. Like normal homework given over the course of the year, it can be done at home with access to lecture notes, internet and any books or resources which might be useful.

5.5.5:Advantages of take-home examination:

The Advantages of take-home examination are as the followings:

- The time period, and the ability to access materials, may allow students to better demonstrate their knowledge, abilities and use of sources.
- If the course's learning outcomes emphasis higher order cognitive skills (argument, application, comparison, critique etc.) and the use of sources, a take-home assessment may allow for a more authentic assessment of these.
- For some programmes, take-home assessments more closely resemble the work activities where students' knowledge and skills will ultimately be used.
- Can require fewer adjustments for individual students. For instance, take-home assessments can accommodate students who would need additional time in a traditional exam, and students can use their own computer equipment with support software.
- When submissions are word-processed and electronically submitted they are more legible than hand-written scripts, and can be marked by two academics simultaneously. With student permission, past answers can be anonymised and shared as exemplars.

5.5.6: Challenges of take-home examination:

The followings are the challenges of take-home examinations:

- Students need to provide their own workspace and computer equipment.
- Adequate support should be available (both technical, and for clarification in case of factual errors in questions etc.) for the duration of the take home assessment.
- Take-home assessments carry an increased risk of unauthorised collaboration between students.

5.5.7: Open Book Examination:

An "open book examination" is one in which examinees are allowed to consult their class notes, textbooks, and other approved material while answering questions. This practice is not uncommon in law examinations, but in other subjects, it is mostly unheard of. Radical and puzzling though the idea may sound to those who are used to conventional examinations, it is ideally suited to teaching programmes that especially aim at developing the skills of critical and creative thinking.

5.5.8: Types of Open Book Examinations:

One may think of two kinds of open book examinations, say the restricted type and the unrestricted type. In the restricted type of open book examinations, students are permitted to bring into the examination room one or more specific documents approved by the course instructor. In the unrestricted type of open book examinations, students are free to bring whatever they like. In the restricted open book examination, students may be permitted to consult printed documents such as the logarthmic tables, dictionaries, or complete works of Shakespeare, but no handwritten material or printed documents which have not had prior approval. One may also need to make sure that the printed documents that students bring do not contain any scribbles on the margin. In this type of examination, the approved documents function more or less as appendices to the question paper itself. These examinations are not radically different from closed book examinations. They do not present any special problems, irrespective of the nature of the course. As I said earlier, there are no restrictions on what the students can bring in an unrestricted open book examination. They may bring any books (with or without scribbles on the margin), lecture handouts of the course instructor, or their own handwritten notes. The use of such examinations presupposes certain teaching strategies and types of questions. In particular, it demands that the course focuses on a set of intellectual skills, rather than on the information

content , and that no content based questions be asked in the examination. If the course instructor has concentrated on handing down currently available knowledge, and the question paper contains traditional content based questions like “Write an essay on the differences between British and American English”, the use of the unrestricted open book examinations would be disastrous. When used properly, it will be pointless for students taking the unrestricted open book examinations to consult any material they have brought, because the questions will be designed in such a way the answers will not be found in the textbooks, handouts or class notes. An intelligent student who has had the experience of such examinations once will not bother to bring anything for the next examination, since (s)he will know that no prepared material will be of any use. The use of these examinations then acts as symbolic gesture that makes the students realise the nature of the course and the examinations, and shocks them into a mode of studying that does not involve cramming.

5.7: Let us sum up

Traditional evaluation process is not sufficient to evaluate all kinds of dimension in education. So, different types of evaluation methods like knowledge-based evaluation, performance-based evaluation, role play, concept maps, interviews, writing samples, project exhibition, reflective journals etc have been emerged. In this unit all these evaluation methods have been defined and their advantages and disadvantages have been described. The proper use of the evaluation methods is very important. So, the use of the evaluation techniques and area of use of the methods have also been described. For self-evaluation technique, the rubrics and rating scale plays an important role without which self evaluation is not possible. When a student is given self evaluation assignment he will also be provided with self evaluation rubrics or rating scale by which the student himself can evaluate him. So, the rubrics and rating scale have been illustrated so that there may have no weakness in self evaluation. Moreover very recently emerged online examinations, on-demand examination, take home examination and open book examination have been described to make the students familiar with these systems of evaluations.

2.9: Unit End Exercises

(i) State the areas where knowledge-based evaluation is possible but performance-based evaluation is not possible.

(ii) Give an example of a self-evaluation assignment with proper rubrics and a self- evaluation question with rating scale.

5.10: References

Braden, J. (2001). The clinical assessment of deaf people's cognitive abilities. In clark,M. D.; Marschark, M., & Kretchmer, M.(Eds.). Context, cognition and deafness, Galludet University press, Washington. Pg.14-37.

Elliot, S.N., Kratochwill, T. R., & Gilbertson, A. G. (1998). The Assessment Accommodation Checklist: Who, What, Where, When, Why and Who? Teaching Exceptional Children, 31(2), 10 –14.

Eriksen, S.C. (1969). The teacher made test. Memo to the Faculty, no.35. AnnArbor: Centre for Research on learning and teaching, University of Michigan Fernandez, H. (2008). Knowledge based achievement of students with hearing impairment on different types of assessment. Unpublished Master Disseratation, University of Mumbai.

Frechtling, J.A. (1991). Performance assessment: Moonstruck or the real thing?Educational Measurement: Issues and Practices, 10(4), 23-25.

Jacob, L. C., Chase, C. N. (1992). Developing and using tests effectively: A guide for faculty. Josse-Bass Publishers, San Francisco.

Junaid, I.M., & Muhammad, D. N. (2002). Assessing nomadic children's learning achievement: what tools and which strategies? Retrieved from curriculum.pgwc.gov.za/resource_files /22153409_16.doc

Linn. R.L, Baker, E. L., & Dunbar, S. B. (1991). Complex Performance based assessment. Educational Researcher, 20(8), 15-21.

Mathew, S. (2010). Impact of Knowledge Based Evaluation on Achievement of Students with Hearing Impairment: An Experimental Study. A PhD Thesis (Unpublished), MJP Rohilkhand University.

Meyer, C.A. (1992) .What is the difference between Authentic and Performance assessment? Educational Leadership,49(8),39-40.

Mountain, A. (2005). Science assessment of deaf students: Considerations and implications of state accountability. Measurements. MSSE Masters Project. Submitted to the National Technical Institute for the Deaf, Rochester Institute of Technology, New York.

Musselman, C.R., Lindsey. P. H., & Wilson A. K. (1988). An evaluation of recent trends in preschool programming for hearing impaired children. Journal of Speech and Hearing Disorders, 53, 71-88.

Nair, P. (2005). A study of the effectiveness of individualized instructional material on mastery of mathematical concepts related to time in children with hearing impairment. Unpublished Master Dissertation, University of Mumbai.

Tannenbaum, J.E. (1996). Practical Ideas on Alternative Assessment for ESL Students. ERIC Clearinghouse on Languages and Linguistics Washington DC, ERIC Identifier ED395500, 1-6.

Bartels, B. H. (1995). Promoting mathematics connections with concept mapping. Mathematics Teaching in the Middle School, 1(7), 542-549.

Buzan, T. & Buzan, B. (1993). The mind map book: how to use radiant thinking to maximize your brain's untapped potential. New York: Plume.

Cronin, P. J., Dekker, J. & Dunn, J. G. (1982). A procedure for using and evaluating concept maps. Research in Science Education, 12(1), 17-24.

মানুষের জ্ঞান ও ভাবকে বইয়ের মধ্যে সঞ্চিত করিবার যে একটা প্রচুর সুবিধা আছে, সে কথা কেহই অস্বীকার করিতে পারে না। কিন্তু সেই সুবিধার দ্বারা মনের স্বাভাবিক শক্তিকে একেবারে আচ্ছন্ন করিয়া ফেলিলে বুদ্ধিকে বাবু করিয়া তোলা হয়।

— রবীন্দ্রনাথ ঠাকুর

ভারতের একটা mission আছে, একটা গৌরবময় ভবিষ্যৎ আছে, সেই ভবিষ্যৎ ভারতের উত্তরাধিকারী আমরাই। নূতন ভারতের মুক্তির ইতিহাস আমরাই রচনা করছি এবং করব। এই বিশ্বাস আছে বলেই আমরা সব দুঃখ কষ্ট সহ্য করতে পারি, অন্ধকারময় বর্তমানকে অগ্রাহ্য করতে পারি, বাস্তবের নিষ্ঠুর সত্যগুলি আদর্শের কঠিন আঘাতে ধূলিসাৎ করতে পারি।

— সুভাষচন্দ্র বসু

Any system of education which ignores Indian conditions, requirements, history and sociology is too unscientific to commend itself to any rational support.

— Subhas Chandra Bose

Published by : Netaji Subhas Open University, DD-26, Sector-I, Salt Lake, Kolkata-700 064 &
Printed at : The Saraswati Printing Works, 2, Guru Prosad Chowdhury Lane, Kolkata 700 006