

UG, SEMESTER-IV
Name of the Paper: Evaluation in Education
Course Code: EDCHC-9
Unit-I: Measurement and Evaluation in Education

1. Measurement:

1.1 Concept of Measurement

Generally, to measure and show the weight, length and volume of an object in definite units is called measurement; for example, to show the weight of a person in kilograms, length of cloth in metres and volume of milk in litres. But the field of measurement is very wide. It includes to define any characteristic of any object or person or activity in words, symbols or units. As far as explaining the qualities of objects, persons and activities is concerned, it has been in vogue from very ancient times, of course, without any definite base of measurement. In the present times, the bases of most of the qualities of objects, persons and activities have been defined; their standards and units have been specified; measuring tools and methods have been devised and methods to demonstrate the results of measurement in brief have been decided. Now, a characteristic of an object, person or activity is described in definite words, symbols and units in brief.

Measurement of any kind is a matter of determining how much or how little, how great or how small, how much more than or how much less than. Measurement involves the process of quantification. Quantification indicates to what extent a particular attribute is present in a particular object.

1.2 Definitions of Measurement:

1. According to **R.N. Patel**: *Measurement is an act or process that involves the assignment of numerical values to whatever is being tested. So it involves the quantity of something.*
2. According to **James M. Bradfield**: *Measurement is the process of assigning symbols to the dimension of phenomenon in order to characterise the status of phenomenon as precisely as possible.*
3. According to **J.P. Guilford**: *Measurement as the 'assignment of numerals to objects or events according to certain rules.*
4. According to **Norman E. Gronlund**: *Measurement results are some score or numerical*

value and quantitative descriptions of the pupils.

5. The **Encyclopedia of Educational Research** explains measurement in more refined terms; to measure means *'to observe or determine the magnitude of a variant'*.

Hence, measurement may be defined as, 'the assignment of one of a set of numbers to each of a set of persons or objects according to certain established rules'.

1.3 Nature of Measurement:

- i. It should be quantitative in nature.
- ii. It must be precise and accurate (instrument).
- iii. It must be reliable.
- iv. It must be valid.
- v. It must be objective in nature

1.4 Purposes of Measurement:

- i. Measure pupils' achievement and motivate pupils'/ student/s learning.
- ii. Pupils have the right to know the progress they are making whether they have attained the objectives of the subject matter or not, thus results must be made known to them.
- iii. It can also encourage pupils to study more.
- iv. They will be motivated to participate actively in class and exert all efforts just to make certain that they pass.
- v. They will know the quality and amount of work they have to strive for.

1.5 Need for Measurement

The needs of measurement are as follows:-

- i. For measure the ability of students, finding out their interest sand aptitude at the time of admission, and admit than on its basis.
- ii. For measure their intelligence and personality after admission and accordingly divide them into specific classes, and to assist in their personality development.
- iii. For find out from time to time the effect of teaching on the students (educational achievements or change of behaviour), and to guide the students on its basis and to inspire them to learn.
- iv. For measure and evaluate the educational achievements of students from time to time and to provide them feedback.

- v. For find out the hindrances in the educational progress of the students and remedy them.

1.6 Factors of Measurement

The above definition of measurement shows that there are four factors of measurement :

- i. The object, person or activity any of which characteristic has to be measured.
- ii. The characteristic of that object, person or activity which has to be measured.
- iii. The tools and devices of measuring such characteristic.
- iv. The person who measures it.

1.7 Types of Measurement

i. Qualitative Measurement

Perceiving the characteristics of an object, person or activity in the form of a quality is called qualitative measurement; for example, describing a student as very intelligent, or dull is qualitative measurement.

ii. Quantitative Measurement

Measuring the characteristics of an object, person or activity in the form of quantity is called quantitative measurement; for example, to measure the I.Q (Intelligence Quotient) of a student as 140, 120 or 110 is quantitative measurement.

1.8 Difference between Qualitative and Quantitative Measurement

Qualitative measurement is different from quantitative measurement in the following ways :

- i. The bases of qualitative measurement are often norms; and those of quantitative measurement are units.
- ii. The norms of qualitative measurement are generally not universal, while the units of quantitative measurement are universal.
- iii. There is never a situation of zero (0) in qualitative measurement; for example, the intelligence of a child can never be zero. On the contrary, the basis of quantitative measurement is zero under all circumstances; for example, when we say that the weight of a child is 40 kg., it means that his weight is more than zero (0) by 40 kg. The most suitable example of this is temperature which may be both more than zero (0) and less than zero (0).
- iv. Qualitative measurement has no mathematical relationship; for example, the proficiency in mathematics of a child securing 60 marks is not necessarily the double than that of a child securing 30 marks. On the contrary, quantitative measurement has

mathematical relationship; for example, the weight of a child with 60 kg. is double than that of a child with a weight of 30 kg.

1.9 Concept of Scales of Measurement

Any test can be useful only when it is reliable, and it should be able to measure only that attribute or characteristic for which it has been constructed. The tools for measurement have been needed from ancient times, and we need them in our daily life.

The basis of educational measurement is data. Whatever the type of measurement-physical, social, economic or psychological, it is necessary to gather data. From the viewpoint of convenience, we place the available data into four levels. These four levels are arranged in a definite order.

The lower level can be easily measured, but the measurement done by it will be under some doubt. On the contrary, measurement in the higher level is more complex, but the inferences drawn from it will be more accurate. Thus, accuracy of measurement depends on its level.

Generally, individuals, objects, events, observations and characteristics are given a quantitative form under the measurement process. Measurement Scales are used to categorize or quantity variables. In essence, each scale has a single objective, and its rules, theory, characteristics, limitations and statistical techniques are different from other levels fully.

Measurement has four chief levels and on the basis of these levels Scales of Measurement has been classified into the following four types:

- i. Nominal scale
- ii. Ordinal scale
- iii. Interval scale, and
- iv. Ratio scale.

1.10 Properties of Measurement Scales

Each scale of measurement satisfies one or more of the following properties of measurement.

- i. **Identity:** Each value on the measurement scale has a unique meaning.
- ii. **Magnitude:** Values on the measurement scale have an ordered relationship to one another. That is, some values are larger and some are smaller.
- iii. **Equal intervals:** Scale units along the scale are equal to one another. This means, for example, that the difference between 1 and 2 would be equal to the difference between 19 and 20.

- iv. **Absolute zero:** The scale has a true zero point, below which no values exist.

Values assigned to variables represent a descriptive category, but have no inherent numerical value with respect to magnitude. Gender is an example of a variable that is measured on a nominal scale. Individuals may be classified as “male” or “female”, but neither value represents more or less “gender” than the other. Religion and political affiliation are other examples of variables that are normally measured on a nominal scale.

i. **Nominal Scale**

This is the lowest level of measurement. Some people call it by the name of classification level too. Under this scale, the measured objects or events are classified into separate groups on the basis of their certain attributes, and this group is given a separate name, number or code for its easy identification. The chief feature of this group is that all elements or individuals will be similar to each other within the group but they will be entirely different when compared to those of another group. This feature of the group is called internal homogeneity. For example, the cricket teams of Sri Lanka and Australia will be given different colour dresses in order easy identification and their dresses will be marked with the letter S and A respectively. In the same way, women and men, fair and dark, rural and urban people will be kept under separate groups in order to distinguish the difference. In the same manner, allotting PIN codes for post distribution, dividing a metropolitan city into zones, such as New Delhi 110001, 110009, 110065 or 10081 etc., the railway division being allotted a different logo, the banks being given separate signs, as Bank of India-3, the New Bank of India-7, Canara Bank-7, Syndicate Bank-5 etc. Different types of fruits can be given codes, or the football players are allotted numbers etc. All these types of classifications are used at this level of measurement. This level is not important from the viewpoint of research, because the only statistical operation or technique involved is counting or calculation.

ii. **Ordinal Scale**

In the arrangement of scales, the ordinal scale is put at the second place from down below. In this scale, objects, individuals, events, characteristics or responses are arranged in hierarchical order in ascending or descending order depending on the basis of certain attributes. After that, they are given ranks. Giving first, second or third position or rank to students on the basis of their scores, giving preference in employment to candidates on the basis of eligibility and experience, awarding trophy to players on the basis of their performance, selecting Miss World or Miss Universe on the basis of beauty, selecting the best

industrialist, selecting professors for the college proctorial board and arranging them in hierarchical order in view of their administrative accomplishment, arranging fruits on the basis of their taste and flavour, etc. are some of the illustrations of this scale. In this scale, we generally make use of two methods for arranging objects : linear method and pair comparison method.

The first method, the linear method, is quite simple. In this, objects are arranged as per their rank, such as the sequence of Indian cricket players can be arranged in a sequence on the basis of their performance in a series : Sachin Tendulkar, Gautam Gambhir, Rahul Dravid, Virendra Sahwag, Yuvraj Singh, M.S. Dhoni, Virat Kohli, Praveen Kumar, Harbhajan Singh, Srisant, Zaheer Khan. In the second method, the pair comparison method, all members of the group are compared in pairs.

Though this scale is used more than the nominal scale, yet from the standpoint of research, this is not accepted as very valid and reliable. Under this scale, though the median, percentiles, correlation multiple (r) etc. can be used to distinguish the difference between two individuals, yet it does not clarify the actual difference between the two. This is the chief limitation of this scale.

iii. **Interval Scale**

This is the third level of measurement. This scale endeavours to do away with the limitations of the above two scales. Under this scale, we display the difference between any two classes, individuals or objects by the medium of scores. The distance between two differences is equal.

Lack of exact zero point is a shortcoming of this scale, due to which the measurement done by this scale is relative measurement, and not absolute; that is, if a student obtains zero marks in this scale, then it should not be concluded that the student is fully ignorant of the given subject.

Some examples of this scale are thermometer, hour, minute, week month, year etc. In a thermometer, the normal temperature of an individual is considered at 98.4°F, but if due to certain reasons, this temperature is read at 97°F, then on the one hand, this shows that that person has no fever, but it should not be concluded that the individual's body has no heat or temperature at all. A thermometer is the most appropriate example of this scale. A thermometer indicates from 98°F to 108°F. It has the same distance between 98°F and 99°F, so it is between 107°F and 108°F. Under this scale, several statistical calculations can be used, such as mean, percentiles, standard deviation etc.

iv. **Ratio Scale**

This is the highest level of measurement. This scale comprises of all features of all other scales. The presence of exact or true zero point is the chief feature of this scale. This zero point is not arbitrary point, rather it is related with the zero amount of certain attribute or feature. In physical measurement, there is always an absolute zero point, such as meter, *km*, gram, liter, millimetre etc. Measurement of height, length, weight or distance is started from zero point. In ratio scale, the true zero point is considered the initial point of the scale. So, we can find out the ratio between the distance of any two places, and on its basis, we can say with certainty how distant is one place from another. Thus, if Rekha, Pinki or Puja are awarded 10, 20 and 40 marks on the basis of certain attribute, then we will say as per this scale in what measure this attribute exists in Rekha, and it exists in Pinki in the double measure and in Puja it is four times. It means to say that each unit in the scale explains different amounts of the attribute, and there is possibility of applying all basic operations in this scale.

2. Evaluation

2.1 Concept of Evaluation

We are aware that measurement is used to express a trait of an object, person or activity in standard words, symbols or units. In evaluation, these results are analysed and this analysis is done on the basis of certain social, cultural or scientific standards (Norms) and by this analysis, the relative condition of the trait of the object, person or activity is clarified.

Evaluation is an act or process that assigns 'value' to a measure. When we are evaluating, we are making a judgment as to the suitability, desirability or value of a thing. In the teaching–learning situation, evaluation is a continuous process and is concerned with more than just the formal academic achievement of students. Evaluation refers to the assessment of a student's progress towards stated objectives, the efficiency of the teaching and the effectiveness of the curriculum. Evaluation is a broad concept dealing not just with the classroom examination system; but also evaluating the cognitive, affective and psychomotor domain of students. The success and failure of teaching depends upon teaching strategies, tactics and aids. Thus, the evaluation approach improves the instructional procedure. Glaser's basic model of teaching refers to this step as a 'feedback function'.

Evaluation takes place with the help of tests and measurements. In a classroom situation, teachers first use classroom tests to evaluate students according to their different traits. After getting the answer papers, teachers provide some numerals to the answer papers, this step is known as measurement. So measurement deals with only the quantitative description. After the measurement step, the teachers arrange the students as first, second, third etc., according to their achievements. This step is evaluation. So evaluation is a philosophical and subjective concept. It includes both quantitative and qualitative descriptions, and value judgment.

Therefore,

Evaluation = Quantitative Description (Measurement) and/or Qualitative Description (Non-measurement) + Value Judgments.

2.2 Definition of Evaluation:

1. According to **James M. Bradfield**: *Evaluation is the assignment of symbols to phenomenon in order to characterise the worth or value of the phenomenon usually with reference to some social, cultural and scientific standards.*
2. According to **Wright Stone**: *Evaluation is a relatively new technical term introduced*

to designate a more comprehensive concept of measurement than is implied in conventional test and examination.

3. According to **Hanna**: Evaluation as *'the process of gathering and interpreting evidence on change in the behaviour of all students as they progress through school.*
4. In the simplest words: *Evaluation is the process in which the analysis of the result obtained from measurement of a trait of an object, person or activity is done on the basis of certain social, cultural or scientific standards (Norms), and the relative position of the object, person or activity is determined as relative to that trait.*

Therefore we can say that

- Evaluation adds the ingredient of value judgement to assessment.
- It is concerned with the application of its findings and implies some judgement of the effectiveness, social utility or desirability of a product, process or progress in terms of carefully defined and agreed upon objectives or values.
- Evaluation often includes recommendations for constructive action. Thus, evaluation is a qualitative measure of the prevailing situation.
- It calls for evidence of effectiveness, suitability, or goodness of the programme.

2.3 Characteristics of Evaluation

The characteristics of evaluation are as follows:

- It is a systematic process.
- It measures the effectiveness of learning that experiences provide.
- It measures how far the instructional objectives have been achieved.
- It uses certain tools like tests, observation, interview etc.
- It is a continuous process.
- It is a subjective judgment.
- It is philosophical in nature.
- It includes quantitative description, qualitative description and value judgment.
- It gets data from measurement.
- It not only determines the magnitude, but also adds meaning to measurement.
- It involves values and purposes.

2.4 Factors of Evaluation

Two processes have to be undertaken in evaluation — first, the measurement and the second, analysis of the information or data obtained from measurement. And we are aware that there are the following four factors of measurement:

- i. The object, person or activity any of which characteristics has to be measured.
- ii. The characteristic of the object, person or process which has to be measured.
- iii. The tools and devices of measuring such characteristic.
- iv. And the person who measures it.

There are two factors of analysis of the data or result received from the measurement, and we can assign them serial numbers v and vi respectively, which are :

- v. Those standards (Norms) on the basis of which the results of measurement are analysed.
- vi. Those devices (logical, mathematical or statistical) with the use of which such analysis is carried out.

2.5 Need of Evaluation

The needs of the Evaluation are as follows:-

- i. For test the educational importance of the activities of educational administrators, other personnel and guardians from time to time, and to suggest for improvement.
- ii. For analyse the educational objectives, to test their utility, and to suggest for timely change.
- iii. For find out the effect of the curriculum at different levels in the achievement of educational objectives, to give suggestions for improvement and to enlighten for research.
- iv. For study the effect of teaching methods being used from time to time, to find out useful/ useless methods, to suggest for improvement and to enlighten the field for research.
- v. For find out the utility of textbooks in the achievement of educational objectives, to give suggestions for improvement and to guide for research.
- vi. For study the effect of the use of various means in teaching as to their place and kind of use, and to suggest measures for improvement.

2.6 Purposes of Evaluation:

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

- i. to determine the relative effectiveness of the programme in terms of students' behavioural output;
- ii. to make reliable decisions about educational planning;
- iii. to ascertain the worth of time, energy and resources invested in a programme
- iv. to identify students' growth or lack of growth in acquiring desirable knowledge, skills, attitudes and societal values;
- v. To help teachers determine the effectiveness of their teaching techniques and learning materials;
- vi. To help motivate students to want to learn more as they discover their progress or lack of progress in given tasks;
- vii. To encourage students to develop a sense of discipline and systematic study habits.
- viii. to provide educational administrators with adequate information about teachers' effectiveness and school need;
- ix. To acquaint parents or guardians with their children's performances;
- x. To identify problems that might hinder or prevent the achievement of set goals;
- xi. To predict the general trend in the development of the teaching-learning process;
- xii. To ensure an economical and efficient management of scarce resources;
- xiii. To provide an objective basis for determining the promotion of students from one class to another as well as the award of certificates;
- xiv. To provide a just basis for determining at what level of education the possessor of a certificate should enter a career.

2.7 Types of Evaluation:

Evaluation is a process of judgment of value or worth of a process or product, which may be the achievement, aptitude, interest, skill or other aspects of student's personality or the method of teaching and learning. There are many types of evaluation. These include:

1. Formative Evaluation
2. Summative Evaluation
3. Placement Evaluation
4. Diagnostic Evaluation

1. Formative Evaluation

The evaluation which is done during the teaching–learning process to assess the ongoing termed formation of knowledge and understanding of students is called as formative evaluation.

The formative evaluation is a monitoring type of evaluation which is used to monitor the progress of students during the class, course or session. After formative evaluation, feedback is given to students, so that they can proceed accordingly. The formative evaluation is aimed at improving the quality of teaching-learning process.

Formative evaluation is an evaluation which is used for learning. The main intention of a formative evaluation is to present a measure to both the students and instructor and find them where they stay in their course of study. With this measure, the instructor would be able to adjust and make a few variations so that the studies aren't affected. With the help of formative evaluations, more interest is presented by the instructor and students and their way of learning.

Therefore, we can explain Formative Evaluation in the following ways:

- i. It is used to monitor the learning process of students during the period of instruction.
- ii. It provides continuous feedback to both teacher and student concerning learning successes and failure while instruction is in process.
- iii. Feedback to students provides reinforcement of successful learning and identifies the specific learning errors that need correction.
- iv. Feedback to teacher provides information for modifying instruction and for prescribing individual and group remedial work.
- v. It aims at improvement of instruction.

Characteristics Formative Evaluation:

1. It is an integral part of learning process.
2. It occurs frequently during the course of instruction.
3. Its results are made immediately known to the learners.
4. It may sometimes take teacher's observation only.
5. It reinforces learning of the students.

Advantages of Formative Evaluation:

- i. **Develops Knowledge:** The main intention of formative evaluation is that it helps in the development of knowledge and skills for the learners. With this category of

- evaluation, the instructors, leads or teachers are able to identify the needs of the individuals and direct them towards their objectives or educational goals.
- ii. **Plans for the Future:** Formative evaluation is beneficial as it plans for the future where any methods related to teaching or other career tasks can be altered. Weakness is diagnosed at an early stage and remediation is made.
 - iii. **Achieves Successful Outcomes:** A formative evaluation covers up a wide range of diagnostics that are required by the students or individuals. The feedback is the main parameter which enables students to reflect what they are learning and know the reason for the same. Formative evaluation assists individuals in enhancing their performance and producing successful outcomes.
 - iv. **Continuous Improvement:** The other main beneficial aspect of a formative evaluation is that it is an ongoing process. By this way, the feedback is increased and issues are detected at an early stage. When academics are considered, conceptual errors are identified before they start by working with their term papers. Once they initiate with term paper they are guided and validated by their instructors with each step.
 - v. **Provides Rich Picture:** A rich picture of the source or program is learned with the help of formative evaluation as it unfolds. With this type of evaluation, doors are opened for prospective learning for present program as well as future programs that are planned. The success and failure of the project can be determined with the help of formative evaluation and the reason for the same is also identified.
 - vi. **Provides Quick Feedback:** The major advantage is that with the help of formative evaluation, quick feedback is offered based on conflict management and resolution work capacity. For example, when a project is in process, the formative evaluation is one that offers complete feedback about the status of the project.
 - vii. **Documentation:** The next key beneficial factor about formative evaluation is that documentation is offered with this type of evaluation as to the working status of resolution and conflict management. Also, it provides with the techniques that are employed with the work issues that are identified, and impacts that are achieved in the early and middle stage of the process. This documentation is beneficial for a number of factors.
 - viii. **Setting Goals and Plans:** With the help of formative evaluation, planning is made and also revisions for any recommendation for plans are allowed. With this type of

evaluation program implementation and program, plans are compared. There is also enhanced opportunity for reconsidering program plans and goals.

- ix. **Used in Complex Settings:** Complex intervention in complex settings is quite difficult to be implemented. Another tough task is the managers, researchers, and others to possess a complete understanding about what must be implemented, the best strategy to be followed, elements those hinders or facilitate the process and the reason for any strategy to work or not work in an implementation process. All these queries are solved with the help of formative evaluation.
- x. **Complex Interventions are Refined:** Formative evaluations are ones that are beneficial for a number of interventions but specifically they are useful for refining wide-range and composite interventions. For example, primary care practices are ones that always implement numerous components in a concurrent manner. Hence formative evaluations are employed in such scenarios.

Disadvantages of Formative Evaluation:

- i. **Time-Consuming and Requires Resources:** Formative evaluation is considered to be a time-consuming process if they are followed on a monthly, weekly or daily basis. These evaluations are time and resource-intensive, this is because they are in need of frequent gathering of data, analysis, reporting as well as refinement of new implementation and how effective it should be.
- ii. **Tiring Process:** Planning and exercising can be a tiring process and few recommendations cannot be implemented at all times. Hence this disadvantage leads many individuals to avoid the practice.
- iii. **Trained and Qualified Professionals:** In order to process with the formative evaluation well qualified and trained individuals are required so that formative evaluation is carried over successfully and ended.
- iv. **Develops Challenges:** There are a number of methodological challenges with formative evaluation at times of rapid refinement process which takes place when trying to evaluate the impact of the intervention. Also, the measuring of outcomes is made possible only when the variant used for intervention is implemented. Another disadvantage is the difficulty in determining the change in the intervention at certain outcomes.

- v. **Funding Limitations:** The intensity of formative evaluations is limited by funding aspects. If funding proposals are complete and perfect then formative evaluations can be offered with mid-course actions and corrections.
- vi. **Results must be related to Implementation:** When the formative evaluation is considered, results must be based on the context of the program implementation rather than a complete program assessment result.
- vii. **Evaluators must preserve Objectivity:** Intervention is shaped with ongoing feedback and where objectivity rises for evaluators. There should be a proper standard strategy format so that required distance is maintained for objectivity and at the same time detailed and formative feedback is provided.

2. Summative Evaluation:

As the name indicates, summative evaluation is done at the end of a course semester, or a class or topic. It is meant to evaluate the quality of the final product and to find out the extent to which the instructional objectives have been achieved.

No remedial teaching is given after summative evaluation. The process of certification is done on the basis of the results of summative evaluation. Results of this evaluation reflect the effectiveness of the curriculum transaction process. Important examples of summative evaluations are annual exams, semester end exams and terminal exams. This is much more concerned with judging about the final product. The important tools of summative evaluation are achievement test, rating scales, project evaluation by experts, interviews, viva-voce examination, etc.

Characteristics of Summative Evaluation:

The characteristic features of summative evaluation are as follows:

- i. This evaluation is conducted at the end of a topic, class, chapter, unit or course of instruction.
- ii. Evaluation results give the final progress of the students in a class, in a topic, in a unit, in a course or in any educational programme.
- iii. Summative evaluation results are used for preparing merit list, finalizing position, taking decisions of pass/fail/promotion and awarding degrees or diplomas.
- iv. It is terminal in nature as it comes at the end of the course of instruction.
- v. It is judgmental in character in the sense that it judges the achievement of pupils.
- vi. It views evaluation “as a product’ because its chief concern is to point out the levels of

attainment.

vii. It can not based on teacher's observation only.

Advantages of Summative Evaluation:

i. Helps to know if students have understood:

The summative evaluation follows certain strategies for evaluation by means of assignments, tests, projects and more. By these ways, the teacher can make out if the students have learned and understood the subject.

ii. Helps to determine achievement:

The usual procedure is that summative evaluations are done at the end of any instructional period. Thus, summative evaluation is considered to be evaluative in nature rather than being mentioned as diagnostic.

iii. Helps to make academic records:

The results of summative evaluations are ones that are recorded as scores or grades into the students' academic records. They can be in the format of test scores, letter grades or report cards which can be used in the college admission process. Many schools, districts, and courses consider summative evaluation as a major parameter in the grading system.

iv. Provides opportunity:

The presence of summative evaluation is a motivator as it assists the individuals and offers them an opportunity to develop a learning environment. This is an evaluation meant for learning and is based on the outcome.

v. Boosts individuals:

The outcome of the summative evaluation is considered as a boosting factor when it's positive. With this type of evaluation, confidence is boosted and also they act as a springboard to certain behavior change at a workplace or institution.

vi. Weak areas can be identified:

With the help of summative evaluation results, trainers and instructors can find out weak areas where the results are steadily low. By this way, alternative methods can be utilized in order to improve the results. New training can be followed for future events focusing on success.

vii. Training success can be measured:

This type of evaluation helps in determining the success of methods used for training programs. They are equated with others and evaluated.

viii. Tools for evaluation:

Summative evaluations are considered as tools, as they have the capability to evaluate the usefulness of any program, they work towards the improvement of the school or institution; they help in aligning curriculum and also helping students to get placed in the appropriate programs.

ix. Instructional design:

The summative design is utilized as an evaluation technique in the course of instructional design. Depending on the intervention efficiency summative evaluation offers beneficial information. The value or worth of the intervention is judged by means of summative evaluation during the conclusion.

x. Measures educator performance:

With the help of summative evaluation, the supervisor can measure the educational faculty or the instructor. The level of performance of all the teachers, instructors can be measured by means of this evaluation. The school needs for teacher's accountability is met by means of summative evaluation.

xi. Gains a better understanding:

When the summative evaluation is considered at organizational levels, they take place at project implementation times and most often by the end of the project. They can also be referred to as ex-post evaluation. This type of evaluation is linked with quantitative methods of data collection and more objective ones. They are associated with the evaluation drivers of accountability. Hence to gain a better understanding of the project, summative evaluation utilizes both quantitative and qualitative methods. This also helps individuals understand why and what has occurred.

xii. Benefits for projects:

By following summative evaluation in organizations, the individuals can find out if their project has reached their goals and objectives planned for. The evaluation also helps to quantify changes in resource and also make use of attributable to the project. By this way, the impact of the project can be identified.

Disadvantages of Summative Evaluation:

i. Demotivates individuals:

It is mentioned that summative evaluation motivates individuals so that they put in more effort for their studies. When student motivation and its impact is reviewed, the

evidence for policy and practice information and a coordinating center at the University of London found the relation that sustained between self-esteem and standardized tests.

It was found that there prevailed lower self-esteem by students who performed in a poor manner. This, in turn, led them to put in less effort towards their studies and for their future academic progress.

ii. **Rectification is late:**

The main disadvantages of summative evaluation are that since it focuses on output at the end, in case there are hindrances or difficulties, the learning process at the end can be tough. There is no chance to recover as the results are at the end. This is not an accurate reflection when learning is considered.

iii. **Disruptive:**

Since it is being a single test at the end of the complete session of academics, it makes almost all individuals anxious and disruptive. They face the summative evaluation with nervousness and fear.

iv. **No remedy:**

Nothing is done to identify hindrances or challenges well in advance in a summative evaluation. Instructional issues are not identified until they blow up and become critical.

v. **Not accurate reflection of learning:**

When a summative evaluation is considered, it focuses mainly on the performance of the teachers as they teach to the test. A simple example is that when any state-level test focuses mainly on analogies and anagrams, students are interested in focusing and working on those exercises for hours. By this way, they divert from reading and writing or their vocabulary development.

Overall it is concluded that summative evaluation isn't perfect because even an outstanding student may face questions that may bring them down. The main reason for that would be that a student gets nervous or tensed due to pressure for exams. Hence, summative evaluation is not considered as the best reflection for learning.

vi. **Negative effect for students:**

Repeated practice test for low-achieving students lowers their self-confidence and self-esteem. The summative evaluation results have a negative effect on low achievers when they are more pronounced for students than for schools or authorities. Secondary age low-achievers may perform in a worse manner as they are failing in the course of time. It is also considered as a limiting process for more able individuals.

Anxiety is another reason which is caused in a big bang test especially amongst girls and leads to expanding the gap between higher and low achieving individuals. The extrinsic motivation which means that responding to some kind of reward is promoted in summative evaluation rather than intrinsic motivation which means that working for something they are interested and desire to work for.

vii. Issues with teaching and curriculum:

The instructors and teachers work towards the test and deviate themselves from curriculum and content. There can be chances for distortion in terms of teaching techniques. The other disadvantage is that summative evaluation questions may not be framed in a manner similar to formative evaluation.

The instructors and teachers may themselves have to dedicate more time for summative evaluation which may not actually enhance an individual's knowledge. With all this, teachers also adopt some didactic teaching style which may not be perfect and comfortable for many students.

viii. Reliability and validity:

The evaluation must be developed in a manner that covers and reflects that complete content and how the material has been taught.

Tasks should also possess better consistency which is unavailable and the way they are marked internally and externally across various versions.

Reliability and validity errors are few factors that must be focused on with summative evaluation as they measure students' performance.

ix. Biasing:

Summative evaluations are considered to possess limited means of expression especially that standardized test which has a number of multiple-choice questions for automatic grading. This has the main disadvantage for many students which can be non-native speakers with less knowledge of the language, there are students who face cultural barriers and may face difficulties in understanding the questions, and there may be students with physical or learning disabilities and pupils who give a poor performance due to pressure in the testing conditions.

x. Authenticity:

There are more chances that summative evaluation measures the wrong aspects. Harvard University's graduate school of education professor David Rose and the principal architect of universal design for learning suggest that the evaluation of students does not offer the right result or accurate information.

Compare between Formative and Summative Evaluation

Sl No	Formative Evaluation	Summative Evaluation
1	Formative evaluation is an ongoing process, so it is performed during the process.	Whereas summative evaluation is done only after the completion of the process.
2	With the help of formative evaluation, you will be able to help the student if he needs help during the process or any assistance.	Whereas with summative evaluation we can understand how the student is performing and assigning the grades
3	The formative evaluation process helps in improving a student's learning capacity or skill.	Through summative evaluation, we can analyze the students' achievements.
4	Formative evaluation deals with small areas of content as it an ongoing process.	But summative evaluation deals with the whole project as it is performed after the completion.
5	The formative evaluation considers the assessment as a process.	And summative evaluation is considered more of a product.
6	Conducted regularly during the class, course or session.	Conducted at the end of the course or session or programme.
7	Determines the level of achievement in a small task learned in a short duration.	Determines the level of achievement in a major task learned in a longer duration.
8	Gives limited generalization.	Gives broad generalizations
9	Limited content area and ability are covered.	Large content areas and abilities are covered.

3. Relationship between Measurement and Evaluation

Measurement and evaluation are independent concepts. Evaluation is a process that uses measurements. In the evaluation process, information is interpreted according to established standards so that decisions can be made. Clearly, the success of evaluation depends on the quality of the data collected. If test results are not consistent (or reliable) and truthful (or valid), accurate evaluation is impossible. The measurement process is the first step in evaluation; an improved measurement leads to accurate evaluation. People are different. They vary in body size, shape, speed, strength and many other respects. Measurement determines the degree to which an individual possesses a defined characteristic.

It involves first defining the characteristic to be measured, and then selecting the instrument with which measured.

Evaluation is an act or process that assigns 'value' to a measure. When we are evaluating, we are making a judgment as to the suitability, desirability or value of a thing. In the teaching–learning situation, evaluation is a continuous process and is concerned with more than just the formal academic achievement of students. Evaluation refers to the assessment of a student's progress towards stated objectives, the efficiency of the teaching and the effectiveness of the curriculum. Evaluation is a broad concept dealing not just with the classroom examination system; but also evaluating the cognitive, affective and psychomotor domain of students. The success and failure of teaching depends upon teaching strategies, tactics and aids. Thus, the evaluation approach improves the instructional procedure. Glaser's basic model of teaching refers to this step as a 'feedback function'.

J.M. Bradfield defines evaluation as 'the assignment of symbols to phenomenon in order to characterize the worth or value of the phenomenon usually with reference to some social, cultural and scientific standards'. Wright Stone stated, 'evaluation is a relatively new technical term introduced to designate a more comprehensive concept of measurement than is implied in conventional test and examination'. Hanna defined evaluation as 'the process of gathering and interpreting evidence on change in the behaviour of all students as they progress through school'.

Evaluation takes place with the help of tests and measurements. In a classroom situation, teachers first use classroom tests to evaluate students according to their different traits. After getting the answer papers, teachers provide some numerals to the answer papers, this step is known as measurement. So measurement deals with only the quantitative description. After the measurement step, the teachers arrange the students as first, second, third etc., according to their achievements. This step is evaluation. So evaluation is a philosophical and subjective concept. It includes both quantitative and qualitative descriptions, and value judgment.

Therefore, Evaluation = Quantitative Description (Measurement) and/or Qualitative Description (Non-measurement) + Value Judgments.

Generally the term 'measurement' is confused with 'Evaluation', while they are quite apart from each other. Measurement is a quantitative form of an object, while evaluation presents its qualitative together with its measurement. In brief, measurement is numerical and evaluation quantitative.

Measurement tells us how much of an object, while evaluation tells us how good it is. Besides, evaluation pays attention to the fact of realization of objectives, while by

measurement is meant only the number of specific objectives that have been realized. Measurement is incomplete without evaluation.

Differences between Measurement and Evaluation

SI No	Measurement	Evaluation
1	Measurement does not express any clear assumption about a student.	Clear assumption about a student can be formed on the basis of evaluation.
2	Measurement does not require much energy and time	Evaluation requires more energy and time.
3	The scope of measurement is limited, only some dimensions of personality can be tested under measurement.	The scope of evaluation is wide, in it, the entire personality of a student is tested.
4	Measurement is content-oriented.	Evaluation is objective-oriented.
5	Measurement is a means, and not an end in itself.	Evaluation is an end in itself.
6	The purpose of measurement is to gather evidences.	Evaluation is to deduce inferences from evidences, that is, its work is appraisalment of evidences.
7	Measurement may not be an essential part of education.	Evaluation is the integrated or necessary part of education.
8	Measurement answers the question 'how much', such that Sunanda has scored 56 marks in mathematics. This is measurement.	Evaluation answers the question 'what value'. Sunanda has scored 50% marks in mathematics and passed second division in the class, this is evaluation.
9	Prediction cannot be made meaningfully on the basis of measurement.	Evaluation can predict meaningfully.
10	Measurement acquaints with a situation. This is isolated from the entire environment.	Evaluation acquaints about the entire situation.
11	Measurement indicates those observations which are displayed numerically.	Evaluation comprises of both quantitative and qualitative observations.
12	Measurement can be conducted at any time.	Evaluation is a continuous process.