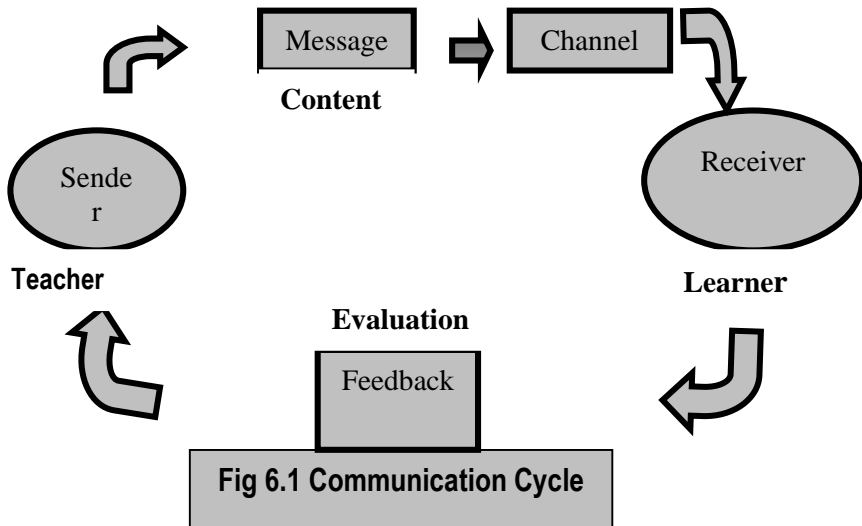


7

EVALUATION OF INSTRUCTION

Olugbenga. G. Akindoju

Three terms; *test*, *measurement*, and *evaluation* are sometimes used interchangeably, but could be differentiated in terms of scope and procedure. The term test being the narrowest of the three connotes the presentation of a standard set of questions to be answered. The answers provided by the person gives a numerical value (a measure) of a characteristic of that person. Let us consider the instructional process as a communications process, which cannot complete until the source receives a feedback from the receiver of the message. (Fig 7.1)



Measurement is the handmaiden of instruction. Without measurement, there cannot be evaluation. Without evaluation, there cannot be feedback. Without feedback, there cannot be good knowledge of results of results. Without knowledge of results, there cannot be systematic improvement in learning

Measurement, which is broader than test in scope, involves using others means of collecting quantitative information rather than test such as ***observation, rating scales, inventories***, etc. Measurement also refers to the score obtained and the process used. It is descriptive in nature in that it merely describes, usually in the form of number or score, how much students have learned or how well they have performed.

Evaluation has been defined variously, generally it refer to the process of delineating, obtaining, and providing useful information or judging decision alternatives

Evaluation in education is used generally as the process by which a project or programme is judged in relation to its stated objectives. It is meant to determine the degree to which it has achieved its objectives.

Evaluation can be classified into three major categories based on the purpose being served.

Formative Evaluation

When evaluation is applied in the developmental stage of a programme, it is called formative because its findings are used to alter and adapt the innovation being devised. The principle of formative evaluation requires that tests are made in small pilot project and the findings fed back to the team developing the programme. Necessary changes are effected and it will be tested again to ascertain its reliability before such programme is implemented or

utilized. Formative evaluation may take place at the end of every stage of the programme being developed.

At the classroom instruction level, formative evaluation (formative assessment) refers to assessment conducted during the course of instruction. It provides feedback while it is still possible to influence the instructional and learning process. This may be in the form of oral questions, written test or demonstration of skills with the purpose of providing feedback that can be used to plan or alter instruction. The feedback obtained through formative assessment allows the teacher to adjust instruction and improve students' performance before a final assessment of learning is conducted.

Example

Students' scores on a ten-item mathematics test represent a measurement of how well the student understand the topic covered. These scores in themselves do not represent good, bad, acceptable, or unacceptable performance. The "goodness" of a student's score is determined by making a judgement, that is, by comparing the score obtained through measurement to some standard or to other students' score. This judgement is referred to as *evaluation*

Summative Evaluation

This applied to a programme that has been fully implemented. To assess how much of the stated objectives have been achieved after a given period of implementation. At the classroom level, summative evaluation refers to assessment conducted after instruction is completed. This type of assessment is used to make final judgements about a students' learning. It attempts to summarize a student's achievement or progress hence it could take place at the end of a lesson,

a topic, weekly, terminally, annually or at the end of a course/training.

CHARACTERISTICS OF FORMATIVE AND SUMMATIVE EVALUATION

	Formative	Summative
Purpose	To monitor and guide a process while it is still in progress.	To judge the success of a process at its completion
Time of assessment	During the process	At the end of the process.
Assessment technique	Informal observation, quizzes, homework, pupils' questions, worksheets.	Formal tests, projects, term papers.
Use of assessment information.	Improve and change a process while it is still on	Judge the overall success; grade, place and promote

Diagnostic Evaluation

This is a form of evaluation carried out to diagnose, analyse, or locate an individual or programme areas of weaknesses or strength, to determine the nature of weaknesses, or deficiencies, and wherever possible, to suggest their causes. Depending on what point it is carried out, diagnostic evaluation may be classified as either formative or summative evaluation. It involves the use of diagnostic achievement test especially when the need to demonstrate certain skills is required. Results

from such diagnostic tests are used to take decision on the larger body of information or skill.

Example

A student finding it difficult to learn multiplication of fraction in mathematics might be due to using wrong algorithms. If the teacher decides to have a chat with the pupil, the few minutes' conversation may expose this flaw and hence change the

Action research, a process of conducting school-based research to improve teaching and learning can be regarded as formative evaluation technique. It describes a process, which teachers use to find out about the quality of teaching and learning taking place. The simple process of action research involves

- Setting criteria for evaluating teaching,
- Identifying characteristics for effective learning
- Determine what evidence can be collected to show that effective teaching and learning are taking place. (This may be qualitative or quantitative data).

Purpose of Evaluation

Evaluation can help both the teacher and the student; the two perspectives of evaluation are enumerated below as follows:

To The Teacher

- It helps in providing knowledge concerning the students' entry behaviour, for example, it will be wrong to start teaching programming in computing to students who are yet to learn the binary system, algorithms or flow chart rules. An effective teacher

must identify what the students already know, and use that as a leverage for the new lesson.

- It helps in setting, refining, and clarifying realistic goals for each student. The knowledge of learners' entry behaviour will guide the teacher in setting appropriate objectives in subsequent lessons. It will ensure that too difficult or too easy tasks are not set for the students.
- It helps in ascertaining the degree to which the objectives have been achieved
- It also helps the teacher in determining, assessing, and refining his instructional strategy.

To the Student

- It helps in communicating the teacher's goals
- It increases motivation
- It encourages good study habits
- Provides feedback that identifies strengths and weaknesses.
- For placement or choosing career.

Continuous Assessment

In school, teachers on the basis of impressions gained as they observe their pupils at work usually carry out assessment of learning. This cumulative way of recording pupils' progress over a long period of time using a variety of methods and data called ***continuous assessment*** is recognized in the national policy on education (1998; revised). It depends on carefully kept assessments of the child's work throughout his course building up gradually to a profile of his performance.

In other words, Continuous assessment can be defined as a mechanism whereby the final grading of a student in the cognitive, and

psychomotor domains of behaviour systematically takes account of all his performances during a given period of schooling

(FME&ST, 1985)

The following characteristics of continuous assessment must be must be considered in employing it.

- ◆ **Systematic-** It is said to be systematic because it requires an operational planning of what to measure in learners, when, the nature of instruments or tools to be used in the measurements.
- ◆ **Comprehensive-** It is comprehensive since many types of instrument are used in determining the performance. Also students are seen in their totality because decisions are made based on information obtained in the cognitive, affective and psychomotor domains.
- ◆ **Cumulative-** Continuous assessment is cumulative since any decision to be made at any point in time depends on all previous decision about him. The implication of this is that cumulative records must be kept on each student.
- ◆ **Guidance Oriented-** Information obtained from continuous assessment is used to guide the development of the student.

A teacher carrying out continuous assessment must first answer the following four questions, which will guide his choice of techniques or tools for assessment.

- i. What knowledge and understanding should student possess?

- ii. What interest and attitude should they develop?
- iii. What changes in habits of thinking, feeling and doing should take place?
- iv. What skills should they be able to display?

Assessment Techniques

Tests

Test including examinations several functions; in the classroom, they determine achievement or lack of achievement and help in knowing the effectiveness of teachers' efforts and or the learning situation and learning materials. The guidance counsellor uses test results as concrete evidences for guiding students and parents in making educational and vocational choices. They also help in solving problem cases. Tests also help the administration in placing students, determining eligibility and evaluating curricula and curricula activities.

One distinction that may be drawn between tests is that teachers construct certain tests while specialists in test construction design others.

A test, which measures what the individuals have learned to do, is known as achievement or attainment test. Aptitude tests (usually developed by experts in test construction) on the other hand measure what individual are capable of learning to do.

Tests may also be classified into two as follows

- **Essay (Subjective Tests)** – this allows the student to organize his response to a question in his own style and words.
- **Objective tests-** This uses a ready-made format in which only a word or a term needs to be supplied, hence, it is said to be structured.

When constructing tests, the following process must be adhered to:

- i. Formulation of objectives
- ii. Construction of a blueprint or table of specifications
- iii. Writing of tests and organizing the test.

General Guidelines for writing Test Items

- ❑ Always construct more items than will eventually be used in the test
- ❑ This gives you the opportunity of discarding items that are not very good
- ❑ Avoid the use of long and involved statements. Such statements will present some of your students with a time consuming problem of digging out the elements that are important in answering the item
- ❑ Specify the degree of accuracy required for full credit. Here approximate answers are possible. This can be done either in the item or in the directions for a series of items
- ❑ Avoid extraneous cues. Check carefully for information a student can use to get an item right even though he does not have the abilities the item is sampling
- ❑ Avoid giving clues to one item in the statement of another. When attempting to get an objective from different angles, this needs particular attention
- ❑ Avoid the use of negative statements whenever possible and never use double negatives. Negatives in the statements of items are easily missed by students particularly when speed is a factor
- ❑ Avoid the use of excessive window dressing. Do not put any more in an item than necessary for the purpose of that item.

Examples of Objective Tests

(a) **True/False– Yes or No**

In this type of Tests, a statement is made either positively or negatively followed by True/False (T/F) in a bracket for the candidate and circle or ticks the correct answer.

E.g. Air is a mixture of gases (**T/F/**) it could come in question form whereby the candidate will answer either Yes or No.

Is Air a mixture of gases? (Yes/No)

(b) **Fill-in-Blanks** Some part of a sentence, definition or law is removed and the candidate is required to supply the missing links or complete the statement e.g. fill in the blanks of the same flocks together.

© **Multiple Choice-** The question is followed by options out of which the candidate is required to choose the only correct answer e.g. Underline the correct answer to this question subtract 123 from 300 (272,173,263,163).

(d) **Matching Pairs** – The student is given two group of information out of which he will be required to identify from each group the one that will best complete the other.

(e) **Note:** If the lists to be matched are exactly equal in number, some pupils will get the right answers by a process of elimination. This can be overcome by offering a longer list of answers than there are questions.

(f) **One-Word answers** – This is very useful in the testing of recall of facts. The candidate is required to supply the answer in one word or phrase. It is either he knows it or not on room for explanations. E.g. in what year was LASU founded? (1984)

Project Techniques

This method usually provides a deeper insight into students' levels of feelings and the way they normally react to situations. It is useful in the cognitive, affective and psychomotor domains of learning

A project is a large-scale set of exercise from which time constraints have been largely removed. A very wide amount of work is covered by the term *project* and it can involve activities such as:

- Collecting data and analysing it
- Engaging in open ended experiments in a laboratory
- Making objects complete in themselves or as part of larger studies
- Identifying and endeavouring to solve problem in fields of learning, or community living. Such problems include waste disposal, school discipline and related social, educational and economic problems.
- Investigating underlying concepts and principles. A typical example is an investigation into the relationship between motivation and productivity

Observation Technique

Teachers normally learn a lot from observing pupils. This technique has the advantages of:

- (a) Giving a record of actual behaviour not only of what the students think of themselves. It should however be free of bias.
- (b) It is applicable in natural setting
- (c) It is useful when verbal communication is not possible.

In other to carry out observation objectively, the following procedure must be followed:

- Identify the quality or behaviour to be observed in learners
- Determine the appropriate activities that could make the children exhibit the quality.
- Determine the method of observation
- Conclusion in respect of observation. This conclusion should be based on several observations.

In reporting the observation, all observation must be recorded as they happened- no interpretation, no insinuation. One must take note of time, place and circumstances of the behaviour.

A general guide to steps in the use of projects for evaluation is as follows:

- Identify the general purpose for the projected work
- Break down the basic purpose into specific objectives
- Assign priorities to each of the objectives to enable evaluators to know the emphasis
- For each objective determine the degree of penetration desired.

The teacher adopting the project method should not see his role as that of an evaluator but also a consultant.

Sociometric Technique

This is a way of ascertaining student's standing within a social group e.g. peers or classmates. It is simple method of analysing the acceptances or rejection made by every member of a group on other members. It could be used for selecting student for different assignments.

Questionnaire

A questionnaire is simply a series of questions presented to obtain information about the respondent's interest, personality characteristics, work habit, home background etc.

This is one of the most useful methods of evaluating attitudes. The questionnaire could be open-ended and such questions are very good for measuring attitude. They could be closed item questions.

Hence the questions are given orally and the respondent replies orally, it is called ***Interview***