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Evaluation in Educational Practice

Types and Phases

9/4/2013

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Types and Phases of Evaluation in Educational Practice

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Introduction

This unit provides an idea of the importance of evaluation in education. The purpose of measurement and evaluation are discussed. We shall be looking at the importance and functions of tests in education. It will give you an overview of educational measurement and evaluation, which you will find useful in building up deeper understanding of the area. The specific purposes of measurement and evaluation in schools are:

1. Placement of student- this involves bringing students appropriately in the learning sequence and classification or streaming of students according to ability or subjects.
2. Selecting the students for courses – general, professional, technical, commercial etc.
3. Certification: certifying that a student has achieved a particular level of performance. Stimulating learning: this can be motivation of the student or teacher, providing feedback, suggesting suitable practice etc.
4. Improving teaching: by helping to review the effectiveness of teaching arrangements.

Information from measurement and the ensuing evaluation are used in a variety of educational processes namely,

- Research
- Guidance and counseling
- Modification of the curriculum, textbooks, teaching methods

- Selecting students for employment. particularly at the secondary level, to make informed decisions about their educational and vocational plans and aspirations, and to inform admitting institutions of the applicants' accomplishments and potential
- Promotions to the student
- Reporting students progress to their parents, making it possible for them to cooperate with the school in the development of plans
- Awarding scholarship and merit awards
- Admission of students into educational institutions

There are various types of evaluation in education, according to the relative emphasize they have on these various functions. Let us see major types of evaluation in education, now.

Objectives

By the end of this unit, you will be able to:

- Identify the types of evaluation
- Describe the major steps in the evaluation process
- Explain the role of evaluation in the teaching-learning process
- State the need for diagnosis and remedial measures

Types of Evaluation

Evaluation can be classified into different types. Most popular types of evaluation are based on the purpose and timing of evaluation and the object of evaluation.

When we speak of the types of evaluation, we are referring to the different processes, products and persons subject to evaluation. These include student, curricula, schools, school systems, large populations, special programs or projects and personnel. The fact that we speak of different types of evaluation does not mean that there are a number of different evaluation processes. The basic evaluation process is the same, regardless of what is being evaluated. What differs is what is being evaluated, how the evaluation process is applied and the types of decisions made.

Depending upon what is being evaluated, different types of data will be collected, different criteria will be applied to the data, and different types of decisions will be made. But the basic evaluation process is the same and the same general concepts and principles of measurement and evaluation are applicable.

Types of Evaluation based on purpose

The different types of evaluation based on purpose are: placement, formative, diagnostic and summative evaluations.

Placement Evaluation

This is a type of evaluations carried out in order to fix the students in the appropriate group or class. In some schools for instance, students are assigned to classes according to their subject combinations, such as science, Technical, arts, Commercial etc. before this is done an examination will be carried out. This is in form of pretest or aptitude test. It can also be a type of evaluation made by the teacher to find out the entry behaviour of his students before he starts teaching. This may help the teacher to adjust his lesson plan. Tests like readiness tests, ability tests, aptitude tests and achievement tests can be used.

Formative Evaluation

This is a type of evaluation designed to help both the student and teacher to pinpoint areas where the student has failed to learn so that this failure may be rectified. It provides a feedback to the teacher and the student and thus estimating teaching success e.g. weekly tests, terminal examinations etc.

Diagnostic Evaluation

This type of evaluation is carried out most of the time as a follow up evaluation to formative evaluation. As a teacher, you have used formative evaluation to identify some weaknesses in your students. You have also applied some corrective measures which have not showed success. What you will now do is to design a type of diagnostic test, which is applied during instruction to find out the underlying cause of students persistent learning difficulties. These diagnostic tests can be in the form of achievement tests, performance test, self rating, interviews observations, etc.

Summative evaluation:

This is the type of evaluation carried out at the end of the course of instruction to determine the extent to which the objectives have been achieved. It is called a summarizing evaluation because it looks at the entire course of instruction or programme and can pass judgment on the teacher and students, the curriculum and the entire system. It is used for certification.

Types of evaluation based on what is being evaluated

Student Evaluation

Achievement is one of the variables on which student is assessed; other major variables include aptitude, intelligence, personality, attitudes and interests. In order to assess achievement, tests, both standardized and teacher-made, are administered; projects, procedures and oral presentations are rated; and formal and informal observations are made. A teacher uses performance data not only to evaluate student progress but also to evaluate his/her own instruction. In other words, the process of evaluating students provides feedback to the teacher. Feedback on current student progress also gives direction to future instructional activities.

There are all kinds of decisions made which do directly affect the student; not all of these decisions are made by the teacher. The teacher decides –

- Whether the student has achieved objectives, or to what degree, and provides appropriate remedial work if necessary

- Whether the student is working up to a potential

- What should be expected from a certain student or a group of students

- Whether the child has special needs which cannot be met in regular classroom and recommend that a child be placed in special environment

There are numerous other decisions that are made concerning students in which the teachers is either not involved or only makes recommendations. These decisions include

- The placement of a child in a special program

- Promotion of a student

- The employment of students and their admission to other educational institutions

Curriculum evaluation

Curriculum evaluation involves the evaluation of any instructional program or instructional materials, and includes evaluation of such factors as instructional strategies, textbooks, audiovisual materials, and physical and organizational arrangements. Curriculum evaluation may involve evaluation of a total package or evaluation of one small aspect of a total curriculum, such as a film. Although ongoing programs are subject to evaluation, curriculum evaluation is usually associated with innovation, a new or different approach; the approach may be general or specific to a given area. Curriculum evaluation usually involves both internal and external criteria and comparisons. Internal evaluation is concerned with whether the new process or product achieves its stated objectives, that is whether it does what it purports to do, as well as

with evaluation of the objectives themselves. External evaluation is concerned with whether the process or the product does whatever it does better than some other process or product. In addition to student achievement, there are a number of other factors which should be considered during curriculum evaluation. The two most important factors are attitude and cost. Research has demonstrated that there is a proportional relationship between teacher attitude toward curriculum and its ultimate effectiveness.

Curriculum evaluation has one major problem associated with it: It is very difficult to compare fairly the effectiveness of one program or approach with another. Even if two programs deal with the same subject area, they may deal with objectives which are very different, and it is very difficult to find a test or other measures which is equally fair, or valid for both programs. If one curriculum is to be compared to another, the objectives of each must be examined carefully; if no measure can be located which is equally appropriate to both, then one must be developed that is.

School evaluation

Evaluation of a school involves evaluation of the total educational program of the school and entails the collection of data on all aspects of its functioning. The purpose of the school evaluation is to determine the degree to which school objectives are being met and to identify areas of strength and weakness in the total program. Information from school program provides feedback to which gives direction to the future activities of the school and results in decision concerning the allocation of school resources. One major component of school evaluation is the school-testing program; the more comprehensive the testing program, the more valuable are the resulting data. A school testing program should include measurement of achievement, aptitude, personality and interest. Test selected for a school must match the objectives of the school and be appropriate for the students to be tested. In general, school evaluation involves more than the administration of tests to students; it may require any combination of questionnaires, interviews, and observations with data being collected from all persons in the school community, including administration, teachers and counsellors.

Evaluation of personnel

Evaluation of personnel (staff evaluation) includes evaluation of all persons responsible, either directly or indirectly, for educational outcomes, i.e., teachers, administrators, counsellors and so forth. It has been found out that this area of evaluation is very complicated; it is difficult to determine what behaviours are to be evaluated. The best solution to problem of personnel evaluation is to collect the best and most data possible, from as many sources as possible.

Phases of evaluation

Evaluation is a continuous process; contrary to public opinion, it is not what you do at the end. Evaluation in instructional process involves three broad phases

1. Identifying and defining the intended outcomes.
2. Constructing or selecting tests and other evaluation tools relevant to the specified outcomes, and
3. Using the evaluation results to improve learning and teaching.

Evaluation should be planned for prior to execution of any effort and should be involved throughout the duration of the activity. There are typically a series of temporary ends in a continuous cycle. In student evaluation, for example, we start with a set of instructional objectives. Then we implement instructional strategies to facilitate their achievement. Then we measure achievement, a temporary end in the instructional cycle. Based on the results, we reassess our objectives and strategies and proceed. Thus the process is cyclic, with feedback

from one cycle guiding the next. We do not just evaluate outcomes; every stage of the process is subject to evaluation beginning with the objectives.

The evaluation process entails decision-making. Any educational endeavour involves a whole host of decisions which must be made – decisions about objectives, decisions about strategies, decisions about measurement, and so forth. These various decisions can be classified in terms of when they are made, that is, during what stage of the activity under study. Thus, each phase of evaluation involves different kind of decisions. Logically we can identify three phases; the planning phase, the process phase and the product phase.

The planning phase

This initial phase of evaluation takes place prior to actual implementation and involves making decisions about what course of action will be taken and toward what ends. The planning phase involves a number of processes which are discussed below.

a) Situation analysis

The first step is to analyze the situation as it presently exists in order to establish the parameters of the effort. This step includes activities such as the collection of background information and assessment of existing constraints. For a teacher this may involve examination of the commutative records of his or her students in order to get a frame of reference based on their abilities and histories. After the parameters have been established, more realistic goals and objectives can be formulated.

b) Specification of objectives

Goals are general statements of purpose, or desired outcomes and not as such directly measurable. Each goal must be translated into one or more specific objectives which are measurable. Thus, objectives are specific statements of what is to be accomplished and how well and are expressed in terms of quantifiable, measurable outcomes. Objectives may process oriented or product oriented. Process objectives describe outcomes desired during the execution of the effort, and they related to the development and execution. Product objectives, on the other hand, describe outcomes intended as a result of the effort. Objectives give direction to all subsequent activities and achievement of objectives is ultimately measured. Objectives, whether instructional or program objectives, form the foundation of all subsequent evaluation activities, and therefore it is critical that they themselves be evaluated in terms of relevance, measurability, substance, and technical accuracy.

c) Specification of pre-requisites

Objectives entail unique procedure with respect to student evaluation. In most cases, specification of a given set of instructional objectives is based on the assumption that students have already acquired certain skills and knowledge. If the assumption is incorrect, then the objectives are not appropriate. The assumed behaviours are referred to as pre-requisites or entry behaviours. Systematic instruction and evaluation require that these pre-requisites be specified and measured. Assessment of entry behaviour is specifically important at the beginning of any instructional unit. To arrive at pre-requisites, you simply ask yourself the following question: What must any students know or be able to do prior to instruction order to benefit from instruction and achieve any objectives.

d) Selection and development of measuring instruments

Collection of data to determine degree of achievement of objectives requires administration of one or more instruments. Such instruments must either be developed or selected. Selection of an instrument involves examining those that are available and selecting the best one. Best, in this case, means the one that is most appropriate for your objectives and users.

Development of a good instrument takes considerable time, effort and skill. Training in measurement in the process is necessary for such end.

e) Delineation of strategies

Strategies are generally approaches to promoting achievement of one or more objectives. There may be instructional strategies, curriculum strategies, and program strategies. Each strategy entails a number of specific activities, and there are typically a number of strategies to choose from. Execution of these strategies must be planned for, to ensure the availability of necessary resources. Strategies which must be thoroughly thought of before evaluation is conducted include: task analysis, review of concepts, sequencing, provision of feedback and practice.

f) Preparation of time schedule

Preparation of realistic time schedule is important for all types of evaluation; rarely do we have as long as we please to conduct evaluation. Basically a time schedule includes a list of the major activities of the proposed evaluation effort and corresponding expected initiation and completion times for each activity. You should allow yourself enough time, so that if an unforeseen minor delay occurs, you can still meet your final deadline.

The process phase

The process phase involves making decisions based upon events which occur during actual implementation of the planned instruction, program or project. The first step in the process phase is to administer pre-tests, if such are appropriate. Based on the pre-test results, decisions may be made concerning the appropriateness of the already specified objectives. Following initial testing, planned strategies and activities are executed in the predetermined sequence. Data collected during this phase provide feedback concerning whether execution is taking place as planned and whether and whether strategies and activities are being effective. The basic purposes of this phase are to determine whether the effort is being executed as intended, to determine the degree of achievement of process objectives, and to identify ways in which improvements can be made. The process phase is referred to as formative evaluation.

The product phase

The product phase involves making decisions at the end or more likely at the end of one cycle of instruction, a program or a project. Decisions made during the product phase are based on the results of the post-tests and on other cumulative types of data. The major purpose of the product phase is to collect data in order to make decisions concerning the overall effectiveness of instruction, a program or project. During this phase it is determined whether and/or what degree intended product objectives were achieved. Data analysis and interpretation is followed by the preparation of a report which describes the objectives, procedures, and outcomes of the effort. The results of the product phase of evaluation are used in at least in two major ways. 1) They provide feedback and direction to all who were involved in the effort, 2) They provide feedback to outside decision makers, such as parents, principals, school board members and funding sources.

Results of the product phase need to be interpreted with care. Failure to meet objectives, for example, is not necessarily fatal; degree of achievement needs to be considered. The product phase of evaluation is referred to as summative evaluation.

It is important to consider the following, if evaluation procedures are to bear fruit:

- Deciding when to evaluate;
- Deciding what precisely to evaluate;
- Deciding whom the evaluation is intended to serve;

- Deciding who should conduct the evaluation;
- Deciding what questions the evaluation should address;
- Planning the evaluation study;
- Deciding how to report the evaluation study; and
- Dealing with the political, ethical and interpersonal issues in evaluation.

Role of the school in integrating the process of evaluation

Each school shall be responsible for developing its procedures for measurement and evaluation. School shall undertake to work with teachers and parents regarding elements to be measured and evaluated; time for measurement and evaluation; the measurement and evaluation techniques to be employed; the objectives, expectations and the format of evaluation in each subject; and providing precise and pertinent information concerning the students' progress to parents and teachers, in accordance with the guidelines.

Summary

Major functions of test in education include motivation of students to learn, Determination to how much the student have learned, Determination of the students' special difficulties, Determination of students' special abilities, Determination of the strength and weaknesses of teaching methods, Determination of the adequacy or otherwise of instructional materials, and Determination of the extent of achievement of the objectives.

Study questions

1. What are the major differences and similarities between formative evaluation and diagnostic evaluation?
2. List five functions of tests in education.
3. Differentiate between the following pairs:
 - (a) Prognostic and diagnostic evaluation
 - (b) Formative and summative evaluation
4. What is the role of educational measurement and evaluation in education?

Assignments

1. List the instruments which you can use to measure the following: weight, height, length, achievement in Mathematics, performance of students in Technical drawing, attitude of workers towards delay in the payment of salaries.

Quiz

1. The systematic process of collecting and analyzing data in order to make decision is called
 - a. Evaluation
 - b. Measurement
 - c. Assessment
 - d. Testing
2. The process of quantifying the degree to which someone or something possesses a given trait is called
 - a. Evaluation
 - b. Measurement
 - c. Assessment
 - d. Testing
3. Which among the following purposes of measurement and evaluation helps in improving learning in schools?
 - a. Placement
 - b. Stimulating

- c. Feedback
 - d. All the above
4. Which among the following is a proper definition of measurement?
- a. Process by which information is obtained relative to some known objective or goal
 - b. Systematic assignment of numerical values to a trait or an attribute
 - c. Process of making and administering test to obtain a quantitative representation of the cognitive or non-cognitive traits
 - d. Disciplined inquiry to determine the worth or merit of things
5. What are the functions of a classroom test?
- a. To know extent of achievement of the objectives
 - b. To yield information regarding the worthiness of the objectives
 - c. To assist in improving programmes having the same purposes
 - d. To symbolize how much of 'something' is possessed
6. Which sequence the concepts is in the order of increasing complexity?
- i) Assess ii) Measure iii) Evaluate iv) Test
- a. i, ii, iii and iv
 - b. ii, i, iii and iv
 - c. ii, iii, iv and i
 - d. ii, iv, i and iii
7. What does formative evaluation do?
- a. Find out the cause of students' difficulties
 - b. Adjust teacher's lesson plan
 - c. Pinpoint areas where the student has failed to learn
 - d. Determine the extent to which the objectives are achieved
8. Which among the following descriptions best suits diagnostic evaluation?
- a. Fix the students in the appropriate group
 - b. Feedback to the teacher and the student
 - c. Follow up evaluation to formative evaluation
 - d. Looks at the entire course of instruction
9. Curriculum evaluation includes
- a. Evaluation of one small aspect of a total curriculum
 - b. Finding whether the student is working up to a potential
 - c. Measurement of achievement, aptitude, personality and interest
 - d. Promotion of a student
10. Choose the possible sequence of activities in evaluation
- i) Establishing the parameters of evaluation, ii) Translating the goals into specific objectives, iii) Assessment of entry behaviour, iv) Formative evaluation
- a. i, ii, iii, and iv

- b. i, iii, iv, and ii
- c. i, ii, iv, and iii
- d. i, iv, iii, and ii

Glossary

Evaluation is the systematic process of collecting and analyzing data in order to make decisions.

Measurement is the process of quantifying the degree to which someone or something possesses a give trait, i.e. quality, characteristic or feature.

FAQ

What is the difference between educational measurement, assessment and evaluation?

Like so many inter-related concepts, these terms overlap considerably, but have centres of specialization. Measurement is generally the narrowest and involves comparative judgements, nearly always based on quantification (numbers).

Assessment can make use of measurement, but it is usually concerned with broader judgements and more varied forms of observation to come to conclusions about the level of an achievement. Evaluation may use methods of measurement, and almost surely also assesses situations. Perhaps the most important difference is that evaluation is applied more to institutions, projects and objects, while assessment is applied either to individuals or to more general situations. However, the usage of these terms shifts from context to context. Different organisations (or even sectors) create fixed working definitions that are shared by practitioners in that context, although another context may use the same term with a different intention. Users of the terminology should make sure that how they are using a particular term is clear.

References

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