

COLLABORATIVE LEARNING TOOLKIT FOR STUDENTS WITH SPECIAL EDUCATION NEEDS: MEASUREMENT AND EVALUATION

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What is measurement?

- One of the basic elements that ensure the existence of the education system is measurement. Measurement has an important place in all branches of science and a science without measurement or measurement cannot be considered.
- The variables observed or measured in education and training are mostly psychological variables such as success, interest, talent, motivation. Therefore, the physical qualities of many of these variables cannot be known, and their physical dimensions cannot be defined. Measurement is done to determine the extent to which individuals or any object have a certain quality.
- In terms of the education and training process, knowing and learning are the same things. In the process, it is tried to determine to what extent students can reflect and realize the behavioral changes that are desired to be gained or expected from them.

Definition of measurement

- Measurement can be expressed in its shortest definition as the observation of a quantity and its representation with a unit of the same type. In its most general sense, measurement is the expression of a certain quality by making an observation and matching the observation results with symbols or numbers. Measurement is the expression of these qualities with symbols or numbers while preserving the relationships between the measured qualities (smallness, largeness, etc.).
- Based on the definitions, examples such as what the eye color of an individual is, how many units does he weigh, how many centimeters is his height, what level of attitude he has towards a subject, what score he received in a general aptitude test, what kind of personality traits he has, what professional fields he is interested in are situations that can only be revealed through measurement. When these examples are examined carefully, it is seen that some of the qualities that are the subject of measurement can be measured indirectly (success, personality, interest, talent, attitude, etc.), while others can be measured directly (mass, length, etc.).

Stages of measurement

- The measurement should be as error-free as possible, in accordance with the purpose of evaluation for which it will be used, and should measure without confusing other features with the feature it measures.
- The measurement process consists of three stages. These are:
 - a. Determining the qualities to be measured (determining the qualities).
 - b. Deciding which symbol or number will be used to indicate the qualities decided to be measured (determining the quantities).
 - c. Matching the qualities with the quantities according to the determined rules (performing the matching). Numbers are used more than symbols in measuring success. Before a student's success in a course can be expressed numerically; steps or processes such as selecting the qualities (behaviors) to be measured, writing questions for the qualities to be measured and preparing a measurement tool, applying the prepared measurement tool and then scoring the student's answers must be carried out.

What is evaluation?

- Measurement and evaluation are two important concepts that cannot be separated from each other. Because evaluation cannot be done before the measurement process is completed. The concept of evaluation can be briefly defined as the process of comparing observation or measurement results with a criterion or criteria and finally reaching a decision. Evaluation is the process of interpreting the meaning of the measurement results (measurements) obtained when the measurement is completed. Evaluation is the process of reaching a value judgment and making a decision as a result of comparing the measurement results with a criterion.
- Determining the criteria or criteria for any evaluation subject in advance, then making observations, comparing the observation results with the previously determined criteria and finally reaching a decision can be listed as the procedures that need to be carried out in order to make an evaluation.

1. Diagnostic and placement-oriented evaluation

- In the evaluation process, evaluation types are handled under three headings according to their purpose of use. These are: Diagnostic, formative and result-oriented (summarizing, level-determining) evaluations.
- 1-Diagnostic and placement-oriented evaluation is done at the beginning of the education and training process. The aim is to get to know the students and place them in the most suitable education program and, in a way, to determine the students' readiness. In this type of evaluation, it is not aimed to give grades to the students, the main purpose is to place the students in the most appropriate program, course, class, etc. Level determination exams, talent exams, exemption exams, etc. can be given as examples of recognition and placement-oriented evaluation.

2. Process-oriented evaluation

- 2- Process-oriented evaluation is done at certain intervals while the education and training process continues. It is done to determine the students' learning deficiencies in units and subjects, the difficulties they experience, to correct them and to provide feedback to both students and teachers. It is an effective evaluation type in checking whether the program continues as planned during the education and training process and to obtain information about whether the target has been achieved. The main purpose of this type of evaluation is not to grade the student but to provide feedback.

3.Result-oriented evaluation

- 3-Result-oriented evaluation is a result-oriented evaluation. It is done to determine the level of the students at the end of the completed education and training process, to reveal the extent to which the expected gains have been achieved by the program and to determine the possible unexpected effects or results of the program. Thanks to this type of evaluation, the success of the teachers can also be evaluated by looking at the level of students reaching the determined gains. The main purpose is to grade the student and in a way, a value is determined according to the grade they receive at the end of the teaching process.

Benefits of evaluation

- Some of the benefits of evaluation can be listed as follows:
 - a. It is possible to eliminate the deficiencies and faults determined by effective teaching through evaluation.
 - b. It will be possible to control the quality of education by examining the evaluation outputs. If this is not done, there will be major problems in determining whether the efforts and labors given in the education and training environment have yielded results.
 - c. In line with the evaluation results, teachers gain information about the effectiveness of the methods applied in the classroom. Abandoning unsuccessful methods, detecting errors and implementing new methods are among the gains achieved through evaluation.
 - d. Determining the existing level and correctly interpreting the result through evaluation will provide the opportunity to increase the level of success for both the teacher and the student.

Importance of measurement and evaluation

- Measurement and evaluation are an integral part of effective teaching. If measurement and teaching work together and evaluation is implemented effectively, there is likely to be an improvement in student achievement. The education and training process consists of a series of elements that interact with each other and affect student achievement. Teachers' understanding of measurement and evaluation is one of the most effective of these elements. It is only through the measurement and evaluation process that it is attempted to determine which goals have been achieved or not achieved in education and training.
- Without measurement and evaluation, it is not possible to obtain information about the effectiveness, efficiency, deficiencies, positive and negative aspects of teaching, students' successes, and learning deficiencies, and to receive feedback. Measurement and evaluation is carried out to determine the level of readiness of students, to follow their development and provide feedback, to determine the effect and efficiency of the teaching-learning process, and to evaluate and develop programs.

Importance of measurement and evaluation

- In order to achieve the goal of deeply and constructively integrating measurement and evaluation into the teaching process, the following five conditions must be met when creating assessment environments in schools and classrooms:
 - a. Assessment environments must be built around a set of clearly stated and appropriate expectations for success for each student.
 - b. All key decision-makers must be committed to providing accurate, understandable, and usable information about student achievement.
 - c. Everyone concerned with the quality of schools must be “assessment literate” in order to understand the differences between sound and unsound assessment practices.
 - d. An assessment policy that demands and supports quality practices must be established.
 - e. How information about student achievement will best be collected, stored, managed, and communicated must be carefully considered and decisions made accordingly.