

ED 4161 The Teaching of Mathematics in the Intermediate and Secondary School. Instructor: Margo Kondratieva. October 2009.

Assessment.

1. Assessment is the process of collecting data and evidence about
 - a student's knowledge in mathematics;
 - ability of a student to answer mathematical questions and solve mathematical problems;
 - a student's disposition towards mathematics.

In a broader sense, assessment is a process of providing feedback to the students about his/her progress.

2. In terms of occasion and organization, assessment could be:
 - **informal**, i.e. unobtrusive, incidental judgments made in the course of ordinary classroom activities; not data driven but rather content and performance driven; used to inform instruction.
 - **formal**, i.e. explicitly organized activities (e.g. test); collect data which support the conclusion made from them; used to record students overall achievements.

In terms of the kind of collected information, assessment could be:

- **diagnostic**, i.e. identifies student's errors, misconceptions, etc.;
- **evaluative**, i.e. focuses on grading student's performance.

In terms of the purpose to which gathered information is used, assessment could be:

- **formative**, i.e. helping to guide teaching, learning and studying;
- **summative**, i.e. serving to apprise the outcomes and achievements.

3. The place of assessment in math education can be viewed at three levels:
 - **students' self-assessment and reflexive studying**, where assessment is a process through which the *students* shape their own learning;
 - **teacher assessment and responsive teaching**, where assessment is a process through which *teachers* shape the learning of their students;
 - **systemic assessment and effective schooling**, where assessment is a process through which *educational agencies* and institutions shape teaching, studying, and learning.

4. There are many different kinds of assessment in mathematics: pretest, quiz, midterm test, final test, multiple-choice questionnaire, homework assignment, project, interview, presentation, contest, game, essay, journals, etc. [*list more items here...*]

The main goal of having many kinds of assessment is to collect the most objective data on how the student meets the objective of the study and reflect upon this information. Thus, questions and problems should reflect the teaching objectives and minimize the chance of students correctly guessing the answer.

5. The frequency and time required to complete particular assignment is particularly important. This concerns both in-class and after-class assignments.

6. Students should be clear about the expectations, evaluation criteria, and format of the work to be submitted and marking schema must be consistent with that.

In any case students should be given a credit for demonstration mathematical thinking and creativity. Teachers' feedback should encourage students' interest and intellectual effort, including multiple approaches to answering a question, attempt to explain and revise their work, check or justify their answer.

7. The main assessment principles and standards are:

- it must be consistent with classroom practices and values;
- it should be used to determine gaps in understanding;
- it should give every student an opportunity to demonstrate an understanding;
- it must be clear about used criteria, purpose and means;
- it must provide a broad spectrum of information for student evaluation;
- it must form a coherent whole, and align with the instruction.