

M 7: ASSESSING STUDENT ACHIEVEMENT

- At the end of this module, students will be able to:
 1. describe the purpose of student assessment;
 2. clarify related terms like measurement & assessment, validity & reliability, criterion-referenced & norm-referenced assessment;
 3. explain & use Bloom's taxonomy of cognitive objectives;
 4. describe various types of assessment & their pros & cons;
 5. explain the nature & purpose of a table of specifications.

MODULE 7: ASSESSING STUDENT ACHIEVEMENT

- Measurement - quantifiable objective data through tests
- Assessment - measurement + subjective info like teacher observations & ratings of student performance
- Validity - does the test measure what it is intended to measure?
- Reliability - the consistency with which an instrument measures a quantity or behaviour

ASSESSMENT: A 3-STEP PROCESS

- 1. Diagnostic - to assess the student's knowledge & skills **before** the new instruction
- 2. Formative - **during** the instruction
- 3. Summative - **after** the instruction



PURPOSES OF ASSESSMENT

- 1 To assess & assist in curriculum development
- 2 To help determine teaching effectiveness
- 3 To help students develop positive attitudes, appreciation, and values
- 4 To help students increase understanding of concepts and skills

PURPOSES OF ASSESSMENT (contd.)

- 5 To motivate students
- 6 To provide diagnostic info
- 7 To provide review
- 8 To serve as an info for students & parents



CRITERION-REFERENCED vs. NORM-REFERENCED TESTING

- *Criterion-referenced testing: based on preset standards*
- *Norm-referenced testing: based on the relative achievement of students in a group*



PROS & CONS OF CRITERION-REFERENCED TESTING

- PROS
 - 1 Competency-based
 - 2 Helps students progress - mastery learning concept
 - 3 Encourages co-operative learning
- CONS
 - 1 Student may not feel challenged to compete

PROS & CONS OF NORM-REFERENCED TESTING

- PROS
- 1 Show's a student's ranking
- 2 Teaches students to be competitive
- CONS
- 1 Encourages competition
- 2 Discourages cooperative learning

BLOOM'S TAXONOMY OF COGNITIVE OBJECTIVES

- 1. *Knowledge: recognizing & recalling info*
- 2. *Comprehension: understanding*
- 3. *Application: using info*
- 4. *Analysis: dissecting info to see relationships*
- 5. *Synthesis: putting parts together to form new ideas*
- 6. *Evaluation: judging the worth of an idea*

QUESTIONS USED IN BLOOM'S TAXONOMY

- 1. Knowledge: define, identify, name
- 2. Comprehension: classify, describe, change
- 3. Application: show, plan, use
- 4. Analysis: compare & contrast, relate
- 5 Synthesis: develop, explain, plan
- 6. Evaluation: assess, consider, criticize



PROS & CONS OF ESSAY-TYPE TESTING

- PROS
 - 1 Measures higher mental processes
 - 2 Provides practice in written expression
- CONS
 - 1 Requires time to read & score
 - 2 Tends to provide an unreliable sampling of achievement
 - 3 Tends to be subjective scoring

EXAMPLES OF MCQ

- A criterion-referenced test is constructed so that:
- (a) each student will attain a perfect score if the student has mastered the objectives.
- (b) the student will be compared to other students and his or her position in the group determined.
- (c) the test measures what is supposed to test or meets the criterion established.
- (d) the deficiencies of a student are located in a specific area of behaviour.

EXAMPLES OF MCQ (contd.)

- Assessment and measurement are defined so that:
 - (a) the terms are synonymous.
 - (b) assessment includes measurement.
 - (c) measurement includes assessment.
 - (d) measurement and assessment are not directly related.

PROS & CONS OF MULTIPLE-CHOICE TESTING

- PROS

- 1 Objective marking
- 2 Items can be answered & scored quickly
- 3 Can test a wide range of content

- CONS

- 1 Tendency to write items that measure low levels of cognition
- 2 Takes time to write good questions that measure higher levels of cognition/learning



TABLE OF SPECIFICATIONS

- 1 A 2-way grid which indicates behaviour (cognitive) in one dimension and content in the other.
- 2 To ensure that your test measures what is supposed to be measured.



STUDENT EXPERIENCES OF PROJECTS (Light & Cox, 2001, 179)

• ADVANTAGES

- 1 Enable the student to explore deeply a field or topic
- 2 Develop initiative & resourcefulness
- 3 Enhance time & project management skills

• STUDENT EXPERIENCES

- 1 'It's the only time you do your own work.'
- 2 '... it's good that you have to do it all on your own ...'
- 3 'other work is other people's thoughts'

STUDENT EXPERIENCES OF PROJECTS (contd.)

- **ADVANTAGES**
 - **STUDENT EXPERIENCES**
- 4 Provide personal ownership of learning
 - 4 ‘Very much me, my biases and beliefs’
- 5 Foster independence & creative problem solving
 - 5 ‘Some original thinking is required...)

SELECTED REFERENCES

- Callahan, Joseph F., Clark, Leornard H. & Kellough, Richard D. (1995) Teaching in the Middle & Secondary Schools, 5th ed. Englewood Cliffs, N.J.: Merrill.
- Light, Greg and Cox, Roy (2001) Learning and Teaching in Higher Education - The Reflective Professional. London: Paul Chapman