Chapter 11

Evaluating the Effectiveness of Instruction Using Principles of Adult Learning

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ABSTRACT

This chapter provides an overview of assessment of instruction using adult learning principles. The goal of this chapter is to examine the assessment process, describe effective assessment techniques and provide guidelines for instructor developed assessments. Bloom's (1956) Taxonomy and the subsequent modification of levels of cognitive objectives provided by Anderson et al. (2001) are included. Various assessment exercises are described according to the modified levels of cognitive objectives. Instructors are guided in the process of developing their own assessments from objective tests to subjective essays. Readers are introduced to authentic assessment and provided ways of developing their own authentic assessments, including rubrics. Future trends of assessment practices are also discussed.

11.1 INTRODUCTION

Effective teaching begins with designing meaningful objectives and ends with evaluating whether those objectives have been met. Good instructors know to develop the objectives and assessment at the same time and ensure that each step along the teaching path refers back to the objectives set at the beginning of the process. However, assessment and evaluation cannot be applied haphazardly or sporadically. Effective evaluation of adult learn-

ing must be planned and implemented using a purposeful approach. The goal of this chapter is to examine the assessment process, describe effective assessment techniques and provide guidelines for instructor developed assessments.

11.2 WHAT IS ASSESSMENT?

Assessment is "collecting information about something to be used for some purpose" (Brookhart, 2004, p. 5). Instructors collect information throughout the process of teaching by observing

the reactions of their students and examining the results of their assignments or tests. Moran (2001) describes assessment as "using measurement to describe a learner's achievement and to make recommendations for additional learning activities" (p. 11) where *measurement* is "applying a set of rules to an attribute of something or someone to obtain quantitative information about it" (Brookhart, 2004, p. 5) An effective assessment process is direct and seeks to inform the instructor and learner about the learning process and provides them with information to improve it.

Evaluation is the process of "using measurement to describe a learner's achievement and to make recommendations for additional learning activities" (Moran, 2001, p. 11). Here, instructors seek to use information provided in the assessment process to determine how well learning is taking place and make modifications in future learning activities. That process may be formalized by making plans and developing an outline, or it may happen informally as instructors think about and reflect on the learning outcomes and means of improving them. Effective evaluation is best done when the instructor and learner establish strong and meaningful objectives, activities that will meet those objectives, and measurements to assure that the learner has met those objectives.

Assessments can be described as one of two types: formative and summative. *Formative assessments* are assessments that occur throughout the learning process and help ensure that learning is taking place. These can take the form of quizzes, classroom activities, roundtable discussions, performances, etc. *Summative assessments* are measurements that take place at the end of the learning process or program (Brookhart, 2004). Usually, summative assessments are used to determine if the learner has mastered the objectives of the course rather than individual tasks within the course. Examples of summative assessments include final exams, bar exams, theses performances, board exams, certification exams, etc. In the normal process of learning, learners are usually

faced with a variety of formative assessments with only one or two summative assessments.

Effective assessments need to meet four principles: objectivity, reliability, validity, and adequacy (Moran, 2001). *Objectivity* means that different assessors score the same response to a question or problem the same way. Objectivity is a measure of the level of bias of the assessors when they examine responses from different learners. Unbiased responses will mean that different scorers will look at similar answers from different individuals and give them similar scores, regardless of personal feelings about the learners themselves. *Reliability* is an indication of how well the assessment will produce the same scores when used numerous times. If individuals with a particular level of skill take an assessment on one day, reliable assessments will produce similar scores when taken a short time later. Assessments that are unreliable will give different scores for similar situations, making it difficult to interpret the results of those assessments and to use them in any meaningful way. *Validity* examines how well the assessment measures what it is supposed to measure. Valid tests match well with the learning objectives and assess whether those learning objectives have been met whereas measures with poor validity do not. Low validity tests may result in similar scores time after time; however, if they do not match the learning objectives, it will be very difficult to truly assess whether the learner has mastered the material. Finally, *adequacy* considers the degree to which the assessment or measure examines all learning objectives. Measures that examine only a few learning objectives are said to be inadequate, while measures that cover all of the learning objectives are considered adequate.

Learners can evaluate their learning using criterion-based judgments, norm-based judgments, or self-referenced interpretations. *Criterion-based judgments* (Moran, 2001) are used to determine if the learner has reached a particular level of skill or met previously established criteria in order to be considered qualified. Passing scores on exami-

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