What Every New Teacher Should Know about Assessment but Is Afraid to Ask!

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DISCLAIMER: Each year at the annual NES Chicago conference, my charge is to resuscitate a deadly boring topic of importance to those of you attending the conference and reading this book. This year’s topic dealt with measurement competencies for classroom teachers. This is definitely a Code Blue topic, so tune up your defibrillators. The presentation began with the late Barry White’s “You’re the First, the Last, My Everything,” which inspired lawyer John Cage on Ally McBeal for several years. That was followed by a parody of the MasterCard TV ad. Then I leaped into the substance of the presentation.

Since most states do not require their teachers to have any formal coursework or training in measurement or test construction, analysis, and score interpretation, the first question that pops out of my brain is: Who cares? After all of these years and experience with using tests and their scores, if beginning teachers don’t need any skills in that area, why bother now? Perhaps the requirements of No Child Left Behind and all of the other testing that’s occurring in the public schools have stimulated a reconsideration of whether measurement competencies might be worth another look. A few states have begun this process by including various lists of these competencies in their standards for teacher certification. Before we hop into these competencies, let’s lay out a few definitions.

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Preliminary Definitions

Purpose of Teaching

First, let’s consider the purpose of teaching:

To communicate content to students in the most effective and efficient manner to achieve learning outcomes/standards

The operative words in that purpose are:

- **content**—which suggests curricular content that is appropriate for all students
- **effective**—which suggests a variety of teaching strategies that represent “best practices”
- **efficient**—which suggests individualizing instruction to meet the instructional needs of all students in a timely fashion

If we consider the attention span of many students as equivalent to a muffin, then all three elements are essential to effective teaching.

Competency

Spencer and Spencer (1993) have defined a competency as “an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation” (9). They identified twenty-one common competencies grouped into six clusters: achievement and action; helping and human service; impact and influence; and managerial, cognitive, and personal effectiveness. These authors note: “You can teach a turkey to climb a tree, but it is easier to hire a squirrel” (294). In other words, squirrely teachers will possess the teaching and measurement competencies that can be assessed; the turkeys will need to be trained in those competencies. Hunt down and hire squirrels rather than turkeys; you’ll save yourself a lot of faculty development time and cost. Save the turkeys (and cranberries) for Thanksgiving, not for the school districts in your state. Translating job competence into essential measurement competencies will be examined later.

This definition of competency suggests a strategy for hiring teachers:

- Focus on those standards that will make the greatest difference in the classroom in teaching effectiveness
- Hire candidates who possess competencies on those standards, such as measurement and assessment
- Train teachers on the job for the standards they do not know

These three tips constitute an extremely cost-effective approach to teaching effectiveness (Berk 1999).

**Teaching WITHOUT Formal Measurement of Student Performance**

What would teaching be like if a teacher had no formal training in tests and measurements? Figure 1 depicts that scenario. The teacher would begin with statements of outcomes/objectives/standards for instruction, so there is no doubt what has to be done. Assume that he or she is dumber than a doorknob concerning measurement protocol. The teacher's motto is: “teach your guts out.” Despite whatever knowledge, skills, or abilities the students already possess, the teaching ignores these KSAs. In grades K–5, some type of diagnostic decisions would probably be made based on the curricula materials or maybe even on tests accompanying published texts. Nothing really systematic is done. This is by-the-hook-or-crook, seat-of-the-pants/skirt decision making. How inefficient is this? What a waste of both student and instructional time. Eventually, many of the decisions listed in the bottom box in Figure 1 might be made, without accurate evidence collected for those decisions.

![Figure 1: Instructional Process without Assessment](image)
Teaching WITH Formal Measurement Competencies

Let’s consider scenario 2, in which the teacher receives appropriate instruction through college course work or inservice training on measurement competencies. Once the teacher knows the standards, the first measurement task is to determine the students’ individual needs so that the instruction can be tailored for them. Placement, screening, and/or diagnostic tools may be used to obtain that information for those decisions. This initial strategy makes the most efficient use of both student and instructional time. The teacher can then design the instruction so that it fits each student’s incoming skill level rather than ignoring it and just spinning instructional wheels. Along the instructional journey, the teacher can then monitor each student’s progress in attaining the outcomes with quizzes or other measurement techniques. Other measures of achievement may also be administered throughout the year to furnish evidence on whether the standards are being met. These measures can range from teacher-made tests to large-scale tests administered district- or statewide, to those related to NCLB. The teacher’s training would allow him or her to use the results from these tests appropriately and interpret them wisely for instruction, program evaluation, and/or student and parental feedback.

Finally, all of the tools administered to the students may be used for decision making about grades, instructional effectiveness, and program effectiveness at the classroom, school, district, and state levels. Without knowledge of how to use and interpret the scores from these tests, the information could be misinterpreted or wasted by the teachers.
Figure 2
Role of Assessment in Instructional Process

Outcomes/Objectives/Standards

Measure Students' Needs
a. Placement
b. Screening
c. Diagnosis

Teach Your Guts Out
(Monitoring Progress)

Measure Achievement of Outcomes
a. Teacher-Made Tests
b. District- and Statewide Tests
c. NCLB Tests
d. Commercial Standardized Tests

Decisions
a. Grading
b. Instructional Effectiveness
c. Program Effectiveness

Pop Quiz

Before I present my wish list of measurement competencies for teachers, I thought it would be fun to see how much you remember about basic measurement concepts and terms. I am totally ashamed of myself for springing this pop quiz on you at this point in the chapter. I know you haven’t had time to study. Actually, this quiz is between you and this page. No one will know you flunked this quiz if, per chance, you do. But you should be ashamed of yourself. Ready? Go for it.


**DIRECTIONS:** Circle the **BEST** answer to each of the following five questions.

1. **What type of decision would a teacher make about a student based on his or her score on a pop quiz during the semester?**
   A. screening
   B. placement
   C. formative
   D. summative
   E. early retirement

2. **Which one of the following forms of assessment is based on direct observation?**
   A. criterion-referenced test
   B. norm-referenced test
   C. self-evaluation ratings
   D. student peer ratings
   E. your annual physical (every 5 yrs.)

3. **Which test-item format requires a scoring rubric?**
   A. fill-in-the-blank
   B. essay
   C. matching
   D. context-dependent multiple-choice
   E. true-false lie-detector interrogation

4. **What element is unique to student portfolios?**
   A. reflective writing
   B. paper-based tests
   C. oral presentation
   D. book report
   E. CDs, stocks, and bonds
5. What estimate of internal consistency reliability is reported for most commercial standardized achievement tests?

A. Will-Grace  
B. Long-Foster  
C. Kuder-Richardson  
D. Roto-Rooter  
E. Oscar-Felix


Measurement and Assessment Competencies

Okay, it is now time to spill my measurement guts. You've waited long enough. After carefully reviewing the most popular measurement textbooks by Ebel and Frisbie (1991), Chatterji (2003), Hopkins, Stanley, and Hopkins (1990), Kubiszyn and Borich (1996), Linn and Gronlund (2000), and Mehrens and Lehmann (1991), which took about seven minutes, I extracted the major competency categories herein forsooth that teachers should possess. Many of these are currently included in the standards of a few states.

1. Assess students' characteristics, development, and learning in key domains:
   - cognitive
   - social
   - emotional
   - ethical
   - physical

2. Select, construct, and use a variety of assessment methods:
   - teacher-made tests
   - norm-referenced tests
   - criterion-referenced tests
   - large-scale standardized tests
   - performance assessment
   - portfolios
   - student self-evaluation
   - student peer assessment
   - teacher observation
3. **Administer informal and formal assessment methods:**
   - standardized procedures
   - paper-based
   - online

4. **Score selected- and constructed-response format assessments:**
   - multiple-choice
   - matching
   - short-answer
   - essay
   - projects
   - portfolio

5. **Interpret commonly used scores:**
   - raw
   - percentile
   - age/grade-equivalent
   - standard scores (e.g., stanines)

6. **Interpret results for decisions:**
   - placement
   - screening
   - diagnosis
   - monitoring progress (formative)
   - grading (summative)
   - instructional effectiveness
   - program effectiveness

7. **Communicate test results to:**
   - students
   - parents/guardians
   - colleagues

8. **Understand measurement concepts and principles:**
   - validity
   - reliability
References


