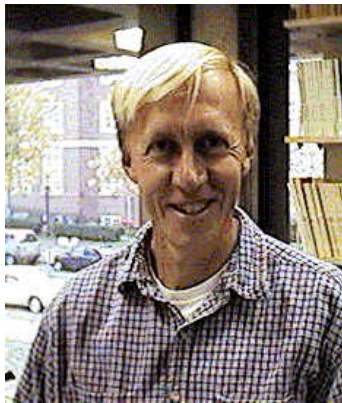


PLENARY SESSION: USING MEASUREMENT TO HELP US UNDERSTAND AND IMPROVE STUDENT LEARNING

Dr. Terry Ackerman
University of North Carolina at Greensboro



Thursday, July 9th, 8:45-10:15am

LOCATION: Meyers Center Auditorium

Dr. Ackerman has a broad educational background which gives him excellent perspective on how measurement can be used from the classroom level on up to institutional and even national levels. This experience began with a BS degree in Mathematics Education from the University of Wisconsin - Madison in 1972. This was followed by an MS degree in Educational Psychology in 1979 and a PhD in Urban Education in 1984, both from the University of Wisconsin-Milwaukee.

Dr. Ackerman's career began as a high school Mathematics teacher for 11 years. During the latter half of that period Dr. Ackerman was working while completing his MS and PhD degrees. After graduating with his PhD in 1984, Dr. Ackerman served as a psychometrician with the American College Testing Program (ACT) until 1989. Following this experience, he took a position as Associate Professor in the Department of Educational Psychology, University of Illinois at Champaign-Urbana, a position he held for 10 years.

Most recently, Dr. Ackerman moved to North Carolina, where he holds the position of Professor (and chair since 2004) in the Department of Educational Research Methodology (ERM) at the University of North Carolina at Greensboro. In this position, Dr. Ackerman has continued a distinguished and long-standing record of service to the profession through a variety of roles. Some of these roles include:

- Secretary of the Psychometric Society (1991 - present)

- Consultant for the Medical College of Wisconsin (1995 - present)
- Chair of the Defense Advisory Committee (2003 - present).
- Technical Advisory Committee for Measured Progress, Inc. (2003 - present).
- Faculty Athletic Representative to the NCAA for UNCG (2004 - present)
- Psychometric Oversight Committee for the American Institute of Certified Public Accountants (2006 - present),
- ETS Technical Advisory Committee for the GRE (2007-present).
- President of the National Council of Measurement in Educational (NCME) (2009-2010).

Dr. Ackerman's research has several focus areas. These include unidimensional and multidimensional item response theory, computerized testing, differential item/test functioning (bias), and cognitive diagnostic testing. Over the past decade he has received funding from several sources for this research:

- 2000-2001 Co-Principal Investigator with Dr. William Stout (Department of Statistics) 1-year grant (\$99,406) with the Law School Admissions Service. Title of research: Modifying Existing Dimensionality Assessment Tools for Use in a CAT Environment
- 2002-2007 Principal Investigator 5-year grant (\$235,840) with the Psychometric Society. Title: Providing a Permanent Office for Administrative Functions with the Psychometric Society.
- 2002-2007 Co-Principal Investigator 5-year grant (\$1,529,102) with the National Science Foundation/U.S. Department of Education, North Carolina Partnership for Improving Mathematics and Science (NC-PIMS).

Session Description

Dr. Ackerman's plenary session talk will include discussion about the foundational issues of validity and reliability in measurement before moving on to a discussion about measuring multiple skills and the effect of dimensionality on a test. For instance, the same test could be given to two different groups of subjects and in one case the data may be unidimensional and in another multidimensional. He will illustrate this with explicit examples and will relate this issue to both test construction and test analysis. In addition, Dr. Ackerman will discuss advantages and disadvantages of different test item types along with examples of how the same format for different item types can be used to measure different levels of understanding.

An outline of the session follows:

- I. Foundational concepts of measurement within the classroom setting
 - A. Reliability: specific examples of test-retest; internal consistency, etc.
 - B. Validity; specific examples of content, criterion-related and construct

- II. Test Construction
 - A. Advantages and Disadvantages of item formats (T/F, M/C, Short Answer)
 - B. Creating items to measure difference levels of cognition

- III. Analyzing test results - software that is available
 - A. Item level statistics
 - B. Test level statistics

- IV. Recycling student test performance to enhance instruction

- V. Reference list by topic

- VI. Questions/discussion