Daniel Bowen
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- Proven leader and collaborator with over 20 years of experience in the testing industry.
- Highly skilled psychometrician trained in measurement, applied statistics, evaluation, and cognitive psychology.
- Experienced communicator, facilitator, and presenter with expertise in tailoring content and delivery to various stakeholders.
- Excellent writer with the ability to communicate sophisticated ideas with clarity.
- Creative thinker with a passion for using data to inform and improve continual development.
- Seasoned user of SAS 9.4, Winsteps, R, Python, Plotly, ggplot2, MS Word/Excel/PowerPoint, assorted psychometric and statistical software (SPSS, flexMIRT, LISREL, BB-CLASS, etc.)
- Winner, 2021 *Educational Measurement: Issues and Practice* (EM:IP) Cover Graphic/Data Visualization Competition (Person infit density contour (2022, Fall). *Educational Measurement: Issues and Practice, 41*, 3, p.4).

EDUCATION

University of North Carolina at Greensboro, Greensboro, NC   2012–2018
Completed Ph.D. coursework in Educational Research Methodology; highlights include:
- *Assessment Engineering*, *Computer-Based Testing*, *Equating*, and *Independent Study in Automatic Item Generation* with Dr. Richard M. Luecht
- *Validity and Validation* with Dr. Micheline Chalhoub-Deville
- *Structural Equation Modeling* and *Diagnostic Classification Modeling* with Dr. Robert Henson
- *Item Response Theory* and *Advanced Item Response Theory* with Dr. Randy Penfield

University of North Carolina at Chapel Hill, Chapel Hill, NC   2007–2011
M.Ed., Educational Psychology and Measurement Evaluation
- Advisor: Dr. Gregory J. Cizek

University of North Carolina at Wilmington, Wilmington, NC   1998–2001
B.S., Operations Management and Information Systems

RELEVANT PROFESSIONAL EXPERIENCE

Measurement Incorporated Durham, NC   2002–2022
Lead Psychometrician   *2014–2022*
Lead psychometrician for assessments under contract to the New Jersey Department of Education, including the New Jersey Start Strong Assessment in Science, New Jersey Student Learning Assessment–Science (NJ SLA–S), New Jersey Assessment of Skills and Knowledge (NJ ASK), High School Proficiency Assessment (HSPA), and Biology Competency Test (BCT).
- Conducted all psychometric analyses (item calibration, item- and person-fit statistics, propensity-score matching, Differential Item Functioning, equating, score table construction, etc.).

- Authored official reports, including annual Technical Reports, as well as periodic reports of project-specific studies (equating, standard setting, item bank analysis, test irregularity, etc.).
- Conducted annual statistical review and provided consequent feedback to guide future item development.
- Collaborated and communicated both internally (with management and SMEs) and externally (with Department of Education personnel, Technical Advisory Committee members, and project subcontractors).
- Provided expert input into score report development and production.
- Anticipated and designed arrays of possible solutions for the impact on educational testing of unforeseen challenges, most recently COVID-19.
- Constructed multiple unique operational test forms annually to specific content and statistical criteria.
- Developed creative means of graphic display to facilitate interpretation of testing data for internal and external audiences.
- Designed standards-validation approach and process for the NJ SLA–S.

Psychometrician   *2014–2022*
- Provided psychometric expertise and backup as needed on large-scale, high-stakes assessment contracts other than New Jersey.
- Most recently, prepared all relevant materials for the Louisiana LEAP Connect standard-setting and standards-validation meetings, planned all psychometric analyses, and scaffolded the education of psychometric colleagues unfamiliar with standard-setting methodologies and best practice.

Project Manager   *2013–2014*
Upon direct request of Senior Vice President, served as Project Manager for the Australian Curriculum Assessment and Reporting Authority, National Assessment and Surveys Online Program (NASOP) Research Study: Innovative (Technically Enhanced) Item Development. Led a team of content specialists and assessment technology experts and provided oversight for research-oriented projects. Acted as the chief liaison with clients in Australia. Oversaw and monitored the planning, scheduling, progress, and quality of all aspects of the project.

Research Associate   *2008–2014*
Assisted in psychometric analyses of large-scale educational assessments. Prepared materials for item review, evaluated test fairness; designed and implemented test equating; conducted standard setting data analyses; calibrated IRT item parameters; evaluated IRT model fit statistics; calculated and evaluated classical test statistics; created samples via propensity score matching; collected and evaluated validity evidence; designed and implemented research studies. Calculated and interpreted statistics including: DIF statistics (Mantel-Haenzsel, Liu-Agresti, and Logistic Regression), correlations, fit indices, reliability coefficients, generalizability coefficients, and anchor item stability. Wrote technical, standard-setting, and equating reports as well as standard-setting and research proposals.

Scoring Director   *2005–2008*
Directed and coordinated project activities for performance assessment scoring efforts. Monitored scoring contract obligations and costs. Oversaw rangefinding activities and item evaluation processes, developed and refined scoring criteria, conducted test administration training, and approved all training materials. Supervised and selected scoring staff and evaluated scoring staff performance. Developed project documentation.

Team Leader   *2004–2005*
Trained and provided direct supervision of teams of 10–12 Readers who scored student performance assessment responses. Monitored the administration of team training sets, discussed training responses

with particular emphasis on incorrectly scored responses and/or useful or unusual responses, fielded Reader questions, and managed timing in training sessions. Monitored Readers to maintain validity and reliability and retrained as necessary; provided one-on-one feedback; resolved discrepant scores assigned by Readers; and monitored Reader attendance, production, and general work habits.

Reader   *2002–2006*
Learned scoring criteria through item- or prompt-specific training and evaluated student performance assessment responses. Maintained a high level of consistency and production through feedback from scoring leadership. Recognized unusual student approaches to forward to scoring leadership.

PROFESSIONAL AFFILIATIONS

- American Educational Research Association, Member (2009–present)
- National Council of Measurement in Education, Member (2008–present)
- Beta Gamma Sigma honor society, Member (Inducted 1999)

REPRESENTATIVE PAPERS AND PRESENTATIONS

Bunch, M.B. and Bowen, D.F. (2022, April). *The future of standard setting.* Training session conducted at the annual meeting of the National Council on Measurement in Education, San Diego, CA.

Bowen, D. F. (2013, May). *The effects of controlling for distributional differences on the Jodoin-Gierl logistic regression DIF classification method.* Paper presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Bowen, D. F. and Joldersma, K. J. (2011, May). *The effects of controlling for distributional differences on the Mantel-Haenszel procedure in DIF studies for test translations.* Paper presented at the annual meeting of the National Council on Measurement in Education, New Orleans, LA.

Karkee, T. B., Reid, W. K., and Bowen, D. F. (2011, May). *Does removing anchor items based on statistical criteria impact scale stability and student performance? A Rasch model perspective.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Cizek, G. J., Bowen, D. F., and Church, K. S. (2010). Sources of validity evidence for educational and psychological tests: A follow-up study. *Educational and Psychological Measurement*, 70, 732–743.

Cizek, G. J., Bowen, D. F., and Church, K. S. (2010, May). *Sources of validity evidence for educational and psychological tests: A follow-up study.* Paper presented at the annual National Council on Measurement in Evaluation meeting, Denver, CO.

Joldersma, K. J. and Bowen, D. F. (2010, May). *Application of propensity models In DIF studies to compensate for unequal ability distributions.* Paper presented at the annual National Council on Measurement in Evaluation meeting, Denver, CO.

Joldersma, K. J. and Bowen, D. F. (2009, November). *Application of propensity models in DIF studies to compensate for unequal ability distributions.* Paper presented at the annual East Coast Organization of Language Testers meeting, Washington, DC.

References available upon request.