2016 Annual Meeting, April 7-11
Washington, DC
Renaissance Washington, DC Downtown Hotel

Schedule by Session Title and First Author

Don’t miss Richard Patz’s Presidential Address:
“Education and the Measurement of Behavioral Change”
on Sunday, April 10 at 9:00 AM
Saturday, April 9, 2016: Invited Sessions

8:15 AM-10:15 AM
NCME Book Series Symposium: The Challenges to Measurement in an Era of Accountability
Session Chair: Henry Braun
Session Discussants: Suzanne Lane and Scott Marion
Michael Kolen, Kadriye Ercikan, Pamela Kaliski, Meg Malone, Paul Sandrock, Scott Shuler, Tim Brophy, Robert Sabol, Daisy Rutstein, Britte Cheng, Nathaniel Brown

2:15 PM-3:45 PM
Assessing the assessments: Measuring the quality of new college- and career-ready assessments
Morgan Polikoff, Tony Alpert, Bonnie Hain, Brian Gill, Carrie Conaway, Donna Matovinovic

Sunday, April 10, 2016: Invited Sessions

10:35 AM-12:05 PM
Career Award: Do Educational Assessments Yield Achievement Measurements
Mark Reckase

Should the NAEP Mathematics Framework be revised to align with the Common Core State Standards?
Bill Bushaw, Michael P Cohen, Chester E Finn, Terry Mazany

Monday, April 11, 2016: Invited Sessions

8:15 AM-10:15 AM
NCME Book Series Symposium: Technology and Testing
Session Chair: Randy Bennett

Recent Advances in Quantitative Social Network Analysis in Education
Tracy Sweet, Mengxiao Zhu, Qiwen Zheng, Sam Adhikari, I-Chien Chen, Beau Dabbs

10:35 AM-12:05 PM
Hold the Presses! How Measurement Professionals can Speak More Effectively with the Press and the Public
Co-Chairs: Kristen Huff, Laurie Wise and Lori Crouch
Caroline Hendrie, David Hoff, Andrew Ho, Anya Kamnetz, Sarah Sparks

12:25 PM-1:55 PM
The Every Students Succeeds Act (ESSA): Implications for measurement research and practice
Martin West

Please note: Only the first author is listed, all authors will appear in the final program.
2:15 PM-3:45 PM
NAAD Session: Learning from History: How K-12 Assessment Will Impact Student Learning Over the Next Decade
Mary E Yakimowski, Kenneth J Daly III, Dale Whittington, Lou Fabrizio, Carlos Martinez, Jr, James H McMillan, Eva Baker

Implications of Computer-Based Testing for Assessing Diverse Learners: Lessons Learned from the Consortia
Session Discussant: Bob Dolan
Carsten Wilmes, Tony Alpert, Trinell Bowman, Margaret Ho, Rachel Quenemoen, Russell Swinburne Romine

4:05 PM -6:05 PM
On the use and misuse of latent variable scores
Anders Skrondal

Saturday, April 9, 2016: Coordinated Sessions

8:15 AM-10:15 AM
Collaborative Problem Solving Assessment: Challenges and Opportunities

Harnessing Technological Innovation in Assessing English Learners: Enhancing Rather Than Hindering
Jennifer Renn, Megan Montee, David MacGregor, Jennifer Norton

Enacting a Learning Progression Design to Measure Growth
Derek Briggs, Jere Confrey, Scott Marion, Joseph Martineau

10:35 AM -12:05 PM
The End of Testing as We Know it?

Fairness and Machine Learning for Educational Practice

Item Difficulty Modeling: From Theory to Practice
Isaac Bejar, Susan Embretson, Edith Graf

12:25 PM -1:55 PM
Opting out of testing: Parent rights versus valid accountability scores
Michelle Craft, Tim Vansickle, Derek Brown

Building toward a validation argument with innovative field test design and analysis
Catherine Welch, Tim Davey, LeBeau

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Towards establishing standards for spiraling of contextual questionnaires in large-scale assessments
Paul Jewsbury, David Kaplan, Matthias von Davier

Estimation precision of variance components: Revisiting generalizability theory
Jinming Zhang, Joe Grochowalski, Chih-Kai Lin

2:15 PM - 3:45 PM
Some psychometric models for learning progressions
Mark Wilson, David Torres Irribarra, In-Hee Choi

Multiple Perspectives on Promoting Assessment Literacy for Parents
Cindy Walker, Sharyn Rosenberg, Maria Donata Vasquez-Colina

4:05 PM - 6:00 PM
Do Large Scale Performance Assessments Influence Classroom Instruction? Evidence from the Consortia
Marty McCall, Ellen Forte, Marianne Perie, Kenji Hakuta, Dorry Kenyon

Applications of Latent Regression to Modeling Student Achievement, Growth, and Educator Effectiveness
Benjamin Shear, Katherine Castellano, J.R. Lockwood

Jail Terms for Falsifying Test Scores: Yes, No or Uncertain?

Tablet Use in Assessment
Nicholas Cottrell, Alexis Lopez, Laurie Davis, Guangming Ling

Sunday, April 10, 2016: Coordinated Sessions

10:35 AM - 12:05 PM
Beyond process: Theory, policy, and practice in standard setting
Lori Nebelsick-Gullet, Joseph Martineau, Juan d’Brot, Karla Égan

Exploring Timing and Process Data in Large-Scale Assessments
Samuel Greiff, Qiwei He, Zhuangzhuang Han, Ralph Carstens

Psychometric Challenges with the Machine Scoring of Short-Form Constructed Responses
Allan Cohen, Xinhui Xiong, Susan Lottridge

2:45 PM - 4:15 PM
Challenges and Opportunities in the Interpretation of the Testing Standards
Wayne Camara, Erika Hall, Chad Buckendahl, Ellen Forte

Applications of Combinatorial Optimization in Educational Measurement

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Coordinated Sessions

4:35 PM -6:05 PM
Advances in Balanced Assessment Systems: Conceptual framework, informational analysis, application to accountability
Brian Gong, Rajendra Chattergoon, Phonraphee Thummaphan, Carla Evans

Minimizing Uncertainty: Effectively Communicating Results from CDM-based Assessments
Laine Bradshaw, Tasmin Dhaliwal, Kristen DiCerbo, Valerie Shute

Overhauling the SAT: Using and Interpreting Redesigned SAT Scores
Jack Buckley, Sherral Miller, Pamela Kaliski, Jeff Wyatt, Emily Shaw

Quality Assurance Methods for Operational Automated Scoring of Essays and Speech
Raghuveer Kanneganti, Guangming Ling, Claudia Leacock, Su-Youn Yoon

Monday, April 11, 2016: Coordinated Sessions

8:15 AM-10:15 AM
Exploring Various Psychometric Approaches to Report Meaningful Subscores
Jon Cohen, Likun Hou, Megan Kuhfeld, Yi Du

From Items to Policies: Big Data in Education
José González-Brenes, Thomas McTavish, William Lorié, Kathy McKnight, Antonio Moretti

Methods and Approaches for Validating Claims of College and Career Readiness
Stephen Sireci, Wayne Camara, Catherine Welch, Thanos Patelis

10:35 AM -12:05 PM
Challenges and solutions in the operational use of automated scoring systems
Ji An, Heather Buzick, Xin Chen, Jay Breyer

Novel Models to Address Measurement Errors in Educational Assessment and Evaluation Studies
Li Cai, Kilchan Choi, Michael Seltzer, Kilchan Choi

Mode Comparability Investigation of a CCSS based K-12 Assessment
Jong Kim, Karen Barton, Dong-In Kim, Marc Julian

12:25 PM -1:55 PM
Career Paths in Educational Measurement: Lessons Learned by Accomplished Professionals

Recent Investigations and Extensions of the Hierarchical Rater Model
Brian Junker, Mark Bond, Ricardo Nieto, Peter Conforti

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The Validity of Scenario-Based Assessment: Empirical Results
John Sabatini, Randy Bennett, Edys Quellmalz

2:15 PM -3:45 PM
Psychometric Issues on the Operational New-Generation Consortia Assessments
Yi Du, Shudong Wang, Yanming Jiang

Issues and Practices in Multilevel Item Response Models
Chen Li, Xiaying Zheng, Megan Kuhfeld, Ji Seung Yang, Xue Zhang

Psychometric Issues in Alternate Assessments
Chao Xie, Okan Bulut (Alicia Cascallar Award Winner 2016), Hyesuk Jang, Ming Lei

Recommendations for Addressing the Unintended Consequences of Increasing Examination Rigor
Phil Canto, Süleyman Olgar, Onder Koklu

4:05 PM -6:05 PM
Fairness Issues and Validation of Non-Cognitive Skills
EDYNN Sato, Thanos Patelis, Maria Elena Oliveri, Kurt Geisinger

Thinking about your Audience in Designing and Evaluating Score Reports
Amanda Clauser, Priya Kannan, Amy Clark, Richard Tannenbaum, Jenny Rankin

Use of automated tools in listening and reading item generation
Kathleen Sheehan, Peter Foltz, Anastassia Loukina, Chong Min Lee, Swapna Somasundaran

Saturday, April 9, 2016: Individual Sessions

8:15 AM -10:15 AM
Session Title: How can assessment inform classroom practice?
Discussant: Priya Kannan
What Score Report Features Promote Accurate Remediation? Insights from Cognitive Interviews
Francis Rick

Evaluating the Degree of Coherence between Instructional Targets and Measurement Models
Lauren Deters

Modeling the Instructional Sensitivity of Polytomous Items
Alexander Naumann

Growth Sensitivity and Standardized Assessments: New Evidence on the Relationship
Shalini Kapoor

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Individual Sessions

Using Regression-Based Growth Models to Inform Learning with Multiple Assessments
Ping Yin

Session Title: Testlets and Multidimensionality in Adaptive Testing
Discussant: Chun Wang
Measuring Language Ability of Students with Compensatory MCAT: A Post-Hoc Simulation Study
Burhanettin Özdemir

Multidimensional CAT classification method for composite scores
Lihua Yao

Two Bayesian Online Calibration Methods in Multidimensional Computerized Adaptive Testing
Ping Chen

Item Selection in Testlet-Based CAT
Mark Reckas

Effects of Testlet Characteristics on Estimating Abilities in Testlet-based CAT
Seohong Pak

Computerized Mastery Testing (CMT) without the use of Item Response Theory
Sunhee Kim

Session Title: Methods for Examining Local Item Dependence and Multidimensionality
Discussant: Ki Matlock
Examining Unidimensionality with Parallel Analysis on Residuals
Tianshu Pan

A Conditional IRT model for Directional Local Item Dependency in Multipart Items
Dandan Liao

Fit Index Criteria in Confirmatory Factor Analysis Models used by Measurement Practitioners
Anne Corinne Huggins-Manley

Multilevel Bi-Factor IRT Models for Wording Effects
Xiaorui Huang

A Generalized Multinomial Error Model for Tests That Violate Conditional Independence Assumptions
Benjamin Andrews

Both Local Item Dependencies and Cut-point Location Impact Examinee Classifications
Jonathan Rubright

Please note: Only the first author is listed, all authors will appear in the final program.
10:35 AM -12:05 PM
Session Title: Growth and Vertical Scales
Discussant: Anna Topczewski
Estimating vertical scale drift due to repetitious horizontal equating
Emily Ho

An EIRM Approach for Studying Latent Growth in Alphabet Knowledge Among Kindergarteners
Xiaoxin Wei

Vertical Scaling and Item Location: Generalizing from Horizontal Linking Designs
Stephen Murphy

Predictive Accuracy of Model Inferences for Longitudinal Data with Self-Selection
Tyler Matta

Session Title: Perspectives on Validation
Discussant: John Poggio
Using a Theory of Action to Ensure High Quality Tests
Cathy Wendler

Teacher Evaluation Systems: Mapping a Validity Argument
Tia Sukin

Validity Evidence to Support Alternate Assessment Score Uses: Fidelity and Response Processes
Meagan Karvonen

Communicating Psychometric Research to Policymakers
Andrea Lash

Session Title: Model Fit
Discussant: Matthew Johnson
Evaluation of Item Response Theory item-fit indices
Adrienne Sgammato

Rethinking Complexity in Item Response Theory Models
Wes Bonifay

Measures for Identifying Non-monotonically Increasing Item Response Functions
Nazia Rahman

Evaluation of Limited Information IRT Model-fit Indices Applied to Complex Item Samples
John Donoghue

Please note: Only the first author is listed, all authors will appear in the final program.
**Session Title: Simulation- and Game-based Assessments**

**Discussant:** José Pablo González-Brenes

Aligning Process, Product and Survey Data: Bayes Nets for a Simulation-based Assessment  
*Tiago Caliço*

Practical consequences of static, dynamic, or hierarchical Bayesian networks in game-based assessments  
*Maria Bertling*

Impact of Feedback within Technology Enhanced Items on Perseverance and Performance  
*Stacy Hayes*

Framework for Feedback and Remediation with Electronic Objective Structured Clinical Examinations  
*Hollis Lai*

**Session Title: Test Security and Cheating**

**Discussant:** Dmitry Belov

Applying Three Methods for Detecting Aberrant Tests to Detect Compromised Items  
*Yu Zhang*

Detecting Two Patterns of Cheating with a Profile of Statistical Indices  
*Gregory Hurtz*

Integrating Digital Assessment Meta-data for Psychometric and Validity Analysis  
*Elizabeth Stone*

How Accurately Can We Detect Erasures?  
*Han Yi Kim*

**12:25 PM -1:55 PM**

**Session Title: Sensitivity of Value-Added Models**

**Discussant:** Katherine Castellano

Cohort and Content Variability in Value-Added Model School Effects  
*Daniel Anderson*

Value-Added Modelling Considerations for School Evaluation Purposes  
*Lucy Lu*

Implications of Differential Item Quality for Test Scores and Value-Added Estimates  
*Robert Meyer*

Bradley Hanson Award 2016: Sun-Joo Cho  
Bradley Hanson Award 2015: Chaitanya Ramineni

*Please note: Only the first author is listed, all authors will appear in the final program.*
**Session Title: Item and Scale Drift**  
**Discussant:** Jonathan Weeks  
The Impact of Item Parameter Drift in Computer Adaptive Testing (CAT)  
*Nicole Risk*  
Practice Differences and Item Parameter Drift in Computer Adaptive Testing  
*Beyza Aksu Dunya*  
Investigating Linear and Nonlinear Item Parameter Drift with Explanatory IRT Models  
*Luke Stanke*  
Quality Control Models for Tests with a Continuous Administration Mode  
*Yuyu Fan*  
Ensuring test fairness through monitoring the anchor test and covariates  
*Marie Wiberg*  

**Session Title: Cognitive Diagnostic Model Extensions**  
**Discussant:** Larry DeCarlo  
A Polytomously-scored DINA model for Graded Response Data  
*Dongbo Tu*  
Information matrix estimation procedures for cognitive diagnostic model  
*Tao Xin*  
Higher-Order Cognitive Diagnostic Models for Polytomous Latent Attributes  
*Peida Zhan*  
Incorporating Latent and Observed Predictors in Cognitive Diagnostic Models  
*Yoon Soo Park*  

**Electronic Board Session 1**  
Examination of Over-Extraction of Latent Classes in the Mixed Rasch Model  
*Sedat Sen*  
Identifying a Credible Reference Variable for Measurement Invariance Testing  
*Cheng-Hsien Li*  
Using Partial Classification of Respondents to Reduce Classification Error in Mixture IRT  
*Youngmi Cho*  

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Parameter Recovery in Multidimensional Item Response Theory Models under Complexity and Nonormality
Stephanie Underhill

Psychometric Properties of Technology-Enhanced Item Formats
Ashleigh Crabtree

Using Technology-Enhanced Items to Measure Fifth Grade Geometry
Jessica Masters

A Multilevel MT-MM Approach for Estimating Trait Variance across Informant Types
Tim Konold

A Validation Study of the Learning Errors and Formative Feedback (LEAFF) Model
Wei Tang

Automatic Flagging of Items for Key Validation
Füsun Şahin

Evaluating the robustness of multidimensional IRT (MIRT) based growth modeling
Hanwook Yoo

Standard errors of measurement for group-level SGP with bootstrap procedures
Jinah Choi

Vertical Scaling of Test with Mixed Item Formats Including Technology Enhanced Items
Dong-In Kim

Full-information Bifactor Growth Models and Derivatives for Longitudinal Data
Ying Li

The Pseudo-Equivalent Groups Approach as an Alternative to Common-Item Equating
Sooyeon Kim

Equateing with a Heterogeneous Target Population in the Common-item Design
Ru Lu

Examining the reliability of rubric scores to assess score report quality
Mary Roduta Roberts

Accuracy of Angoff Method Item Difficulty Estimation at Specific Cut Score Levels
Tanya Longabach

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A Passage-based Approach to Setting Cutscores on ELA Assessments
*Marianne Perie*

Psychometric Characteristics of Technology Enhanced Items from a Computer-Based Interim Assessment Program
*Nurliyana Bukhari*

Exposure Control for Response Time-Informed Item Selection and Estimation in CAT
*Justin Kern*

Monitoring item drift using stochastic process control charts
*Hongwen Guo*

Reporting Subscores Using Different Multidimensional IRT Models in Sequencing Adaptive Testing
*Jing-Ru Xu*

Multidimensional IRT Model Estimation with Multivariate Non-normal Latent Distributions
*Tongyun Li*

Stochastic Ordering of the Latent Trait Using the Composite Score
*Feifei Li*

**2:15 PM -3:45 PM**

**Session Title: Equating Mixed-Format Tests**

**Discussant:** Won-Chan Lee

Classification Error under Random Groups Equating Using Small Samples with Mixed-Format Tests
*Ja Young Kim*

Sample Size Requirement for Trend Scoring in Mixed-Format Test Equating
*Qing Yi*

Comparing IRT-based and CTT-based Pre-equating in Mixed-Format Testing
*Meichu Fan*

Equating Mixed-Format Tests using Automated Essay Scoring (AES) System Scores
*Süleyman Olgar*

**Session Title: Standard Setting**

**Discussant:** Susan Davis-Becker

Exploring the Influence of Judge Proficiency on Standard-Setting Judgments for Medical Examinations
*Michael Peabody*
Setting Cut Scores on the AP Seminar Course and Exam Components
Deanna Morgan

Interval Validation Method for Setting Achievement Level Standards for Computerized Adaptive Tests
William Insko

The Use of Web 2.0 Tools in a Bookmark Standard Setting
Jennifer Lord-Bessen

**Session Title: Diagnostic Classification Models: Applications**

**Discussant:** Jonathan Templin

Assessing Students’ Competencies Through Cognitive Diagnosis Models: Validity and Reliability Evidences
Miguel Sorrel

Examining Effects of Pictorial Fraction Models on Student Test Responses
Angela Broaddus

Evaluation of Learning Map Structure Using Diagnostic Cognitive Modeling and Bayesian Networks
Feng Chen

Jasom Millman Promising Measurement Scholar Award 2015: Laine Bradshaw

**Session Title: Advances in IRT Modelling and Estimation**

**Discussant:** Mark Hansen

Estimation of Mixture IRT Models from Nonnormally Distributed Data
Tugba Karadavut

Two-Tier Item Factor Models with Empirical Histograms as Nonnormal Latent Densities
Hyesuk Jang

Examining performance of the MH-RM algorithm with the 3PL multilevel MIRT model
Bozhidar Bashkov

Expectation-Expectation-Maximization: a feasible mixture-model-based MLE algorithm for the three-parameter logit model
Chanjin Zheng

4:05 PM -6:05 PM

**Session Title: Test Design and Construction**

**Discussant:** Chad Buckendahl

Potential Impact of Section Order on an Internet Based Admissions Test Scoring
Naomi Gafni

**Please note: Only the first author is listed, all authors will appear in the final program.**
Automated Test-Form Generation with Constraint Programming (CP)
Jie Li

An item-matching heuristic method for a complex multiple forms test assembly problem
Pei-Hua Chen

The Effect of Foil-Reordering and Minor Editorial Revisions on Item Performance
Tingting Chen

Is Pre-Calibration Possible? A conceptual AIG framework, model, and empirical investigation
Shauna Sweet

NCME Annual Award 2016: Mark Gierl & Hollis Lai
NCME Annual Award 2015: Sandip Sinhiray, Shelby J. Haberman and Kyong Hee Chon

Session Title: Topics in Multistage and Adaptive Testing
Discussant: Jonathan Rubright
A Top-down Approach to Designing a Computerized Multistage Test
Xiao Luo

Comparison of Non-parametric Routing Methods with IRT in Multistage Testing Design
Evgeniya Reshetnyak

A Modified Procedure in Applying CATS to Allow Unrestricted Answer Changing
Zhongmin Cui

The Expected Likelihood Ratio in Computerized Classification Testing
Steven Nydick

A Comparison of the Pretest Item Calibration Procedures in CAT
Xia Mao

Pretest Item Selection and Calibration under Computerized Adaptive Testing
Shichao Wang

Using Off-Grade Items in Adaptive Testing —a Differential Item Functioning Approach
Shuqin Tao

Session Title: Cognitive Diagnosis Models: Exploration and Evaluation
Discussant: Laine Bradshaw
Bayesian Inferences of Q-matrix with Presence of Anchor Items
Xiang Liu

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An Exploratory Approach to the Q-matrix via Bayesian Estimation  
*Lawrence DeCarlo*

Parametric or Nonparametric—Evaluating Q-matrix Refinement Methods for DINA and DINO Models  
*Yi-Fang Wu*

Comparing Attribute-level Reliability Estimation Methods in Diagnostic Assessments  
*Chunmei Zheng*

Estimation of Diagnostic Classification Models without Constraints: Issues with Class Label Switching  
*Hongling Lao*

Conditions Impacting Parameter and Profile Recovery under the NIDA Model  
*Yanyan Fu*

Sequential Detection of Learning Multiple Skills in Cognitive Diagnosis  
*Sangbeak Ye*

**Electronic Board Session 2**  
Response Styles Adjustments in Cross-Cultural Data Using the Mixture PCM IRT Model  
*Bruce Austin*

Using Differential Item Functioning to Test for Inter-Rater Reliability in Educational Testing  
*Sakine Gocer Sahin*

Incorporating Expert Priors in Estimation of Bayesian Networks for Computer Interactive Tasks  
*Johnny Lin*

A Multidimensional Rater Effects Model  
*Richard Schwarz*

Exploring Clinical Diagnosis Process Data with Cluster Analysis and Sequence Mining  
*Feiming Li*

Validity Evidence for a Writing Assessment for Students with Significant Cognitive Disabilities  
*Russell Swinburne Romine*

Alternative Approaches for Comparing Test Score Achievement Gap Trends  
*Benjamin Shear*

The Implications of Reduced Testing for Teacher Accountability  
*Jessica Alzen*

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Examination of the Constructs Assessed by Published Tests of Critical Thinking  
Jennifer Kobrin

The False Discovery Rate Applied to Large-Scale Testing Security Screenings  
Tanesia Beverly

The Impact of Ignoring Multiple-Group Structure in Testlet-Based Tests on Ability Estimation  
Ming Li

Reconceptualising Validity Incorporating Evidence Of User Interpretation  
Timothy O’Leary

Comparing Imputation Methods for Trait Estimation Using the Rating Scale Model  
Christopher Runyon

Single and Double Linking Designs Accessed by Population Invariance  
Yan Huo

Equating Mixed-format Tests Using a Simple-Structure MIRT model under a CINEG design  
Jiwon Choi

Pre-equating or Post-equating? Impact of Item Parameter Drift  
Wenchao Ma

A Comparative Study on Fixed Item Parameter Calibration Methods  
Keyu Chen

Examining Various Weighting Schemes Effect on Examinee Classification Using a Test Battery  
Qing Xie

Module assembly for Logistic Positive Exponent model-based Multistage Adaptive Testing  
Thales Ricarte

Online Calibration Pretest Item Selection Design  
Rui Guo

Online multistage intelligent selection method for CD-CAT  
Fen LUO

Data-Driven Simulations of False Positive Rates for Compound DIF Inference Rules  
Quinn Lathrop

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Simultaneous evaluation of DIF and its sources using hierarchical explanatory models

**William Skorupsk**

### Sunday, April 10, 2016: Individual Sessions

**10:35 AM - 12:05 PM**

**Session Title: Advances in Equating**

**Discussant:** Benjamin Andrews

- Bifactor MIRT Observed Score Equating of Testlet-Based Tests with Nonequivalent Groups
  **Mengyao Zhang**

  Hierarchical Generalized Linear Models (HGLMs) for Testlet-Based Test Equating
  **Ting Xu**

  The Local Tucker Method and its Standard Errors
  **Sonya Powers**

  Using Criticality Analysis to Select Loglinear Smoothing Models
  **Arnond Sakworawich**

### Session Title: Novel Approaches for the Analysis of Performance Data

**Discussant:** William Skorupski

- Combining a mixture IRT model with a nominal random item mixture model
  **Hye-Jeong Choi**

  Bayesian Estimation of Null Categories in Constructed-Response Items
  **Yong He**

  Crossed random-effects multidimensional IRT models for Performance Assessments with Multiple Raters
  **Larry Thomas**

  The FAST model: Integrating Learning Science and Measurement
  **José González-Brenes**

Brenda Loyd Dissertation Award Presentation 2016: Yuanchoa Emily Bo
Brenda Loyd Dissertation Award 2015: Ronli Diakow

**Electronic Board Session 3**

Multilevel IRT: When is Local Independence Violated?
**Christine DeMars**
The Higher-Order IRT Model for Global and Local Person Dependence  
*Kuan-Yu Jin*

A Multidimensional Item Response Model for Local Dependence and Content Domain Structure  
*Yue Liu*

Distinguishing Struggling Learners from Unmotivated Students in an Intelligent Tutoring System  
*Kimberly Colvin*

Using Bayesian Networks for Prediction in a Comprehensive Assessment System  
*Nathan Dadey*

Comparability within Computer-Based Assessment: Does Screen Size Matter?  
*Jie Chen*

Cognitive Analysis of Responses Scored Using a Learning Progression for Proportional Reasoning  
*Edith Graf*

Modeling Acquiescence and Extreme Response Styles and Wording Effects in Mixed-Format Items  
*Hui-Fang Chen*

Accessibility: Consideration of the Learner, the Teacher, and Item Performance  
*Bill Herrera*

Examining the Growth and Achievement of STEM Majors Using Latent Growth Models  
*Heather Rickels*

Modeling NCTM and CCSS 5th Grade Math Growth Estimates and Interactions  
*Dan Farley*

Norming and Psychometric Analysis for a Large-Scale Computerized Adaptive Early Literacy Assessment  
*James Olsen*

The Impact of Ignoring the Multiple-Group Structure of Item Response Data  
*Yoon Jeong Kang*

Influential Factors on College Retention based on Tree Models and Random Forests  
*Chansoon Lee*

Detecting Non-effortful Responses to Short-Answer Items  
*Ruth Childs*
Item Difficulty Modeling for an ELL Reading Comprehension Test Using LLTM  
*Lingyun Gao*

The Effect of Unmotivated Test-takers on Field Test Item Calibrations  
*H. Jane Rogers*

The Nonparametric Method To Analyze Multiple-Choice Items: Using Hamming Distance Method  
*Shibei Xiang*

Diagnostic Classification Modeling in Student Learning Progression Assessment  
*Ruhan Circi*

Nonparametric Diagnostic Classification Analysis for Testlet-based Tests  
*Shuying Sha*

An Application of Second-Order Growth Mixture Model for Educational Longitudinal Research  
*Xin Li*

Confirmatory Factor Analysis of TIMSS’ Mathematics Attitude Items with Recommendations for Change  
*Thomas Hogan*

Controlling for Multiplicity in Structural Equation Models  
*Michael Zweifel*

**2:45 PM- 4:15 PM**  
**Session Title: Psychometrics of Teacher Ratings**  
**Discussant:** Tia Sukin

Psychometric Characteristics and Item Category Maps for a Student Evaluation of Teaching  
*Patrick Meyer*

Psychometric Stability of Tripod Student Perception Surveys with Reduced Data  
*Catherine McClellan*

Does the ‘Type’ of Rater Matter when Evaluating Special Education Teachers?  
*Janelle Lawson*

Measuring Score Consistency between Teacher and Reader Scored Grades  
*Yang Zhao*
**Session Title: Multidimensionality**  
**Discussant:** Mark Reckase  
An Index for Characterizing Construct Shift in Vertical Scales  
*Jonathan Weeks*  

Multidimensional test assembly of parallel test forms using a Kulback-Leibler Information Index  
*Dries Debeer*  

Evaluating the Use of Unidimensional IRT Procedures for Multidimensional Data  
*Wei Wang*  

Classification Consistency and Accuracy Indices for Multidimensional Item Response Theory  
*Wenyi Wang*  

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**Session Title: Validating “Noncognitive”/Nontraditional Constructs I**  
**Discussant:** Jennifer Kobrin  
Improving the NAEP SES Measure: Can NAEP Learn from Other Survey Programs?  
*Young Yee Kim*  

Investigating SES Using the NAEP-HSLS Overlap Sample  
*Burhan Ogut*  

Rethinking the Measurement of Students’ Beliefs About Intelligence  
*Andrew Maul*  

Validating Relationships Among Mathematics-related Self Efficacy, Self Concept, Anxiety and Achievement Measures  
*Madhabi Chatterji*  

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**Session Title: Invariance**  
**Discussant:** Ha Phan  
The Impact of Measurement Noninvariance in Longitudinal Item Response Modeling  
*In-Hee Choi*  

Measurement Invariance in International Large-scale Assessments: Ordered-Categorical Outcomes in a Multidimensional Context  
*Dubravka Svetina*  

*Carrie Morris*  

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Population Invariance Of Equating Functions Across Subpopulations for a Large Scale Assessment
Lucy Amati

Session Title: Detecting Aberrant Response Behaviors
Discussant: John Donoghue
Methods that Incorporate Response Times and Responses for Excluding Data Irregularities
Heru Widiatmo

Online Detection of Compromised Items with Response Times in CAT
Hyeon-Ah Kang

Detecting Examinee Preknowledge of Items: A Comparison of Methods
Xi Wang

Development of an R package for Statistical Analysis in Test Security
Jiyoon Park

4:35 PM - 6:05 PM
Session Title: Student Growth Percentiles
Discussant: Damian Betebenner
Jason Millman Promising Measurement Scholar Award Presentation 2016: Addressing Shortcomings in Student Growth Percentiles for Evaluating Educator Performance
Katherine Castellano

Cluster Growth Percentiles: An Alternative to Aggregated Student Growth Percentiles
Scott Monroe

Evaluating Student Growth Percentiles: Perspective of Test-Retest Reliability
Johnny Denbleyker

Session Title: Equating: From Theory to Practice
Discussant: Ye Tong
Similarities between Equating Equivalents Using Presmoothing and PostsMOOTHING
Hyung Jin Kim

Stability of IRT Calibration Methods for the Common-Item Nonequivalent Groups Equating Design
Yujin Kang

Subscore Equating and Reporting
Euijin Lim

Please note: Only the first author is listed, all authors will appear in the final program.
On the Effect of Varying Difficulty of Anchor Tests on Equating Accuracy  
Irina Grabovsky

**Session Title: Issues in Ability Estimation and Scoring**  
**Discussant:** Peter van Rijn

Practical and Policy Impacts of Ignoring Nested Data Structures on Ability Estimation  
Kevin Shropshire

MIRT Ability Estimation: Effects of Ignoring the Partially Compensatory Nature  
Janine Buchholz

Interval estimation of scale scores in item response theory  
Yang Liu

Applying the Hajek Approach in the Delta Method of Variance Estimation  
Jiahe Qian

**Electronic Board Session 4**  
Asymmetric ICCs as an Alternative Approach to Accommodate Guessing Effects  
Sora Lee

Software Note for PARSACLE  
Ying Lu

Stochastic Approximation EM for Exploratory Item Factor Analysis  
Eugene Geis

Reporting Student Growth Percentiles: A Novel Tool for Displaying Growth  
David Swift

The Impact of Plausible Values When Used Incorrectly  
Kyung Sun Chung

Missing Data – On How to Avoid Omitted and Not-Reached Items  
Miriam Hacker

Challenging Measurement in the Field of Multicultural Education: Validating a New Scale  
Jessie Montana Cain

Automated Test Assembly Methods using Monte-Carlo-based Linear-on-the-fly (LOFT) Techniques  
John Weiner

*Please note: Only the first author is listed, all authors will appear in the final program.*
DIF Related to Test Takers’ Culture Background and Language Proficiency
Jinghua Liu

Can a Two-Item Essay Test be Reliable and Valid?
Brent Bridgeman

Selecting Automatic Scoring Features using Criticality Analysis
Han-Hui Por

A Meta-Analysis of the Predictive Validity of Graduate Management Admission Test
Haixia Qian

A fully Bayesian approach to smoothing the linking function in equipercentile equating
Zhehan Jiang

Conducting a post-equating check to detect unstable items on pre-equated tests
Keyin Wang

An evaluation of methods for establishing crosswalks between instruments
Mark Hansen

Exploration of Factors Affecting the Necessity of Reporting Test Subscores
Xiaolin Wang

Evaluation of Psychometric Stability of Generated Items
Yu-Lan Su

Creating Parallel Forms with Small Samples of Examinees
Lisa Keller

Higher-order G-DINA Model for Polytomous Attributes
Qin Yi

Fine-Grained Skill Analyses in δ-Method for Enhancing Q-Matrix Validation
Ragip Terzi

Generalized DCMs for Option-Based Scoring
Oksana Naumenko

Evaluating Sampling Variability and Measurement Precision of Aggregated Scores in Large-Scale Assessment
Xiaohong Gao

Please note: Only the first author is listed, all authors will appear in the final program.
The Model for Dichotomously-Scored Multiple-Attempt Multiple-Choice Items
Igor Himelfarb

Classical Test Theory Embraces Cognitive Load Theory:: Measurement Challenges Keeping It Simple
Charles Secolsky

Monday, April 11, 2016: Individual Sessions

8:15 AM -10:15 AM

Session Title: Issues in Automated Scoring
Discussant: Shayne Miel
Modeling the Global Text Features for Enhancing the Automated Scoring System
Syed Muhammad Fahad Latifi

Discretization of Scores from an Automated Scoring Engine Using Gradient Boosted Machines
Scott Wood

Automated Scoring of Constructed Response Items Measuring Computational Thinking
Daisy Rutstein

Automated Scoring of Complex Technology-Enhanced Tasks in a Middle School Science Unit
Samuel Crane

Comparison of Human Rater and Automatic Scoring on Students’ Ability Estimation
Zhen Wang

Issues to Consider When Examining Differential Item Functioning in Essays
Matthew Schultz

Session Title: Multidimensional and Multivariate Methods
Discussant: Irina Grabovsky
Information Functions of Multidimensional Forced-Choice IRT models
Seang-hwane Joo

Investigating Reverse-Worded Matched Item Pairs Using the GPCM and NRM
Ki Matlock

Item Response Theory Models for Ipsative Tests with Polytomous Multidimensional Forced-Choice Items
Xue-Lan QIU

Multivariate Generalizability Theory and Conventional Approaches for Obtaining More Accurate Disattenuated Correlations
Walter Vispoel

Please note: Only the first author is listed, all authors will appear in the final program.
Comparing a Modified Alpha Coefficient to Split-Half Approaches in the LOFT Framework  
Tammy Trierweiler

Estimating Correlations Among School Relevant Categories in a Multidimensional Space  
Se-Kang Kim

10:35 AM -12:05 PM  
Session Title: Validating “Noncognitive”/Nontraditional Constructs II  
Discussant: Andrew Maul  
Using Response Times to Enhance Scores on Measures of Executive Functioning  
Brooke Magnus

A Structural Equation Model Replication Study of Influences on Attitudes Towards Science  
Rajendra Chattergoon

Experimental Validation Strategies Using the Example of a Performance-based ICT-Skills Test  
Lena Engelhardt

Measuring Being Bullied in the Context of Racial and Religious DIF  
Kory Vue

Session Title: Differential Functioning - Theory and Applications  
Discussant: Catherine McClellan  
Using the Partial Credit Model to investigate the comparability of examination standards  
Qingping He

Handling Missing Data on DIF Detection under the MIMIC Model  
Daniella Reboucas

Properties of Matching Criterion and Its Effect on Mantel-Haenszel DIF Procedure  
Usama Ali

Impact of Differential Bundle Functioning on Test Performance of Focal Examinees  
Kathleen Banks

Session Title: Latent Regression and Related Topics  
Discussant: Matthias von Davier  
Multidimensional IRT calibration with simultaneous latent regression in large-scale survey assessments  
Lauren Harrell

Single-stage vs. Two-stage Estimation of Latent Regression IRT Models  
Peter van Rijn

Please note: Only the first author is listed, all authors will appear in the final program.
Improving score precision in large-scale assessments with the multivariate Bayesian Lasso
*Steven Culpepper*

Performance of missing data approaches in retrieving group-level parameters
*Steffi Pohl*

**12:25 PM -1:55 PM**

**Session Title: Item Design and Development**

**Discussant:** Ruth Childs

A Mixed Methods Examination of Reverse-Scored Items in Adolescent Populations
*C. Barry*

Effects of Writing Skill on Scores on Justification/Evaluation Mathematics Items
*Tim Hazen*

Economy of Multiple-Choice (MC) Versus Constructed-Response (CR) Items: Does CR Always Lose?
*Xuan-Adele Tan*

Applying the Q-diffusion IRT Model to Assess the Impact of Multi-Media Items
*Nick Redell*

**Session Title: English Learners**

**Discussant:** Michael Rodriguez

Using Translanguaging to Assess Math Knowledge of Emergent Bilinguals: An Exploratory Study
*Alejandra García*

Estimating effects of reclassification of English Learners using a propensity score approach
*Jinok Kim*

Comparability Study of Computer-based and Paper-based Tests for English Language Learners
*Nami Shin*

Applying Hierarchical Latent Regression Models in Cross Lingual Assessment
*Haiyan Lin*

**Session Title: Differential Item and Test Functioning**

**Discussant:** Dubravka Svetina

Examining Sources of Gender DIF Using Cross-Classified Multilevel IRT Models
*Liuhan Cai*

Comparing Differential Test Functioning (Dtf) For Dfit Mantel-Haenszel/Liu-Agresti Variance
*C. Hunter*

*Please note: Only the first author is listed, all authors will appear in the final program.*
When can MIRT Models be a Solution for DIF?
Yuan-Ling Liaw

Power Formulas for Uniform and Non-Uniform Logistic Regression DIF Tests
Zhushan Li

Detecting Group Differences in Item Response Processes: An Explanatory Speed-Accuracy Mixture Model
Heather Hayes

**Electronic Board Session 5**
Extension of the lz* Statistic to Mixed-format Tests
Sandip Sinharay

Examining Two New Fit Statistics for Dichotomous IRT Models
Leanne Freeman

Automated Marking of Written Response Items in a National Medical Licensing Examination
Maxim Morin

Automatic scoring system for a short answer in Korean large scale assessment
Eunhee Noh

Evaluating Automated Rater Performance: Is the State of the Art Improving?
Michelle Boyer

Test-Taking Strategies and Ability Estimates in a Speeded Computerized Adaptive Test
Hua Wei

Detecting Cheating When Examinees and Accomplices Are Not Physically Co-located
Chi-Yu Huang

Detecting Differential Item Functioning (DIF) Using Boosting Regression Tree
Xin Luo

Using Growth Mixture Modeling to Explore Test Takers’ Score Change Patterns
Youhua Wei

Studies of growth in reading in a vertically equated national reading test
David Andrich

Examining the Impact of Longitudinal Measurement Invariance Violations on Growth Models
Kelli Samonte

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Individual Sessions

Defining On-Track Towards College Readiness Using Advanced Latent Growth Modeling Techniques
*Anthony Fina*

Impact of Sample Size and the number of Common Items on Equating
*Hongyu Diao*

Effect of Test Speededness on Item Parameter Estimation and Equating
*Can Shao*

Computation of Conditional Standard Error of Measurement with Compound Multinomial Models
*Hongling Wang*

Exploring the within-item speed-accuracy relationship with the profile method for computer-based tests
*Shu-chuan Kao*

Impact of items with minor drift on examinee classification
*Aijun Wang*

Detecting DIF on Polytomous Items of Tests with Special Education Populations
*Kwang-lee Chu*

Online Calibration of Polytomous Items Using the Generalized Partial Credit Model
*Yi Zheng*

Identifying Intra-individual Significant Growth in K-12 Reading and Mathematics with Adaptive Testing
*Chaitali Phadke*

A Comparison of Estimation Techniques for IRT models with Small Samples
*Holmes Finch*

Comparing Three Procedures for Preknowledge Detection in Computerized Adaptive Testing
*Jin Zhang*

Establishing Critical Values for PARSCALE G2 Item Fit Statistics
*Lixiong Gu*

Small Sample Equating for Different Uses of Test Scores in Higher Education
*Hyesun Lee*

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Individual Sessions

2:15 PM -3:45 PM
Session Title: Innovations in Assessment
Discussant: Edith Aurora Graf
Investigating the comparability of examination difficulty using comparative judgement and Rasch modelling
Stephen Holmes

Improvements in Automated Capturing of Psycho-linguistic Features in Reading Assessment Text
Makoto Sano

Generating Rubric Scores From Pairwise Comparisons
Shayne Miel

Investigating Sequential Item Effects in a Testlet Model
William Muntean

Session Title: Technology-based Assessments
Discussant: Mengxiao Zhu
Theoretical Framework for Log-Data in Technology-Based Assessments with Empirical Applications from PISA
Ulf Kroehne

Investigating the Relations of Writing Process Features and the Final Product
Chen Li

Interpretation of a Complex Assessment Focusing on Validity and Appropriate Reliability Assessment
Steffen Brandt

Brenda Loyd Dissertation Award Presentation 2016: Youn-Jeng Choi

4:05 PM -6:05 PM
Session Title: Practical Issues in Equating
Discussant: Dongmei Li
Empirical Item Characteristic Curve Pre-equating with the Presence of Test Speededness
Yuxi Qiu

Investigating the Effect of Missing and Speeded Responses in Equating
Hongwook Suh

The Effects of Non-Representative Common Items on Linear Equating Relationships
Lu Wang

Pseudo-Equating Without Common Items or Common Persons
Nooree Huh

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Individual Sessions

Equating Item Difficulty Under Sub-Optimal Conditions
*Michael Walker*

Impact of Drifted Common Items on Proficiency Estimates under the CIECP Design
*Juan Chen*

**Session Title: The Great Subscore Debate**

**Discussant:** Sandip Sinharay

How Worthless Subscores are Causing Excessively Long Tests
*Howard Wainer*

An alternative perspective on subscores and their value
*Yuanchao Emily Bo*

Masking Distinct and Reliable Subscores: A Call to Assess Added Value Invariance
*Joseph Rios*

Why do value added ratios differ under different scoring approaches?
*Brian Leventhal*

Accuracy of the Person-Level Index for Conditional Subscore Reporting
*Richard Feinberg*

The Validity of Augmented Subscores when Used for Different Purposes
*Marc Gessaroli*

**Session Title: Scores and Scoring Rules**

**Discussant:** Steven Culpepper

The Relationship Between Pass Rate and Multiple Attempts
*Ying Cheng*

Classification Consistency and Accuracy with Atypical Score Distributions
*Stella Kim*

A psychometric evaluation of item-level scoring rules for educational tests
*Frederik Coomans*

For Want of Subscores in Large-Scale Educational Survey Assessment: A Simulation Study
*Nuo Xi*

Comparability of essay scores across response-modes: A complementary view using multiple approaches
*Nina Deng*
Board Poster Sessions

Saturday, April 9, 2016: GSIC Electronic Board Poster Sessions

2:15 PM-3:45 PM
GSIC Student Issues Poster Session I
Graduate Student Issues Committee
Brian Leventhal, Chair
Laine Bradshaw, Jeremy Brown, Evelyn Johnson, Jerusha Gerstner, Ray Reichenberg

Testing Two Alternatives to a Value-Added Model for Teacher Capability
Nicole Jess

Using Response Time in Cognitive Diagnosis Models
Nathan Minchen

An Exhaustive Search for Identifying Hierarchical Attribute Structure
Lokman Akbay

Performance of DIMTEST and Generalized Dimensionality Discrepancy Statistics for Assessing Unidimensionality
Ray Reichenberg

Self-directed Learning Oriented Assessments Without High Technologies
Jiahui Zhang

Vertical Scaling Under Rasch Testlet Model
Mingcai Zhang

Comparing Multilevel DIF Detecting Methods: Focusing on Mantel-Haenszel Method and SIBTEST
Dasom Hwang

Detecting Non-fitting items for the Testlet Response Model
Ryan Lynch

An Iterative Technique to Improve Test Cheating Detection using the Omega Statistic
Hotaka Maeda

Parameter Recovery in the Multidimensional Graded Response Item Response Theory Model
Shengyu Jiang

The Impact of Ignoring a Multilevel Structure in Mixture Item Response Models
Woo-yeol Lee

Determining the Diagnostic Properties of the Force Concept Inventory
Mary Norris

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Board Poster Sessions

Understanding School Truancy: Risk-Need Latent Profiles of Adolescents
Andrew Iverson

Utilizing nonignorable missing data information in item response theory
Daniel Lee

Investigating IPD Amplification and Cancellation at the Testlet-level on Model Parameter Estimation
Rosalyn Bryant

Measuring Reading Comprehension Through Automated Analysis of Students’ Small-Group Discussions
Audra Kosh

Differential Item Functioning Among Students with Disabilities and English Language Learners
Kevin Krost

Extreme Response Style: Which Model is Best?
Brian Leventhal

Evaluating DIF Detection Procedure in the Context of the MIRID
Isaac Li

Item Difficulty Modeling of Computer-Adaptive Reading Comprehension Items Using Explanatory IRT Models
Yukie Toyama

Recovering the Item Model Structure from Automatically Generated Items Using Graph Theory
Xinxin Zhang

The Impact of Item Difficulty on Diagnostic Classification Models
Ren Liu

Sensitivity to multidimensionality of mixture IRT models
Yoonsun Jang

Monte Carlo Methods for Approximating Optimal Item Selection in CAT
Tianyu Wang

The Relationship between Q-Matrix Loading, Item Usage, and Estimation Precision in CD-CAT
Susu Zhang

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Sunday, April 10, 2016: GSIC Electronic Board Poster Sessions

2:45 PM-4:15 PM
GSIC Student Issues Poster Session II
Graduate Student Issues Committee
Brian Leventhal, Chair
Laine Bradshaw, Jeremy Brown, Evelyn Johnson, Jerusha Gerstner, Ray Reichenberg

Examining Test Irregularities Using Multidimensional Scaling Approach
Qing Xie

The influence of measurement invariance in the two-wave, longitudinal mediation model
Oscar Gonzalez

Parallel Analysis of Unidimensionality with PCA and PAF in Dichotomously Scored Data
Ismail Cukadar

Reducing Data Demands of Using a Multidimensional Unfolding IRT Model
Elizabeth Williams

Challenging Conditions for MML and MH-RM Estimation of Multidimensional IRT Models
Derek Sauder

The Effects of Dimensionality and Dimensional Structure on Composite Scores and Subscores
Unhee Ju

Simple Structure MIRT True Score Equating for Mixed-format Tests
Stella Kim

Conditions of Evaluating Models with Approximate Measurement Invariance Using Bayesian Estimation
Ya Zhang

Detecting Nonlinear Item Position Effects with a Multilevel Model
Logan Rome

Comparison of scoring methods for different item types
Hongyu Diao

Estimating Reliability of Testlet-based Tests with Balanced and Unbalanced Data
Nana Kim

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Board Poster Sessions

Hierarchical Bayesian Modeling for Peer Assessment in a Massive Open Online Course
Yao Xiong

The Impact of Model Misspecification in the DCM-CAT
Yu Bao

Interval Estimation of IRT Proficiency in Mixed-Format Tests
Shichao Wang

Analysis of Item Difficulty Predictors for Item Pool Development
Feng Chen

Regressing Multiple Predictors into a Cognitive Diagnostic Model
Kuan Xing

Non-Instructional Factors that Affect Student Mathematics Performance
Michelle Boyer

A Procedure to Improve Item Parameter Estimation in Presence of Test Speededness
Can Shao

Simulation Study of Estimation Methods in Multidimensional Student Response Data
Philip Grosse

Detecting Testlet Effect Using Graph Theory
Xin Luo

Assessing Item Response Theory Dimensionality Assumptions Using DIMTEST and NOHARM-based Methods
Kirsten Hochstedt

Evaluating the invariance property in IRT: A case of multi-state assessment
Seunghee Chung

Evaluating Predictive Accuracy of Alternative IRT Models and Scoring Methods
Charles Iaconangelo

A Comparison of Estimation Methods for the Multi-unidimensional three-parameter IRT Model
Tzu Chun Kuo

A Methodology for Item Condensation Rule Identification in Cognitive Diagnostic Models
Diego Luna Bazaldua

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