YU BAO, Ph.D.
Assistant Professor, Department of Graduate Psychology
Assistant Assessment Specialist, Center for Assessment and Research Studies
James Madison University
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EDUCATIONAL BACKGROUND

Ph.D. Quantitative Methodology, College of Education, The University of Georgia, 2019.
M.S. Statistics, Beijing Normal University, 2013.
B.S.   Statistics, Beijing Normal University, 2010.

EMPLOYMENT HISTORY

2019 – present   Assistant Assessment Specialist. Center for Assessment and Research Studies (CARS), James Madison University, Harrisonburg, VA.

2019 – present   Assistant Professor. Department of Graduate Psychology. James Madison University, Harrisonburg, VA.

2018   Research Assistant. Department of Educational Psychology, The University of Georgia, Athens, GA.

2017 Fall   Teaching Assistant. Department of Educational Psychology, The University of Georgia, Athens, GA.

2015 – 2017   Research Assistant. Department of Educational Psychology, The University of Georgia, Athens, GA.

2015 Fall   Teaching Assistant. Department of Educational Psychology, The University of Georgia, Athens, GA.

2013 – 2015   Graduate Assistant. Georgia Center for Assessment, Athens, GA.

2010 – 2013   Graduate Assistant. Department of Statistics, Beijing Normal University, Beijing, China.

TEACHING EXPERIENCE

Instructor of Diagnostic Classification Models (PSYC 850, doctoral level), Department of Graduate Psychology, James Madison University	Spring 2021
Instructor of Equating (PSYC 850, doctoral level), Department of Graduate Psychology, James Madison University	Spring 2023, Fall 2021, Spring 2020

Instructor of Intermediate Inferential Statistics (PSYC 605, master level), Department of Graduate Psychology, James Madison University	Fall 2020
Teaching Assistant of Diagnostic Classification Models (doctoral level), Department of Educational Psychology, University of Georgia	Fall 2015, Fall 2017
Teaching Assistant of Analysis of Variance (doctoral level), Department of Educational Psychology, University of Georgia	Fall 2015, Spring 2016

PUBLICATIONS

+Recent graduate (alum); *Undergraduate Student; #Graduate Student

Tang, H., & **Bao, Y.** (2022). A diagnostic classification model of college instructors' value beliefs towards open educational resources. *Education and Information Technologies*, 1- 20. DOI: https://doi.org/10.1007/s10639-022-11455-0

Tang, H. & **Bao, Y.** (2022). Self-regulated learner profiles in MOOCs: A cluster analysis based on the item response theory, *Interactive Learning Environments,* 1-17. DOI: 10.1080/10494820.2022.2129394

Zhang, W., & **Bao, Y.** (2022). SENDER: SEmi-Nonlinear Deep Efficient Reconstructor for Extraction Canonical, Meta, and Sub Functional Connectivity in the Human Brain. *arXiv preprint arXiv:2209.05627*.

Merrell, L. K., Henry, D. S., Baller, S. L., Burnett, A. J., Peachy, A. A., & **Bao, Y.** (2022). Developing an Assessment of a Course-Based Undergraduate Research Experience (CURE). *Research & Practice in Assessment*, *17*(1).

Zhang, W., **Bao, Y.** (2022). DEMAND: Deep Matrix Approximately Nonlinear Decomposition to Identify Meta, Canonical, and Sub-Spatial Pattern of functional Magnetic Resonance Imaging in the Human Brain. *arXiv preprint arXiv.2205.10264.*

Zhang, W., **Bao, Y.** (2022). DELMAR: Deep Linear Matrix Approximately Reconstruction to Extract Hierarchical Functional Connectivity in the Human Brain. *arXiv preprint arXiv.2205.10374.*

Zhang, W., **Bao, Y.** (2022). SADAM: Stochastic Adam, A Stochastic Operator for First-Order Gradient-based Optimizer. *arXiv preprint arXiv.2205.10247.*

Liu, J., Ding, R., Gao, R., **Bao, Y.,** Hood, S. K., & Ni, S. (2022). A preliminary investigation of psychometric properties of the youth-reported Pediatric Symptom Checklist (PSC-Y) in Chinese elementary, middle, and high schools. *Journal of Affective Disorders.*

Prendergast[#], C. O., Satkus[#], P., Alahmadi[#], S., & **Bao, Y.** (2022). Fostering the Assessment Processes of Academic Programs in Higher Education During COVID-19: An Example from James Madison University. Assessment Update, 34(2), 1-16.

Tang, H., & **Bao, Y.** (2021). Latent class analysis of K-12 teachers' barriers to implementing OER. *Distance Education*, 1-17.

Bao, Y., Shen, Y., Wang, S., & Bradshaw, L. (2021). Flexible Computerized Adaptive Tests to Detect

Misconceptions and Estimate Ability Simultaneously. *Applied Psychological Measurement*, *45*(1), 3-21.

Tang, H., & **Bao, Y.** (2020). Social Justice and K-12 Teachers' Effective Use of OER: A Cross-Cultural Comparison by Nations. *Journal of Interactive Media in Education*, *2020*(1).

Bao, Y., & Bradshaw, L. (2018). Attribute-level Item Selection Method for DCM-CAT. *Measurement: Interdisciplinary Research and Perspectives*, *16*(4), 209-225.

Kim, S. H., **Bao, Y**., Horan, E., Kim, M., & Cohen, A. S. (2015). Gauss–Hermite Quadrature in Marginal Maximum Likelihood Estimation of Item Parameters. In *Quantitative Psychology Research* (pp. 43-58). Springer, Cham.

Zhang, S., **Bao, Y.,** Bao, J, & Li, S. (2014). A Cognitive Diagnosis Model Concerning Item Correlations. *Journal of Beijing Normal University (Natural Science), 50*, 331-336.

Guo, L., **Bao, Y**., Wang, Z., & Bian, Y. (2014). Cognitive Diagnostic Assessment with Different Weight for Attribute: Based on the Dina Model. *Psychological reports*, *114*(3), 802-822.

Zhang, S. M., **Bao, Y**., & Guo W. H. (2013). A Generalized Cognitive Diagnosis Model Under a Particular Polytomous Situation. *Psychological Exploration*, *33*, 444-450.

Sun, J. N., Zhang, S. M., Xin, T., & **Bao, Y.** (2011). A Cognitive Diagnosis Method Based on Q-Matrix and Generalized Distance. *Acta Psychologica Sinica*, *43*, 1095-1102.

CONFERENCE PRESENTATIONS

2023

Tang, H., Yan, Y., **Bao, Y.** (2023). *Exploring the relationship between college students' value beliefs and achievement goals in using open educational resources.* 2023 Annual Meeting of National Council on Measurement in Education, Chicago, IL.

Mireless[#], N., **Bao, Y.** (2023). *How Rapid Guessing Affects Diagnostic Classification Models: An Empirical and Simulation Study.* 2023 Annual Meeting of National Council on Measurement in Education, Chicago, IL.

Madison, M., & **Bao, Y.** (2023). *Introduction of Diagnostic Classification Models.* 2023 Annual Meeting of National Council on Measurement in Education, Chicago, IL.

Tang, H., **Bao, Y.** (2023). *Examining Self-Regulated Learner Profiles in MOOCs: An Item Response Theory Perspective.* 2023 Annual Meeting of National Council on Measurement in Education, Chicago, IL.

2022

Mireless[#], N., **Bao, Y.** (2022). *Multilevel Diagnostic Classification Modeling in Applied Research: An illustration.* Paper presented at the Northeastern Educational Research Association, Trumbull, Connecticut.

Bao, Y., Mireless[#], N., Liu, J. (2022). *A Multilevel Polytomous-attribute Diagnostic Classification Model.* 2022 Annual Meeting of National Council on Measurement in Education, San Diego, CA.

Bao, Y., Liu, J., DiStefano, C. (2022). *Diagnosing Children's Emotional and Behavioral Problems in Preschool: A Multilevel Diagnostic Classification Model Approach.* 2022 Annual Meeting of American Educational Research Association Annual Meeting, San Diego, CA.

Tang, H., **Bao, Y.** (2022). *A Person-centered Analysis of K-12 Teachers' Barriers in Implementing OER.* 2022 Annual Meeting of American Educational Research Association Annual Meeting, San Diego, CA.

Liu, J., Ding, R., Gao, R., **Bao, Y.,** Ni, S. (2022).*Validation of the PSC-17-Y in Chinese Elementary, Middle, and High School Adolescents.* 2022 Annual Meeting of American Educational Research Association Annual Meeting, San Diego, CA.

Paek, S., **Bao, Y.** (2022). *The hidden loss of creative potential in schools: Are girls' creative potential under-identified in schools?* 2022 Annual Meeting of National Council on Measurement in Education, San Diego, CA.

Paek, S., **Bao, Y.** (2022). *The Hidden Loss of Creative Potential at School Is Girls' Creative Potential Under-identified at School?* 2022 Annual Meeting of American Psychological Association, Minneapolis, MN, Aug. 4-6.

2021

Bao, Y., Prendergast, C. (Dec, 2021). *Evaluating Student Learning in Higher Education Institutions - A Meta-assessment Approach.* Annual Meeting of SACSCOC, Dallas, TX.

Tang, H., **Bao, Y.** (November, 2021). *Understanding social justice in K-12 teachers' effective use of OER.* 2021 Association for Educational Communications and Technology (Virtual).

Tang, H., **Bao, Y.** (November, 2021). *Deconstructing elementary students' male hubris and female humility effect in China: A perspective of multiple intelligence.* 2021 Association for Educational Communications and Technology (Virtual).

Bao, Y., Madison, M. (June, 2021). *An Invariance Preserving Cognitive Diagnostic Computer Adaptive Testing Algorithm.* National Council on Measurement in Education (Virtual).

Madison, M., **Bao, Y.**, Chung, S., Kim, J., & Bradshaw, L. (June, 2021). *A Longitudinal Diagnostic Classification Model with Polytomous Attributes*. National Council on Measurement in Education (Virtual).

Bao, Y., Liu, J., & Distefano, C. (April, 2021). *Using Diagnostic Classification Models to Diagnose Children's Emotional and Behavioral Problems in Preschool.* Paper presented at the American Educational Research Association Annual Meeting (Virtual).

2020

Bao, Y., Satkus, P. (Dec, 2020). *Evaluating Student Learning in Higher Education Institutions - A Meta-assessment Approach.* Annual Meeting of SACSCOC (Virtual).

Tang, H. & **Bao, Y.** (2020, November 2-7). Teachers' value beliefs associated with using Open

Educational Resources in K-12 education [Paper session]. Association for Educational Communications and Technology Annual Conference, Jacksonville, FL, United States. https://convention2.allacademic.com/one/aect/aect20.

Bao, Y., Urquhart, K., & Speno, M. (moderator). (2020, October). *A good dissertation is a finished dissertation, but what comes next?: Post-dissertation potential*. GSIC Virtual panel session at the annual meeting of the Northeastern Educational Research Association (NERA).**Panel for NERA**

Bao, Y., Bradshaw, L. (April, 2020). *An Attribute-level Item Exposure Control Method for DCM-CAT.* National Council on Measurement in Education, San Francisco, CA (Conference Canceled)

Bao, Y. (2020, Apr 17 - 21) *The Constrained Diagnostic Classification Models for Polytomous Attributes*. AERA Annual Meeting San Francisco, CA http://tinyurl.com/sezs6xo (Conference Canceled)

2019

Bao, Y., (October, 2019). *A Preliminary Study of Model Selection Indices for Polytomous-attribute Diagnostic Classification Models.* Paper presented at the Northeastern Educational Research Association, Trumbull, Connecticut.

Tang, H., **Bao, Y.,** (October, 2019). *Educators' Usage of Open Educational Resources: Comparisons by Nations.* The 16th Annual Open Education Conference, Phoenix, AZ.

Bao, Y., Bradshaw, L. (April, 2019). *Investigation of the Model Invariance for DCM with Polytomous Attributes.* Paper presented at the National Council on Measurement in Education, Toronto, Ontario, Canada.

2018

Bao, Y., Bradshaw, L. (April, 2018). *A Diagnostic Classification Model for Polytomous Attribute.* Paper presented at the National Council on Measurement in Education, New York City, New York, U.S.

Shen, Y., **Bao, Y.,** Wang, S., Bradshaw, L. (April, 2018). Detecting Misconceptions and Estimating Ability Simultaneously: A Hybrid Computerized Adaptive Testing Framework. Paper presented at the National Council on Measurement in Education, New York City, New York, U.S.

2017

Bao, Y., Bradshaw, L. (November, 2017). *A Diagnostic Classification Model for Polytomous Attribute.* Paper presented at the Northeastern Educational Research Association, Trumbull, Connecticut, U.S.

Shen, Y., **Bao, Y.,** Wang, S., Bradshaw, L. (August, 2017). *Hybrid SICM-CAT: Diagnosing misconceptions and estimating ability.* Paper presented at the International Association for

Computerized Adaptive Testing, Niigata, Japan.

Bao, Y., & Bradshaw, L. (April, 2017). *The application of an attribute-level item selection method for DCM-CAT.* Paper presented at the National Council on Measurement in Education, Austin, Texas.

2016

Bao, Y., & Bradshaw, L. (July, 2016). *The attribute-level item selection method in DCM-CAT.* Paper presented at the 2016 International Meeting of Psychometric Society, Ashville, North Carolina.

Bao, Y., & Bradshaw, L. (April, 2016). *The impact of model misspecification in the DCM-CAT.* Paper presented at the National Council on Measurement in Education, Washington, D.C.

2015

Bao, Y. & Bradshaw, L. (July, 2015). *Item-level specifications in a general diagnostic classification model framework.* Paper presented at the 2015 International Meeting of Psychometric Society, Beijing, China.

2014

Kim, S.-H., **Bao, Y.,** Horan, E., Kim, M., & Cohen, A. S. (July, 2014). *Gauss-Hermite quadrature in marginal maximum likelihood estimation of item parameters.* Paper presented at the 79th annual meeting of the Psychometric Society, Madison, WI.

Bao, Y., Xing, X., & Bradshaw, L. (April, 2014). *Diagnosing career indecision types for adolescents using a diagnostic classification model.* Paper presented at the 2014 COE Graduate Student and Faculty Research Conference of UGA. Athens, GA.

2012

Zhang, S. M., **Bao, Y.** (September, 2012). *A generalized polytomous cognitive diagnosis model.* Paper presented at the tenth National Education and Psychology Statistics and Measurement Academic Annual Meeting and the 8th Cross-Strait Psychology and Education Test, Nanchang, Jiaxi, China.

Zhang, S. M., **Bao, Y.** (July, 2012). A cognitive diagnosis model based on a particular polytomous case. Paper presented at the International Meeting of the Psychometric Society, Lincoln, NE.

INVITED PRESENTATION

Bao, Y. (Jan, 2023). *Advancing Methodologies and Applications of Diagnostic Classification Models.* University of South Carolina.

HONORS & AWARDS
2022   Outstanding Junior Faculty Award, Department of Graduate Psychology, James Madison University

2015 Doctoral Student International Travel Grants, Office of the Vice President for Research, The University of Georgia
2014 Graduate School Excellence in Graduate Recruitment Fund Award, The University of Georgia
2010 Meritorious Winner in Mathematics Contest in Modeling, U.S. National Level
2009 Meritorious Winner in Mathematics Contest in Modeling, U.S. National Level

LEADERSHIP POSITIONS AND SERVICE ACTIVITIES
Manuscript Reviewer

Applied Measurement in Education Applied

Psychological Measurement Cogent

Psychology

Educational and Psychological Measurement Educational

Measurement: Issues and Practice Frontier in Education

Frontier in Psychology

Journal of Educational Measurement

Measurement: Interdisciplinary Research and Perspectives Psychometrika

Computational Statistics and Data Analysis

American Educational Research Association (AERA) Annual Meeting National

Council on Measurement in Education (NCME) Annual Meeting Northeastern

Educational Research Association (NERA) Annual Meeting

Leadership Positions

National Council on Measurement in Education   2020 – now
• Co-chair of Diagnostic Measurement SIGMIE
Northeastern Educational Research Association   2019 – now
• Communication Committee
• Webmaster
National Council on Measurement in Education   2016 – 2017
• Membership Committee
The University of Georgia Graduate Researchers in Educational Psychology & Instructional Technology   2014 – 2015
• Program Representative, Executive Committee

PROFESSIONAL AFFILIATIONS

National Council on Measurement in Education
American Educational Research Association, Division D
Northeastern Educational Research Association
Psychometric Society