Youngsoon Kang, PhD

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Personal Profile

I am a psychometrician with a strong background in educational measurement, statistical modeling, and AI-powered assessment development. With experience in both industry and academic research, I have led the development and validation of assessments, conducted psychometric analyses using advanced statistical models, and contributed to large-scale educational and social science research and practice. My expertise includes item response theory (IRT), computerized adaptive testing (CAT), hierarchical linear modeling, and machine learning applications in assessment. I have authored research publications, presented at national conferences, and contributed to state RFPs and technical documentation. Committed to bridging research and practice, I strive to develop high-quality assessments that enhance learning outcomes.

Education

2014-2023 Ph.D. in Educational Psychology - University of Minnesota
Quantitative Methods in Education
Committee Chair: Michael Rodriguez
Committees: Ernest C. Davenport, Mark Davison, David Weiss

2011-2013 M.A. in Organizational Leadership, Policy, and Development - University of Minnesota
Human Resource Development

2006-2010 B.Ed. in Geography Education - Korea University

Employment History

Nov 2022 - Present Amira Learning
Senior Psychometrician

- Developed reading assessment for grades K–6 based on Science of Reading and conducted calibration studies, test assembly, and norm-referenced composite score development.
- Led quality assurance processes, evaluated item and assessment health, and provided actionable insights for leadership decisions.
- Authored RFPs for state initiatives and maintained the Amira Learning Assessment technical manual to ensure assessment reliability and validity.

June 2021 - Nov 2022 Emmersion/IXL Learning
Lead Psychometrician

- Conducted item and person calibration, ensuring assessment accuracy and reliability.
- Developed scoring algorithms and utilize machine learning models to predict and generate final reported scores.
- Performed quality assurance and analyzed product usage data to drive improvements in assessment tools.

Jan 2019 - Aug 2020 Individual Growth and Development Indicators (IGDIs) Lab, University of Minnesota
Graduate Research Assistant

- Being responsible for data management including data cleaning, organizing, documenting, and forensic.
- Conducted quantitative analyses applying statistical and measurement models such as hierarchical linear modeling and IRT.

Mar 2015 - Aug 2020 Minnesota Youth Development Research Group, University of Minnesota
Graduate Researcher

- Conducted psychometric evaluation of Social-Emotional Learning (SEL) measures using multidimensional item response theory models such as confirmatory bi-factor models.

Jan 2014 - Jan 2019 Institute on Community Integration (ICI), University of Minnesota
Graduate Research Assistant

- Evaluated psychometric properties of the National Core Indicators Adult Consumer Survey (NCI-ACS) using IRT collaborating with Human Services Research Institute (HSRI).

May 2015 - Aug 2015 Educational Equity Resource Center, University of Minnesota
Graduate Research Assistant

- Developed on-line map of the University of Minnesota research and programs addressing educational equity and serving PreK-12 educators and students.

Publications

Kang, Y., Nord, D., Nye-Lengerman, K. (2019). Impact of Different Types of Disability and Support on Weekly Wage: A Quantile Regression Approach. Journal of Rehabilitation, 85(1), 4-14.

Van Boekel, M., Bulut, O., Stanke, L., Zamora, J. R. P., Jang, Y., Kang, Y., Nickodem, K. (2016). Effects of participation in school sports on academic and social functioning. Journal of Applied Developmental Psychology, 46, 31-40.

Manuscripts in Progress

Kang, Y., Ticha, R., Qian, X. Evaluation of Social Interpersonal Relationship Sub-domain of the National Core Indicators Adult Consumer Survey (NCI-ACS) Using Item Response Theory.

Kang, Y. Rodriguez, M. Evaluation of social emotional learning (SEL) measures: Application and comparison of polytomous multidimensional item response theory (MIRT) models.

Wackerle-Hollman, A., Hojnoski, R., Missall, K., Rodriguez, M., Kang, Y., Kristin, R. To Time or Not To Time: Effects of Timing on Assessment of Language and Early Literacy with Preschoolers.

Paper Presentations

Nolan, K., Kang, Y. Liu, R. (2025, April). An Evaluation of Automated Item Scoring in the Context of Inter-Rater Reliability. Paper to be presented at the annual meeting of the National Council of Measurement in Education, Denver, CO.

Kang, Y. Ticha, R. (2019, June). Psychometric Evaluation of the National Core Indicators Adult Consumer Survey (NCI-ACS) Using Item Response Theory. Paper presented at the annual meeting of the American Association of Intellectual and Developmental Disabilities, Minneapolis, MN.

Kang, Y., Rodriguez, M., Vue, K. (2019, April). Psychometric evaluation of social emotional learning measures: Applying multidimensional IRT. Paper presented at the annual meeting of the National Council of Measurement in Education, Toronto, ON, Canada.

Kang, Y., Nickodem, K., Mang Han, S., Smith, M., Rodriguez, M.C. (2019, April). Intensity and breadth of OST activity participation: Connecting latent classes, student characteristics, and educational outcomes. Paper presented at the annual meeting of the American Educational Research Association, Toronto, ON, Canada.

Smith, M., Kang, Y., Vue, K., Miranda, A., Rodriguez, M.C. (2019, April). Investigating internal structure of social emotional learning measures: A bifactor approach. Paper presented at the annual meeting of the National Council of Measurement in Education, Toronto, ON, Canada.

Rodriguez, M.C., Dosedel, M., Kang, Y., (2019, April). Validation of Social and Emotional Learning Measures in Inequitable Settings. Paper presented at the annual meeting of the National Council of Measurement in Education, Toronto, ON, Canada.

Kang, Y. (2018, July). Psychometric Evaluation of the National Core Indicators Adult Consumer Survey (NCI-ACS) Using Item Response Theory. Paper presented at the annual meeting of the International Test Commission Conference, Montreal, Canada.

Davison, M. L., Davenport Jr, E. C., Zopluoglu, C., Kang, Y., Culpepper, S. A, (April, 2018). Dimensionality as it Relates to Primary Latent Factors, Sub-scores, and Item Parcels. Paper presented during the symposium at the annual meeting of the National Council of Measurement in Education, New York, NY.

Kang, Y., Smith, M., Ersan, O., Rodriguez, M.C. (April, 2018). A pathway to resilience for students who experience trauma: A structural equation modeling approach. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

Palma, J., Bulut, O., Kang, Y.. (April, 2018). Measurement invariance in noncognitive measures: Validity approach using explanatory item response modeling. Paper presented at the annual meeting of the National Council of Measurement in Education, New York, NY.

Kang, Y., Van Boekel, M., Bulut, O., Nickodem, K., Palma, J., Vue, K., Jang, YJ., Rodriguez, M.C, (April, 2017). Interaction Among Gender, Race/Ethnicity, and School Sports Participation in Youth Development. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

Kang, Y., Rodriguez, M.C., Vue, K. Jang, YJ, (June, 2016). Exploring American Indian Students' Non-response to Educational Goals Paper presented at the Society for the Psychological Study of Social Issues, Minneapolis, MN.

Davenport Jr, E. C., Kang, Y., Park, J, (April, 2016). Level and Pattern Relationships: Beyond Profile Analysis. Paper presented at the annual meeting of the American Educational Research Association, Washington D.C.

Teaching Experience

2018-2019 Hierarchical Linear Modeling [EPsy 8268], University of Minnesota

2013-2014 Methods in Data Analysis for Educational Research I [EPsy 8251], University of Minnesota

Skills

- **Statistical Software**
  R, R Markdown, R Shiny, Python, Mplus, FlexMIRT, IRTPRO, WINSTEPS
- **Languages**
  English - Proficient, *Korean* - Native

Referees

Available upon request.