NICOLE B. KERSTING

University of Arizona
Educational Psychology,
College of Education,
1430 East Second Street &
Interdisciplinary Graduate Program in
Statistics, Mathematics Building 520
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EDUCATION

Ph.D. **University of California, Los Angeles,** Education, Division of Research
   Methodology, Advanced Quantitative Methods, 2005
      Dissertation: *Assessing Teachers' Knowledge of Teaching Mathematics: Instrument
      Development and Validation* (Chair: Dr. Noreen Webb)
M.A. **University of California, Los Angeles,** Education, Division of Research
   Methodology, Advanced Quantitative Methods, 2002
   University of California, Berkeley, Intercampus Exchange Program, 2001
M.A. **Friedrich-Wilhelm University of Bonn, Germany**, German and Romance
   Languages, Linguistics, and Literature, 1994 [There were no bachelor degrees at that
   time and hence the Master degree was the basic university degree awarded in
   Germany, 6-7years]

CHRONOLOGY OF EMPLOYMENT

Associate Professor of Quantitative Research Methodology Educational Psychology	2022 - present
Associate Professor of Quantitative Research Methodology Department of Teaching, Learning, and Sociocultural Studies &	2015 - 2022

Faculty Member of the Interdisciplinary Graduate Program in
   Statistics (GDIP)
   University of Arizona
	2010- present

Assistant Professor of Quantitative Research Methodology	2009 - 2015
Department of Teaching, Learning, and Sociocultural Studies	2011 - 2015
Department of Educational Psychology	2009 - 2010
University of Arizona	
Research Scientist	*2005 - 2008*
LessonLab Research Institute, Santa Monica, CA	
Graduate Student Researcher	2004 - 2005
LessonLab Research Institute, Santa Monica, CA	
Graduate Student Researcher	2001 - 2004

   Nicole. B. Kersting

Graduate School of Education and Information Studies, University of California, Los Angeles, CA

Research Associate (Country Associate for Switzerland, Third International Mathematics and Science Video Study (TIMSS Video 1999)   1998 – 2001
LessonLab Research Institute, Santa Monica, CA

Research Associate, Third International Mathematics and Science Video Study (TIMSS Video 1994)   1995 – 1998
Department of Psychology, University of California, Los Angeles

GRANTS

Teachers as Learners – Teachers as Thinkers: Teachers as Learners – Teachers as Thinkers: Improving Classroom Communication in Mathematics   2020-2026
    Principal Investigator: Nicole B. Kersting
    Co-PIs: Robert Wilson, Department of Psychology, University of Arizona
    Research funded by the James S. McDonnell Foundation, Teachers as Learners, award # 220020586.
    Award amount: $2,500,000.

Developing and Validating a Scalable, Classroom-focused Measure of Usable Knowledge for Teaching Mathematics: The Classroom Video Analysis - Common Core Mathematics (CVA-M) Instrument   2017-2023
    <u>Principal Investigator</u>: Nicole B. Kersting
    Funded by the National Science Foundation (NSF) DRpreK-12 Program, Assessment Strand, award #: 1720866.
    Award amount: $2,022,917.

Collaborative Proposal: Mathematical Modeling with Community Contexts   2016 - 2019
    <u>Principal Investigator</u>: Erin Turner
    <u>Senior Personnel</u>: Nicole B. Kersting
    Research funded by the National Science Foundation (NSF), Core Research (ECR) Fundamental Research in Science, Technology, Engineering and Mathematics (STEM) Education program, award # 1561305.
    Award amount: $708,632.

Adapting the Classroom Video Analysis Approach as a Feasible and Scalable Measure of Common-Core-Aligned Mathematics Knowledge for Teaching (Indicator 6).   2014 - 2016
    <u>Principal Investigator</u>: Nicole B. Kersting
    Research Funded by the National Science Foundation (NSF), EAGER grant under the PRIME competition, award # 1445431.
    Award Amount: $299,445.

Exploring Automated Scoring of Language-based Instructional Quality Codes using Verbatim Lesson Transcripts.   2012
    <u>Principal Investigator</u>: Nicole B. Kersting
    Research funded by the National Science Foundation (NSF), Discovery Research K-12 (DRK-12), award # 1250973.

Award Amount: $169,230

Assessing Instructional Quality in Mathematics: An Observational Study   2007- 2013
of High and Low Value-Added Teachers.

       <u>Principal Investigator</u>: Nicole B. Kersting, Co-PI until 2009:
       James W. Stigler
       Research funded by the National Science Foundation (NSF),
       Discovery Research K-12 (DRK-12), initial award # 0732204,
       since 2009 award # 0949241.
       Award Amount: $1,499,025.

Using Video Clips of Classroom Instruction as Item Prompts to Measure   2006- 2012
Teacher Knowledge of Teaching Mathematics: Instrument Development
and Validation.

       <u>Principal Investigator</u>: Nicole B. Kersting
       Research funded by the Institute of Educational Sciences (IES),
       Teacher Quality, award # R305M060057.
       Award Amount: $1,474,620.

SELECTED PUBLICATIONS
(*student)

Ayalon, M., Kosko, K. W., Kersting. N. B. (2023). Methodological Approaches to the Study of Teacher Noticing. In: Michal Ayalon, Boris Koichu, Roza Leikin, Laurie Rubel & Michal Tabach (Eds.). Proceeding of the 46th Conference of the International Group for the Psychology of Mathematics Education (Vol. 1). University of Haifa, Israel: PME.

Yeager, D. S., Carroll, J. M., Buontempo, J., Cimpian, A., Woody, S., Crosnoe, R., Muller, C., Murray, J., Mhatre, P., Kersting, N., Hulleman, C., Kudym, M., Murphy, M., Duckworth, A. L., Walton, G. M., & Dweck, C. S. (2022). Teacher Mindsets Help Explain Where a Growth-Mindset Intervention Does and Doesn'tWork. *Psychological Science*, *33*(1), 18–32. https://doi.org/10.1177/09567976211028984 (*First published December 2021*)

Kersting, N.B., Smith, J.E.* & Vezino, B. (2021). Using authentic video clips of classroom instruction to capture teachers' moment-to-moment perceiving as knowledge-filtered noticing. *ZDM Mathematics Education* **53,** 109–118. https://doi.org/10.1007/s11858-020-01201-6

Kersting, N.B**.**, Smith, J.E*., Vezino, B.*, Chen, M.-K., Wood, M. B., & Stigler, J. W. (2020). Exploring the affordances of Bayesian networks for modeling usable knowledge and knowledge use in teaching. *ZDM Mathematics Education* 52**,** 207–218. https://doi.org/10.1007/s11858-020-01135-z

Sherin, B., Kersting, N. B., & Berland, M. (2018). Learning Analytics in Support of Qualitative Analysis. *International Society of Learning Sciences*.

Ramirez, G., Hooper, S. Y., Kersting, N. B., Ferguson, R., & Yeager, D. (2018). Teacher math anxiety relates to adolescent students' math achievement. AERA Open, *4*(1). doi:10.1177/2332858418756052.

Kersting, N. B., Stevenson, P.*, & Chen, M. - K.* (2016). Exploring Issues of Dimensionality and Model Selection: Practical Considerations from the Classroom Video Analysis (CVA) Instrument Development Effort. In A. Izsák, J. T. Remillard, & J. Templin (Eds.), *Psychometric methods in mathematics education: Opportunities, challenges, and interdisciplinary collaborations*. Journal for Research in Mathematics Education

monograph series. Reston, VA: National Council of Teachers of Mathematics. ISSN-9530.

Kersting, N. B., Sutton, T. Kalinec-Craig, C.*, Stoehr, K. J.*, Heshmati, S.*, Lozano, G., & Stigler, J. W. (2016). Further Exploration of the Classroom Video Analysis (CVA) Instrument as a Measure of Usable Knowledge for Teaching Mathematics: Taking a Knowledge System Perspective. *ZDM – International Journal for Mathematics Education*, 48(*1*), 97-109. doi:10.1007/s11858-015-0733-0

Kersting, N. B., Sherin, B. & Stigler, J. W. (2014). Automated Scoring of Teachers' Open-Ended Responses to Video Prompts: Bringing the Classroom Video Analysis (CVA) Assessment to Scale. *Educational & Psychological Measurement,* 74(*6*), 950-974*.* doi:10.1177/0013164414521634

Kersting, N. B., Chen, M.-K.* & Stigler, J. W. (2013). Value-Added Teacher Estimates as Part of Teacher Evaluations: Exploring the Effects of Data and Model Specifications on the Stability of Teacher-Value Added Scores. In A. Amrein-Beardsley, C. Collins S. Polasky and E. Sloat (Eds.) *Value-Added: What America's Policymakers Need to Know and Understand*, Special issue on value-added research for policy. *Educational Policy Analysis Archives*. http://epaa.asu.edu/ojs/article/view/1167.

Kersting, N. B., Givvin, K. B., Thompson, B., Santagata, R. & Stigler, J. (2012). Developing Measures of Usable Knowledge: Teachers' Analyses of Mathematics Classroom Videos Predict Teaching Quality and Student Learning. *American Educational Research Journal, 49(3),* 568-590. doi:10.3102/0002831212437853

Santagata, R., Kersting, N., Givvin, K., & Stigler, J. (2011). Rich Problems as a Lever for Change: An Experimental Study of the Effects of a Professional Development Program on Students' Mathematics Learning. *Journal of Research on Educational Effectiveness, 4,* 1-24. doi: 10.1080/19345747.2010.498562

Kersting, N. B., Givvin, K., Sotelo, F., & Stigler, J. W. (2010). Teacher's Analysis of Classroom Video Predicts Student Learning of Mathematics: Further Explorations of a Novel Measure of Teacher Knowledge. *Journal of Teacher Education*, Vol. 61, No. 1-2, 172-181. doi:10.1177/0022487109347875

Kersting, N. (2008). Using Video Clips as Item Prompts to Measure Teachers' Knowledge of Teaching Mathematics. *Educational and Psychological Measurement, vol. 68, 845-861*. doi:10.1177/0013164407313369

U.S. Department of Education, National Center for Education Statistics. *Teaching Mathematics in the United States: Comparing the Results from the TIMSS 1995 and TIMSS 1999Video Studies of Eighth-Grade Mathematics Lessons.* NCES (2003), by Hiebert, J., Gallimore, R., Garnier, H., Bogard Givvin, K., Hollingsworth, H., Jacobs, J., Chui, A. M., Wearne, D., Smith, M., Kersting, N., Manaster, A., Tseng, E., Etterbeek, W., Manaster, C. and Stigler, James. W. Washington, DC: 2003.

Hiebert, J., Gallimore, R., Garnier, H., Bogard Givvin, K., Hollingsworth, H. Jacobs, J., Chui, A. M., Wearne, D., Smith, M., Kersting, N., Manaster, A., Tseng, E., Etterbeek, W., Manaster, C., Gonzales, P. and Stigler, J. W. (2003). *Understanding and Improving Mathematics Teaching: Highlights from the TIMSS 1999 Video Study.* Phi Delta Kappan, *84*, 768-775.

SERVICE / OUTREACH

NATIONAL/INTERNATIONAL SERVICE

Accepted invitation to serve a 4-year rotation on the grant merit review panels of the Institute of Educational Sciences (IES) — 2015 - 2017

Invited Reviewer of expert paper on teacher knowledge by the Centre for Educational Research and Innovation (CERI) of the Organization of Economic Development and Cooperation (OECD) to inform development of a new international, cross-cultural measure of teachers' general pedagogical knowledge. *Paris, France*. — 2014

Grant Proposal Reviewer for the Institute of Educational Sciences (IES). Merit Review Panels for the *Education Research Grant Programs.* — 2014

Grant Proposal Reviewer for the *National Science Foundation, Merit Reviews Panels for grant programs under the Directorate for Education and Human Resources (EHR)* — 2012

Grant Proposal Reviewer for the *National Science Foundation, Merit Reviews Panels for grant programs under the Directorate for Education and Human Resources (EHR)* — 2011

Grant Proposal Reviewer for the National Science Foundation, Merit Reviews Panels for grant programs under the *Directorate for Education and Human Resources (EHR)* — 2010

Grant Proposal Reviewer for the National Science Foundation, Merit Reviews Panels for grant programs under the *Directorate for Education and Human Resources (EHR)* — 2008

Served as Reviewer for the following education journals
- *ZDM – International Journal for Mathematics Education (ZDM)*
- *American Educational Research Journal (AERJ)*
- *Journal for Teacher Education (JTE)*
- *Cognition and Instruction (CI)*
- *Educational and Psychological Measurement (EPM)*
- *Comparative Education Review (CER)*

DEPARTMENT SERVICE

Doctoral Program Faculty – PhD Admissions	2021 - ongoing
College Council	2017 - 2021
Promotion &Tenure Committee	2016 - 2017
Awards and Operations Committee	2016 - 2017
Graduate Curriculum Committee	2016 - 2017
Curriculum committee	2011 - 2013

COLLEGE SERVICE

Member of the EDP Learning Science Faculty Search Committee	2021, Fall cont.
Member of the Search Committee for Associate Dean of Finance	2020, Winter
Member of the EDP Learning Science Faculty Search Committee	2020, Winter
Invited Guest Speaker, *Usable Knowledge and Knowledge Use in Teaching. Guest Speaker in Course taught by Marta Civil.*	*2019, Fall*
Co-Chair of the College Strategic Plan Research, Knowledge and Innovation Goal Working Group	2019
Provided support for faculty and students on statistics, measurement, and methodology for research and grant writing	

UNIVERSITY SERVICE

Member of the Student Admission Committee of the Interdisciplinary Graduate Program in Statistics, University of Arizona.	2020, Spring
Chair of the Student Admission Committee of the Interdisciplinary Graduate Program in Statistics, University of Arizona.	2014, Spring
Member of the Executive Committee of the Interdisciplinary Graduate Program in Statistics, University of Arizona.	2013 - 2014
Faculty Member in the Interdisciplinary Graduate Program in Statistics	2010 - present

SYNERGISTIC ACTIVITIES

Maintain website (www.teknoclips.org) hosting CVA and CVA-M measures of teachers *Usable Knowledge in Mathematics* and support use of these measures for external research projects, e.g., provide access to review items, provide information on psychometric properties, help with item selection, etc.

Establish, maintain, and grow interdisciplinary research collaborations through affiliation with interdisciplinary graduate programs (GDIPs), by serving as a PI on interdisciplinary research grants and research project advisory boards, and by organizing or participating in conference symposia.