Stanford

Guillermo Solano-Flores

Professor of Education

Graduate School of Education

Curriculum Vitae available Online

CONTACT INFORMATION

- **Admin. Support**

  Elayne Weissler-Martello

  Email elayne@stanford.edu

Bio

BIO

Dr. Guillermo Solano-Flores is Professor of Education at the Stanford University Graduate School of Education. His research focuses on the intersection of assessment, cultural and linguistic diversity, and fairness. This research is relevant to the testing of students who are not proficient in English in the U.S., students from different countries in the context of international comparisons, and students with disabilities. His research is based on the use of multidisciplinary approaches that use psychometrics, sociolinguistics, semiotics, and cognitive science in combination. He is the author of the theory of test translation error, which addresses testing across cultures and languages. Also, he has investigated the use of generalizability theory —a psychometric theory of measurement error—in the testing of English language learners and indigenous populations, and the use of Boolean algebra in complex coding endeavors. He has advised Latin American countries on the development of national assessment systems and has been the advisor to countries in Latin America, Asia, Europe, Middle East, and Northern Africa on the adaptation and translation of performance tasks into multiple languages. Current research projects examine academic language and testing, formative assessment practices for culturally diverse science classrooms, and the design and use of testing accommodations and accessibility resources for students with special needs in computer-administered tests. He serves in the National Assessment Governing Board in the position of testing and measurement expert and has been member of technical advisory boards for several assessment projects and institutions, including the Smarter Balanced Assessment Consortium, the National Assessment of Educational Progress, the National Academy of Education, and the Department of Education of Hawaii.

ACADEMIC APPOINTMENTS

- Professor, Graduate School of Education

Research & Scholarship

RESEARCH INTERESTS

- Artificial intelligence (AI)
- Assessment & Evaluation
- Bilingual & Multilingual Education
- Data Science
- Educational Inequality

- Language & Literacy
- Language Policy
- Mathematics Education
- Measurement in Education
- Science Education

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Current research projects examine academic language and testing, formative assessment practices for culturally diverse science classrooms, and the design and use of illustrations in international test comparisons and in the testing of English language learners.

Teaching

COURSES

2025-26

- Language Issues in Educational Research and Practice: EDUC 223 (Win)

2024-25

- Academic Achievement of Language Minority Students: EDUC 419 (Spr)
- Introduction to Data Analysis and Interpretation: EDUC 200A (Aut)
- Language Issues in Educational Research and Practice: EDUC 223 (Spr)
- Using International Test Results in Educational Research: EDUC 203 (Win)

2023-24

- Introduction to Data Analysis and Interpretation: EDUC 200A (Aut)
- Language Issues in Educational Research and Practice: EDUC 223 (Spr)
- Proseminar 3: EDUC 325C (Spr)
- Using International Test Results in Educational Research: EDUC 203 (Win)

2022-23

- Introduction to Data Analysis and Interpretation: EDUC 200A (Aut)
- Language Issues in Educational Research and Practice: EDUC 223 (Spr)
- Proseminar 3: EDUC 325C (Spr)
- Using International Test Results in Educational Research: EDUC 203 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Daniela Gamboa Zapatel, Tatiana Zamora

Doctoral Dissertation Co-Advisor (AC)

Melissa Lewis

Master's Program Advisor

Xiyu Zhang

Doctoral (Program)

Melissa Lewis, Eunjung Myoung, Jialu Zhao

Publications

PUBLICATIONS

- **Long-term English learners' mathematics course trajectories: downstream consequences of early remediation on college preparation** *International Multilingual Research Journal*
  Biernacki, P. J., Altavilla, J., Kanopka, K., Hsieh, H., Solano-Flores, G.
  2022

- **Academic achievement in a language revitalisation context: a study on the influence of language and socioeconomic factors** *JOURNAL OF MULTILINGUAL AND MULTICULTURAL DEVELOPMENT*
  Altavilla, J., Elosua, P., Solano-Flores, G.
  2021

- **Testing across languages in international comparisons: cultural adaptation of consensus-based test translation review procedures** *JOURNAL OF MULTILINGUAL AND MULTICULTURAL DEVELOPMENT*
  Zhao, X., Solano-Flores, G.
  2020

- **Boolean Analysis of Interobserver Agreement: Formal and Functional Evidence Sampling in Complex Coding Endeavors** *EDUCATIONAL MEASUREMENT-ISSUES AND PRACTICE*
  Solano-Flores, G.
  2020

- **Design and use of pop-up illustration glossaries as accessibility resources for second language learners in computer-administered tests in a large-scale assessment system** *INTERNATIONAL MULTILINGUAL RESEARCH JOURNAL*
  Solano-Flores, G., Chia, M., Kachchaf, R.
  2019; 13 (4): 277–93

- **International Test Comparisons: Reviewing Translation Error in Different Source Language-Target Language Combinations** *INTERNATIONAL MULTILINGUAL RESEARCH JOURNAL*
  Zhao, X., Solano-Flores, G., Qian, M.
  2018; 12 (1): 17–27

- **International Test Comparisons: Reviewing Translation Error in Different Source Language-Target Language Combinations** *International Multilingual Research Journal*
  Zhao, X., Solano-Flores, G., Qian, M.
  2018; 12 (1): 17-27

- **International semiotics: Item difficulty and the complexity of science item illustrations in the PISA-2009 international test comparison** *International Journal of Testing*
  Solano-Flores, G., Wang, C., Shade, C.
  2016; 16 (3): 205-219

- **Assessment capacity, cultural validity and consequential validity in PISA** *RELIEVE*
  Solano-Flores, G., Milbourn, T.
  2016; 22: M12

- **Language shift and the inclusion of indigenous populations in large-scale assessment programs** *International Journal of Testing*
  Solano-Flores, G., Backhoff, E., Contreras-Niño, L. A., Vázquez-Muñoz, M.
  2015; 15 (2): 136-152

- **Complexity of Illustrations in PISA 2009 Science Items and Its Relationship to the Performance of Students from Shanghai-China, the United States, and Mexico.** *Teachers College Record*
  Solano-Flores, G., Wang, C.
  2015; 117 (1): n1

- **The effects of content, format, and inquiry level on science performance assessment scores** *APPLIED MEASUREMENT IN EDUCATION*
  Stecher, B. M., Klein, S. P., Solano-Flores, G., McCaffrey, D., Robyn, A., SHAVELSON, R. J., HAERTEL, E.
  2000; 13 (2): 139-160

- **On the development and evaluation of a shell for generating science performance assessments** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
  Solano-Flores, G., Jovanovic, J., SHAVELSON, R. J., Bachman, M.
  1999; 21 (3): 293-315

- **Toward a science performance assessment technology** *7th EARLI Conference*
  SHAVELSON, R. J., Solano-Flores, G., Ruiz-Primo, M. A.
  PERGAMON-ELSEVIER SCIENCE LTD.1998: 171–84

- **Gender and racial/ethnic differences on performance assessments in science** *EDUCATIONAL EVALUATION AND POLICY ANALYSIS*
  Klein, S. P., Jovanovic, J., Stecher, B. M., McCaffrey, D., SHAVELSON, R. J., HAERTEL, E., SOLANOFLORES, G., Comfort, K.
  1997; 19 (2): 83-97