GUILLERMO SOLANO-FLORES

VITA

FEBRUARY, 2013

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Dr. Guillermo Solano-Flores specializes in educational measurement, assessment development, and the linguistic and cultural issues that are relevant to both the testing of linguistic minorities and international test comparisons. He is Full Professor of Bilingual Education and English as a Second Language at the School of Education of the University of Colorado at Boulder. A psychometrician by formal training, his work focuses on the development of alternative, multidisciplinary approaches that address linguistic and cultural diversity in testing. He has conducted research on the development, translation, localization, and review of science and mathematics tests; the design of software for computer-assisted scoring; and the development of assessments for the professional certification of science teachers. He has been principal investigator in several National Science Foundation-funded projects that have examined the intersection of psychometrics and linguistics in testing. 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. He has advised Latin American countries on the development of national assessment systems. Also, he has been the advisor to countries in Latina America, Asia, Europe, and Northern Africa on test translation issues for a an international study that investigates the feasibility of adapting and translating performance tasks into multiple languages. Current research projects investigate the measurement of mathematics academic language load in tests, formative assessment practices for English language learners in the science classroom, and the design and use of illustrations as a form of testing accommodation for English language learners with an approach that uses cognitive science, semiotics, and sociolinguistics in combination.

EDUCATION

1994 Postdoctorate, Measurement and Assessment Development, University of California, Santa Barbara.

1994 Ph.D., Education, specialty in methodology and measurement, University of California, Santa Barbara. Academic advisor: Richard J. Shavelson.

1989 M.A., Educational Psychology, National University of Mexico.

1978 B. A., Psychology, National University of Mexico.

PROFESSIONAL EXPERIENCE

2012- *Full Professor*, Bilingual Education and English as a Second Language, University of Colorado, Boulder.

2005-2012 *Associate Professor*, Bilingual Education and English as a Second Language, University of Colorado, Boulder.

2003-2005 *Principal Research Scientist*, American Institutes for Research, Palo Alto, California.

1994–2003 *Senior Research Associate,* Culture and Language in Education Program. Science Education Program, WestEd, San Francisco, CA. Conducting research on linguistic and cultural issues in assessment.

2004-2005 *Consultant*, Mid-Atlantic Equity Center.

2004-2005 *Assessment Consultant*, Partnership for Student Success in Science.

2000-2002 *Assessment Consultant*, Second Language Testing, Inc.

1998-2001 *Assessment Consultant*, Council of Chief State School Officers (CCSSO).

1996–99 *Assessment Consultant*, Stanford University, Stanford, CA. Designing science performance assessments.

1994–95 *Assessment Consultant*, University of California, Santa Barbara, CA. Designing science performance assessments and evaluating their psychometric properties.

1990–94 *Doctoral and Postdoctoral Student,* Education. University of California, Santa Barbara, CA.

1990–91 *Researcher,* MacArthur Foundation-Mexican Institute for Research on Family and Population. Designing and writing textbooks.

1988–90 *Search Committee Member,* School of Psychology, National University of Mexico. Designed strategies for college staff evaluation.

1988–89 *Academic Support Coordinator,* Graduate Division, School of Psychology, National University of Mexico. Designing exit exams for college students.

1983–86 *Chair,* Department of Laboratory Instruction, School of Psychology, National University of Mexico. Directing staff curriculum activities and implementation.

1976–89 *Professor,* School of Psychology, National University of Mexico. Teaching college psychology courses and methods courses for the MA program in educational psychology.

HONORS AND AWARDS

2012 Outstanding Faculty Graduate Advisor, 2011-2012, University of Colorado at Boulder. (Whole campus).

2010 Outstanding *Bilingual Research Journal* Reviewer Award, National Association for Bilingual Education.

2009 Outstanding *Educational Researcher* Reviewer Award, American Educational Research Association.

2008 List of final candidates for the National Assessment Governing Board in the category of Testing and Measurement Expert.

2007 Distinguished visiting professor, Universidad de San Carlos, Guatemala.

2006 Visiting professor of science, engineering and technology education, Universidad de las Américas, Puebla, México.

GRANTS

2011-2013 Principal Investigator, "Collaborative Research: Examining Formative Assessment Practices for English Language Learners in Science Classrooms." National Science Foundation, DRK-12 Program, ($179,466).

2011-2012 Principal Investigator, "Examining the Formal and Empirical Properties of Item Illustrations in the PISA Assessment." Leadership Education for Advancement and Promotion (LEAP) Associate Professor Growth Grant Program, University of Colorado at Boulder, ($3,500).

2010 Principal Investigator, "Technical Assistance for the Translation of Collegiate Learning Assessment performance assessments" (Subcontract). Organization for Economic Cooperation and Development, Council for Aid to Education). ($41,224)

2008-2011 Principal investigator, "Design and Use of Illustrations in Test Items as a Form of Testing Accommodations for English Language Learners in Science Assessment." National Science Foundation, DRK-12 Program, ($434,906).

2009 Principal Investigator, "Translation Review of NAEP Items from the 2007 Mathematics Assessment in Puerto Rico" (Subcontract). National Center for Education Statistics, American Institutes for Research.

2008 Principal investigator, "Examining the influence of teachers' linguistic background on the quality of academic achievement measures for English language learners." Leadership Education for Advancement and Promotion (LEAP) Grant Program, University of Colorado at Boulder, ($4,600).

2007 Principal Investigator, "Building Assessment Capacity in Panama." SENACyT Panamanian Ministry of Science, Technology, and Education. ($27,289)

2005-2006 Principal Investigator, "Teacher-Adapted Versus Linguistically Simplified Items in the Testing of English Language Learners." National Science Foundation. ($99,987).

2004-2005 Principal Investigator, "Linguistic Analysis of the Spanish Mexican Translation of the TIMSS-1995 Test." National Institute for Educational Evaluation (INEE), ($45,000).

2002-2005 Principal Investigator, "Cognitive, Sociolinguistic, and Psychometric Perspectives in Science and Mathematics Assessment for English Language Learners." National Science Foundation. ($662,000).

2000-2003 Co-Principal Investigator and Project Director, "Assessing the Cultural Validity of Science and Mathematics Assessments." National Science Foundation. ($935,000).

1995 Outstanding Dissertation Award. American Psychological Association, Division 15, Educational Psychology.

1992 Scholarship, Institute on Statistical Analysis for Educational Policy, American Educational Research Association.

1990-92 Ford Foundation Scholarship.

1990-93 National University of Mexico Scholarship.

1989 Master's Thesis Honorable Award, National University of Mexico.

1989-90 Scholarship, MacArthur Foundation-Mexican Institute for Research on Family and Population.

1978 Bachelor's Thesis Honorable Award, National University of Mexico.

SELECTED PROFESSIONAL ACTIVITIES

Technical Advisory Boards and Special Committees

- Chair, E.F. Lindquist Award Committee, American Educational Research Association (2012).
- Member of the National Council on Measurement in Education Standards and Test Use Committee, April-December, 2011.
- Expert, U.S. Department of Education's Race to the Top Assessment Program public meeting on including students with disabilities and English learners in assessment systems. August 10, 2011.
- Member of the Technical Steering Committee for the development of the student academic growth measures, Colorado Content Collaboratives, Colorado Department of Education, 2011.
- Assessment Advisor, Mathematics Coaching Supporting English Learners (MCSEL), EDC, 2011.
- Evaluator, Equity Assistance Center, University of Colorado at Boulder, 2009, 2010, 2011.
- Consultant on test translation and cultural adaptation, Council for Aid to Education — Assessment of Higher Education Learning Outcomes Generic Strand, 2009-2012.
- Member of the External Visiting Panel, Educational Testing Service, 2010-2012.
- Assessment Advisor, "Developing a Formative Assessment of Academic Reading Comprehension for English Language Learners: A Tool to Improve Teaching and Learning" Educational Testing Service-CRESST, 2011.
- Member of the Technical Advisory Board of the Spanish Academic Language Standards and Assessment (SALSA) National Advisory Council for the Wisconsin Center for Education Research, University of Wisconsin-Madison, 2011.
- Member of the Planning Committee, National Assessment of Educational Progress Technological Literacy Assessment Framework, 2009.
- External Evaluator, Equity Assistance Center, 2009, 2010, 2011.
- Reviewer: Ford Foundation-Evaluation of existing knowledge of performance assessments, 2009.

- Reviewer, CRESST report on test validity, designation, and test accommodations for English language learners, 2007-2008.
- Project evaluator, Council of Chief State School Officers, 2007-2008.
- Member, Partnership on English Language Learners, George Washington University, 2008.
- Assessment system evaluator, LLECE (Latin American System for the Assessment of Quality in Education), 2007-2008.
- Technical Advisory Board Member, *Match Paths and Pitfalls* (a project funded by the Institute of Education Sciences), 2006-2008.
- Technical Advisory Board Member, ONPAR (a project funded by the National Science Foundation), 2007.
- Technical Advisory Board Member, SUMA (a project funded by the National Science Foundation), 2007.
- Technical Advisory Board Member, Evaluation and Assessment Unit, University of Baja California, 2006-2009.
- Reviewer, CRESST report on test validity, designation, and test accommodations for English language learners, 2007-2008.
- Reviewer, Fulbright Scholarships Program, University of Colorado at Boulder, 2006-2007.
- Reviewer/Contributor, National Assessment of Educational Progress Science Framework (NAEP), 2005-2006.
- Reviewer of the English language development test of the state of Utah, 2006.
- Member of the Governmental Relations Committee, American Educational Research Association. 2003-2006.
- Technical Advisory Board member, National Institute for Educational Evaluation (Mexico). 2002-2009.
- Member of the Board of Directors, Industry Initiatives for Science and Math Education. 2003-2005.
- Translation Leader, California Science Standards Translation Project, California Science Project, 2000-2001.
- Technical Advisory Panel Member, Center for Applied Linguistics project for the development of National Assessment for Educational Progress standards for the assessment of foreign languages, 1999-2000.
- Technical Advisory Committee Member, CENEVAL (National Center for the Evaluation of Professions), Mexico, 1999-2002.
- Section Chair, Division G, American Educational Research Association, 2000.

Proposal Review Activities

- Social Sciences and Humanities Research Council (Canada), 2010, 2011.

- National Science Foundation, 2000-2005, 2007, 2008, 2010, 2011.
- Institute of Education Sciences, 2010, 2011.
- Fulbright Institute of International Relations, 2006, 2007.
- Latin American Regional Education Program (PREAL), 2002-2004.

Editorial Boards

- *Educational Measurement: Issues and Practice*, 1997-1999; 2006-2009.
- *Educational Researcher*, 2006-2009.
- *Bilingual Research Journal*, 2006-2010.
- *Revista Mexicana de Investigación Educativa* [*Mexican Journal of Educational Research*] (Mexico), 2006-2009.
- *Psicológica* (Spain), 2001-2009.

Journal Review Activities

- *TESL Canada Journal*, 2011, 2012.
- *Field Methods*, 2010-2011.
- *Bilingual Research Journal*, 2007-2011, 2012.
- *Educational Measurement: Issues and Practice*, 2005-2011.
- *Revista Mexicana de Investigación Educativa [Mexican Journal of Educational Research]*, 2006-2009, 2011
- *International Journal of Testing*, 2011.
- *Science*, 2010.
- *Educational Researcher*, 2005- 2010, 2012.
- *Educational Assessment*, 2008- 2009, 2012.
- *Journal of Teacher Education*, 2007.
- *Journal of Research in Science Teaching*, 2012.
- *Journal of Pragmatics*, 2007, 2009.
- *Review of Educational Research*, 2005-2009.
- *Teachers College Record*, 2005-2006.
- *Revista Electrónica de Investigación Educativa [Electronic Journal of Educational Research]*, 2006.
- *International Journal of Educational Policy, Research and Practice*, 2002.
- *Psicológica* (Spain), 2001.

PROFESSIONAL AFFILIATIONS

- American Educational Research Association

- National Council on Measurement in Education
- International Test Commission

PUBLICATIONS

Peer-Reviewed Journal Articles

Solano-Flores (Under review). Probabilistic approaches to examining linguistic features of test items and their effect on the performance of English language learners. *Applied Measurement in Education*, special issue: *Levels of Analysis in the Assessment of Linguistic Minorities*. Guest editors: Kadriye Ercikan & Guillermo Solano-Flores.

Solano-Flores, G., & Li, M. (In press). Generalizability theory and the fair and valid assessment of linguistic minorities. *Educational Research and Evaluation*, special issue on fairness issues in educational and psychological assessment. Editor: Hossein Karami.

Backhoff, E., Contreras-Niño, L., & Solano-Flores, G. (2012). *On the pertinence of assessing indigenous students in their own language.* (Sp.) *Diálogos en Educación, 3*(6), 1-13.

Kachchaf, R., & Solano-Flores, G. (2012). Rater language background as a source of measurement error in the testing of English language learners. *Applied Measurement in Education, 25,* 167-172.

Solano-Flores, G., & Li, M. (2009). Language variation and score variation in the testing of English language learners, native Spanish speakers. *Educational Assessment, 14, 1-15.*

Solano-Flores, G., Backhoff, E., & Contreras-Niño, L.A. (2009). Theory of test translation error. *International Journal of Testing, 9,* 78-91.

Solano-Flores, G., & Li, M. (2009). Generalizability of cognitive interview-based measures across cultural groups. *Educational Measurement: Issues and Practice, 28* (2), 9-18.

Solano-Flores, G. (2008). Who is given tests in what language by whom, when, and where? The need for probabilistic views of language in the testing of English language learners. *Educational Researcher, 37* (4), 189-199.

Solano-Flores, G., & Li, M. (2008). Examining the dependability of academic achievement measures for English-Language Learners. *Assessment for Effective Intervention, 33*(3), 135-144.

Solano-Flores, G., Contreras-Niño, L.A., & Backhoff, E. (2006). Test translation and adaptation: Lessons learned and recommendations for countries participating in TIMSS, PISA, and other international comparisons. *REDIE: Electronic Journal of Educational Research, 8*(2). [Sp.] http://redie.uabc.mx/vol8no2/contents-solano2.html

Solano-Flores, G. (2006). Language, dialect, and register: Sociolinguistics and the estimation of measurement error in the testing of English-language learners. *Teachers College Record. 108*(11), 2354–2379.

Solano-Flores, G., & Li, M. (2006). The use of generalizability (G) theory in the testing of linguistic minorities. *Educational Measurement: Issues and Practice 25*(1), 13-22.

Solano-Flores, G., & Trumbull, E. (2003). Examining language in context: The need for new research and practice paradigms in the testing of English-language learners. *Educational Researcher, 32*(2), 3-13.

Solano-Flores, G., Trumbull, E., & Nelson-Barber, S. (2002). Concurrent development of dual language assessments: An alternative to translating tests for linguistic minorities. *International Journal of Testing, 2*(2), 107-129.

Solano-Flores, G., & Nelson-Barber, S. (2001). On the cultural validity of science assessments. *Journal of Research in Science Teaching, 38(*5*),* 553-573.

Solano-Flores, G., Shavelson, R. J., & Schneider, S. A. (2001). Expanding the notion of assessment shell: From task development tool to instrument for guiding the process of assessment development. *REDIE: Electronic Journal of Educational Research, 3*(1). http://redie.ens.uabc.mx.

Solano-Flores, G. (2000). Teaching and assessing science process skills in physics: The "Bubbles" task. *Science Activities, 37* (1), 31-37.

Stecher, B. M., Klein, S. P. Solano-Flores, G. McCaffrey, D., Shavelson, R. J., & Haertel, E. (2000). The effects of content, format, and inquiry level on science performance assessment scores. *Applied Measurement in Education, 13(2), 139-160*.

Solano-Flores, G., Raymond, B., Schneider, S. A., & Timms, M. (1999). Management of scoring sessions in alternative assessment: The computer-assisted scoring approach. *Computers & Education, 33,* 47-63.

Solano-Flores, G., Jovanovic, J., Shavelson, R. J., & Bachman, M. (1999). On the development and evaluation of a shell for generating science performance assessments. *International Journal of Science Education, 21*(3), 293–315.

Shavelson, R. J., Solano-Flores, G., & Ruiz-Primo, M.A. (1998). Toward a science performance assessment technology. *Evaluation and Program Planning*. *21*(2), 171-184.

Solano-Flores, G., & Shavelson, R. J. (1997). Development of performance assessments in science: Conceptual, practical and logistical issues. *Educational Measurement: Issues and Practice, 16*(3), 16-25.

Klein, S. P., Jovanovic, J., Stecher, B. M., McCaffrey, D., Shavelson, R. J., Haertel, E., Solano-Flores, G., & Comfort, K. (1997). Gender and racial/ethnic differences on performance assessments in science. *Educational Evaluation and Policy Analysis, 19*(2), 83-97.

Jovanovic, J., Solano-Flores, G., & Shavelson, R.J. (1994). Science performance assessments. Will gender make a difference? *Education and Urban Society, 26*(4), 352-366.

Solano-Flores, G. (1993). Item structural properties as predictors of item difficulty and item association. *Educational and Psychological Measurement, 53*(1), 19-31.

Solano-Flores, G. (1986). How to conduct low-cost experimental investigations in psychology. (Sp.) *Revista Mexicana de Psicología, 2*, 174-181.

Solano-Flores, G. (1979). Obtaining scientific information and literature at a very low-cost in the school of psychology. (Sp.) *Boletín de Enseñanza y Experimentación en Psicología, 1*, 13-15.

Solano-Flores, G. (1984). A computer program for determining an optimal instructional sequence. (Sp.) *Comunicaciones Técnicas de la Facultad de Psicología*, No. 17.

Solano-Flores, G. (1984). The analogic pantograph and the continuous record of behavior. (Sp.) *Revista Mexicana de Análisis de la Conducta, 2*, 175-177.

Solano-Flores, G. (1983). Critical review: Precision Teaching: A Practical Guide for Educational Evaluation. (Sp.) *Revista Mexicana de Análisis de la Conducta, 10*(2), 193-202.

Solano-Flores, G. (1983). Instructional content analysis, the algebraic technique, and the automatic analysis of instructional content. (Sp.) *Revista de la Educación Superior, 46*, 50-76.

Solano-Flores, G. (1982). Structural educational analysis: advantages and applications. (Sp.) *Acta Psicológica Mexicana, 4*, 9-21.

Solano-Flores, G. (1981). An algebraic approach for determining an optimal sequence of instruction. (Sp.) *Enseñanza e Investigación en Psicología, 2(*14), 307-324.

Solano-Flores, G. (1981). Model for the continuous description of motion and position. *Perceptual and Motor Skills, 53*, 43-49.

Books

Solano-Flores, G. (In Progress). *Assessing English language learners: Theory and practice*.

Backhoff, E., Contreras-Niño, L.A., & Solano-Flores, G. (2011). The theory of test translation error and the TIMSS and PISA international assessments. (Sp.) Mexico: National Institute of Educational Evaluation.

Basterra, M. R., Trumbull, E., & Solano-Flores, G. (Eds.), (2011). *Cultural validity in assessment: Addressing linguistic and cultural diversity*. New York: Routledge.

Solano-Flores, G., Backhoff-Escudero, E., & Contreras-Niño, L. A. (2006). Methodology for evaluating the quality of test translations in international test comparisons: The case of Mexico, TIMSS-1995. [Sp.]. Mexico: National Institute for Educational Evaluation (INEE).

Solano-Flores, G., Lara., J., Sexton, U., & Navarrete, C. (2001). *Testing English language learners: A sampler of student responses to science and mathematics test items*. Washington, DC: Council of Chief State School Officers.

Kusimo, P., Ritter, M.G., Busick, K., Ferguson, C., Trumbull, E., & Solano-Flores, G. (2000). *Making assessment work for everyone: How to build on student strengths*. Regional Educational Laboratories. http://www.sedl.org/pubs/tl05/

Martinez-Rizo, F., Backhoff, E., Castañeda, S., De la Orden, A., Schmelkes, S., Solano-Flores, G., Tristán, A., & Vidal, R. (2000). *Quality Standards for Educational Evaluation Instruments*. México: CENEVAL.

Solano-Flores, G. (1991). *Logical Test Design*. (Sp.) Mexico: Trillas Publishing Company.

Solano-Flores, G. (1983). *Principles of Structural Analysis in Education: Methods and Techniques in Education.* (Sp.) Mexico: Trillas Publishing Company. (Reprinted in 1989, 1993, and 1994).

Book Chapters and Encyclopedia Entries

Ruiz-Primo, M. A., Solano-Flores, G., & Li, M. (Under review). Formative assessment as a process of interaction through language: A framework for the inclusion of English language learners.

Solano-Flores, G., and Gustafson, M. (2013). Assessment of English language learners: A critical, probabilistic, systemic view. In M. Simon, K. Ercikan, & M. Rousseau (Eds.), *Improving Large Scale Assessment in Education: Theory, Issues, and Practice* (pp. 87-109). New York: Taylor & Francis: Routledge.

Solano-Flores, G., Contreras-Niño, L.A., & Backhoff, E. (2013). The measurement of translation error in PISA-2006 items: An application of the theory of test translation error. In Prenzel, M., Kobarg, M., Schöps, K., & Rönnebeck, S. (Eds.), *Research in the Context of the Programme for International Student Assessment* (pp. 71-85). Springer Verlag.

Solano-Flores, G. (2012). Linguistic and cultural adaptation of academic achievement tests. Invited chapter in *Ten Years of Educational Evaluation* (pp. 66-68). Mexico City, Mexico: National Institute for Educational Evaluation. (Sp.). http://www.educacionyculturaaz.com/libros/inee-una-decada-de-evaluacion-2002-2012/

Solano-Flores, G. (In Press). Successive test development. In C.R. Reynolds, R.W. Kamphaus, C. DiStefano (Eds.), *Encyclopedia of psychological and educational testing: Clinical and psychoeducational applications.* New York: Oxford University Press.

Solano-Flores, G. (In Press). Simultaneous test development. In C.R. Reynolds, R.W. Kamphaus, C. DiStefano (Eds.), *Encyclopedia of psychological and educational testing: Clinical and psychoeducational applications.* New York: Oxford University Press.

Solano-Flores, G. (2011). Language issues in mathematics and the assessment of English language learners. In K. Tellez, J. Moschkovich, & M. Civil (Eds.), *Latinos/as and mathematics education: Research on Learning and Teaching in Classrooms and Communities,* (pp. 283-314). Charlotte, NC: Information Age Publishing.

Solano-Flores, G. & Soltero-González, L. (2011). Meaningful assessment in linguistically diverse classrooms. In B. B. Flores, R. H. Sheets, & E. R. Clark (Eds.), *Teacher Preparation for Bilingual Student Populations: Educar para Transformar* (pp.146-163). *New York: Routledge.*

Solano-Flores, G. (2011). *Assessing the cultural validity of assessment practices: An introduction.* Basterra, In M. R., Trumbull, E., & Solano-Flores, G. (Eds.). *Cultural validity in assessment: Addressing linguistic and cultural diversity* (pp. 3-21). New York: Routledge.

Trumbull, E., & Solano-Flores, G. (2011). Addressing the language demands of mathematics assessments: Using a language framework and field-based research findings. In Basterra, M. R., Trumbull, E., & Solano-Flores, G. (Eds.), *Cultural validity in assessment: Addressing linguistic and cultural diversity* (pp. 218-253). New York: Routledge.

Trumbull, E., & Solano-Flores, G. (2011). The role of language in assessment. In Basterra, M. R., Trumbull, E., & Solano-Flores, G. (Eds.), *Cultural validity in assessment: Addressing linguistic and cultural diversity* (pp. 22-45). New York: Routledge.

Trumbull, E., Basterra, M.R., & Solano-Flores, G. (2011). *Reflections on the promise of cultural validity in assessment.* In Basterra, M. R., Trumbull, E., & Solano-Flores, G. (Eds.), (2011). *Cultural validity in assessment: Addressing linguistic and cultural diversity* (pp 277-287). New York: Routledge.

Solano-Flores, G. (2010). Function and form in research on language and mathematics education. In Moschkovich, J. (Ed.), *Language and mathematics in education: Multiple perspectives and directions for research* (pp. 113–149). Charlotte, NC: Information Age Publishing, Inc.

Aguirre-Muñoz, Z., & Solano-Flores, G. (2009). Accountability and educational assessment for Latino, English language learning students: Improving practices through multidisciplinary approaches. In E. G. Murillo Jr., S. A. Villenas, R. T. Galván, J. Sánchez Muñoz, C. Martínez, & M. Machado-Casas (Eds.), *Handbook of Latinos and Education* (pp 503-522). New York: Routledge.

Solano-Flores, G. (2009). The testing of English language learners as a stochastic process: Population misspecification, measurement error, and overgeneralization. In K. Ercikan & W. M. Roth (Eds.), *Generalizing from Educational Research* (pp.33-48). New York: Routledge.

Solano-Flores, G. (2008). English language learners. In C. Clauss-Ehlers (Ed.), *Encyclopedia of cross-cultural school psychology*. Springer.

Solano-Flores, G., & Trumbull, E. (2008). In what language should English language learners be tested? In R. J. Kopriva. (Ed.), *Improving testing for English language learners* (pp. 169-200). New York: Routledge.

Schneider, S., Daehler, K. R., Hershbell, K., McCarthy, J., Shaw, J., & Solano-Flores, G. (2008). Developing a national science assessment for teacher certification: Practical lessons learned. In, L. Ingvarson & John Hattie, (Eds.*), Assessing teachers for professional certification, Volume II: The first ten years of the National Board for Professional Teaching Standards*.

Johnson, E. C., Kirkhart, K. E., Madison, A. M., Noley, G. B. & Solano-Flores, G. (2008). The impact of narrow views of scientific rigor on evaluation practices for underrepresented groups. In N. L. Smith & P. R. Brandon (Eds.), *Fundamental issues in evaluation*. (pp. 197-218). New York: Guilford.

Klingner, J. K., & Solano-Flores, G. (2007). Cultural responsiveness in response-to-intervention models. In C. C. Laitusis & L. L. Cook (Eds.), *Large-scale assessment and accommodations: What works?* Arlington, VA: Council for Exceptional Children. (pp. 229-241).

Solano-Flores, G. (2004). The use of performance tasks in the assessment of academic achievement: Methods and possibilities. In S. Castañeda (Ed.), *Education, learning, and cognition: Theory into practice*. México: El Manual Moderno. (Sp.)

Commissioned Papers and Testimonies

Solano-Flores, G. (2011). *Comments on the Revised Draft of the Testing Standards*. Summary of the testimony presented at the Open NCME Hearing on the New Version of the APA/AERA/NCME Standards for Educational and Psychological Testing, Annual Meeting of the National Council of Measurement in Education. New Orleans, LA, April 10, 2011. (These comments were also submitted at http://teststandards.net/Revision.htm on April 18, 2011).

Solano-Flores, G. (2011). Participation as an expert on the assessment of English language learners in the public hearing on the Race to the Top Assessment program organized by the U.S. Department of Education. August 10, 2011.

Solano-Flores, G. (2007). *Function and form in the research on language and mathematics education.* White paper for the Spencer Foundation.

Doctoral Dissertation

Solano-Flores, G. (1994). *A Logical model for the development of science performance assessments.* Doctoral Dissertation. University of California, Santa Barbara. January. Academic Advisor: Richard J. Shavelson.

Technical Reports

Solano-Flores, G. (2012). *Translation accommodations framework for testing English language learners in mathematics*. Developed for Smarter Balanced Assessment Consortium (SBAC). September 18, 2012. http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/09/Translation-Accommodations-Framework-for-Testing-ELL-Math.pdf

Backhoff, E., Solano-Flores, G., & Contreras-Niño, L. A. (2012). *Analysis of a 30-item test administered to pre-school Mayan students: Sixth research report*. Project: "Feasibility of translating and adapting EXCALE pre-school tests into the Mayan language." Submitted to the National Institute for Educational Evaluation, Mexico.Ensenada, Baja California (Mexico): Universidad Autónoma de Baja California, October, 2012. [Sp.]

Backhoff, E., Contreras-Niño, L.A. , & Solano-Flores, G. (2012). *Pilot administration of 30 Excale-00 mathematical thinking to Mayan populations: Fifth research report.* Submitted to the National Institute for Educational Evaluation, Mexico. August.

Backhoff, E., Solano-Flores, G., & Contreras-Niño, L. A. (2012). Final report: "Feasibility of translating and adapting EXCALE pre-school tests into the Mayan language." Submitted to the National Institute for Educational Evaluation, Mexico. Ensenada, Baja California (Mexico): Universidad Autónoma de Baja California, December, 2012.

Chía, M., & Solano-Flores, G. (2012). Bueno Equity Assistance Center (Region VIII): Year 3 Evaluation Report. *University of Colorado at Boulder,* September 24.

Backhoff, E., Solano-Flores, G., & Contreras-Niño, L. A. (2011). *Selection, analysis, and adaptation of ten Excale-00/Mathematical Thought item specifications for Mayan Indian populations: Second research report*. Submitted to the National Institute for Educational Evaluation, Mexico. November, 2011.

Backhoff, E., Solano-Flores, G., & Contreras-Niño, L. A. (2011). *Selection, analysis, and adaptation of ten Excale-00/Mathematical Thought item specifications for Mayan Indian population: Third research report*. Submitted to the National Institute for Educational Evaluation, Mexico. December, 2011.

Solano-Flores, G. (2011). Third Year Report on the Project, "Design and Use of Illustrations in Test Items as a Form of Accommodation for English Language Learners in Science and Mathematics Assessment." Submitted to the National Science Foundation, DRK-12 program. July 2.

Chia, M., & Solano-Flores, G. (2010). *Bueno Equity Assistance Center (Region VIII): Year 2 Evaluation Report*. University of Colorado at Boulder, September 30.

Solano-Flores, G., Chía, M., Shavelson, R. J., & Kurpius, A. (2010). Translation guide. Council for Aid to Education —. Assessment of Higher Education Learning Outcomes Generic Strand. Document GS.36. June.

Solano-Flores, G., Chía, M., Shavelson, R. J., & Kurpius, A. (2010). *Cognitive labs guidelines.* Council for Aid to Education —. Assessment of Higher Education Learning Outcomes Generic Strand. Document GS.37. May.

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Conference Papers

Del Rosal, K., & Solano-Flores, G. (Accepted) Sampling maximum performance in the evaluation of science teachers' formative assessment practices for English language learners. Paper to be bresented at the Annual Conference of the American Educational Research Association, San Francisco, California, April 27 – May 1, 2013.

Wang C. & Solano-Flores, G. (Accepted). The effect of illustrations on the performance of students in a science test. Poster to be presented at the Annual Conference of the American Educational Research Association, San Francisco, California, April 27- May 1, 2013.

Solano-Flores, G. (Accepted). Visual displays as aids for English language learners. Paper to be presented at the National Council on Measurement in Education annual meeting. San Francisco, CA, April, 2013. Symposium, *Improving the Assessment of English Language Learners: Test Administration formats, Accommodations, and Score Reporting*, organized by Steve Sireci.

Solano-Flores & Wang, C. (2012). *The design and use of test illustrations in international test comparisons*. Paper presented at the 8th conference of the International Test Commission. Amsterdam, July 3-5, 2012.

Solano-Flores, G. (2012). *Improved approaches for evaluating testing accommodations for English language learners*. Paper presented at the symposium, "Assessment of Academic Achievement of Linguistic Minorities in Canada and the United States," organized by Kadriye Ercikan and Dallie Sandilands, International Test Commission's Conference Amsterdam, July 3-5, 2012.

Solano-Flores, G. (2012). *A conceptual framework on the testing of linguistically diverse populations*. Paper presented at the symposium, "Testing Students from Diverse Linguistic Backgrounds," organized by Paula Elousa, International Test Commission's Conference Amsterdam, July 3-5, 2012.

Solano-Flores, G., Nguyen-Le, K., & Wang, C. (2012). *Linking generalizability and effectiveness in the evaluation of testing accommodations for English language learners*. Paper presented at the symposium, "Limits of Generalizing in Psychological Research," organized by Kadriye Ercikan, International Congress of Psychology in Cape Town, South Africa, July 22-27, 2012.

Solano-Flores, G. (2012). *Probabilistic approaches for examining the impact of item linguistic features on student performance*. Paper presented the annual conference of the National Council on Measurement in Education. Vancouver, British Columbia, Canada April 12 - 16, 2012.

Wang, C., Chia, M., Kachchaf, R., & Solano-Flores, G. (2012). *Item illustration complexity and the performance of English language learners in a science test*. Paper presented at the Annual Conference of the American Educational Research Association, Vancouver, Canada, April 13-17, 2012.

Kachchaf, R., & Solano-Flores, G. (2012). *Comparing English language learners and mainstream students: the case of multiple-choice science items with and without vignette illustrations*. Paper presented at the Annual Conference of the American Educational Research Association, Vancouver, Canada, April 2012.

Solano-Flores, G. (2011). *Development of illustrations as image supports for English language learners in large-scale testing: A report on the procedure for designing vignette illustrations*. Paper presented at the CADRE ELL-STEM Roundtable session, "Advancing English Language Learners in Science and Math: Realizing the Promise," at the annual meeting of the American Educational Research Association, April 7-11.

Solano-Flores, G., & Wang, C. (2011). *Conceptual framework for analyzing and designing illustrations in science assessment: Development and use in the testing of linguistically and culturally diverse populations*. Paper presented the Annual Conference of the National Council on Measurement in Education, New Orleans, LA, April 7-11.

Wang, C., & Solano-Flores, G. (2011). *The use of illustrations in large-scale science assessment: A comparative study*. Paper presented at the annual meeting of the American Educational Research Association, April 7-11.

Wang, C., & Solano-Flores, G. (2011). *Illustrations with graphic devices in large-scale science assessments: An exploratory cross-cultural study on students' perception and interpretation*. Paper presented at the annual meeting of the National Council on Measurement in Education, April 7-11.

Prosser, R., & Solano-Flores, G. (2011). *Examining problem solving strategies on multiple-choice science items among English language learners through cognitive interviews*. Paper presented at the annual meeting of the American Educational Research Association, April 7-11.

Solano-Flores, G. (2010). *The use of pictorial supports as an accommodation for increasing access to test items for students with limited proficiency in the language of testing*. Paper presented at the 7th Conference of the International Test Commission. Hong Kong, July 19-21, 2010.

Solano-Flores, G., Prosser, R. R., Barnett-Clarke, C., & Gluckman, M. A. (2010). *Examining academic language in mathematics test items for English language learners*. Paper presented at the annual meeting of the American Educational Research Association Denver, April 30-May 4. Symposium, Rethinking the Mathematics and Language Connection for Latinos/as and ELLs: Findings from the *Math Pathways & Pitfalls* Project.

Wang, C., & Solano-Flores, G. (2010). *A virtual co-rater approach for evaluating scoring quality in teacher portfolio-based assessment*. Paper presented at the Annual Conference of the American Educational Research Association, Denver, Colorado, April 30-May 4.

Prosser, R. R., & Solano-Flores, G. (2010). *Including English language learners in the process of test development: a study on instrument linguistic adaptation for cognitive validity*. Paper presented at the Annual Conference of the National Council of Measurement in Education, Denver, Colorado, April 29-May 3.

Solano-Flores, G. (2010). *Vignette illustrations as a form of testing accommodation for English language learners: A design methodology for use in large-scale science assessment*. Paper presented at the Annual Conference of the National Council of Measurement in Education, Denver, Colorado, April 29-May 3.

Solano-Flores, G., Contreras-Niño, L.A., & Backhoff. (2009). *Measuring translation error in PISA-2006 translated items: Theoretical foundations and empirical evidence in support of a multidimensional, multidisciplinary test translation review*. Paper presented at the PISA Research Conference, Kiel, Germany, 14-16 September.

Contreras-Niño, L.A., Solano-Flores, G., & Backhoff. (2009). *Applying the theory of test translation error in the review of test translations in international assessment programs*. Poster proposal submitted to the PISA Research Conference, Kiel, Germany, 14-16 September.

Prosser, R., & Solano-Flores, G. (2009). *Examining the effect of rater language background on the quality of the scoring of English language learner responses to open-ended mathematics test items*. Paper presented at the annual meeting of the American Educational Research Association, April.

Solano-Flores, G. (2009). *A conceptual framework for a research agenda on validity in the testing of English language learners*. Paper to be presented at the divisional symposium, Validity in ELL Assessment: Challenges and Promising Approaches (structured poster session) of the annual meeting of the American Educational Research Association, April, 2009; organized by Joan Herman, Division D.

Solano-Flores, G. (2008). *A conceptual framework for examining the assessment capacity of countries in an era of globalization accountability and international test comparisons*. Paper presented at the 6th Conference of the International Test Commission. Liverpool, UK, July 16-18, 2008.

Solano-Flores, G. (2008). *Cultural validity and student performance on science assessments*. Paper presented at the Symposium, Culture and Context in Large-Scale Assessments: Obstacles or Opportunities? organized by Sharon Nelson-Barber and Larry Sutter. Annual meeting of the American Educational Research Association. New York, NY, April 24-28.

Solano-Flores, G. (2008). Testing as a stochastic process: The case of English language learners (ELLs). Paper presented at the symposium, *Generalizing from educational research: Beyond the quantitative–qualitative opposition*, organized by Kadriye Ercikan and Wolff-Michael Roth. Annual meeting of the American Educational Research Association. New York, NY, April 24-28.

Li, M., Solano-Flores, G., Kwon, M., & Tsai, S. P. (2008, April). *"It's asking me as if I were the mother:" Examining how students from different groups interpret test items*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Baltimore, MD.

Solano-Flores, G., Li, M., Speroni, C., Rodriguez, J., Basterra, M., & Dovholuk, G. (2007). *Comparing the properties of teacher-adapted and linguistically-simplified test items for English language learners*. Paper presented at the annual meeting of the American Educational Research Association. Chicago, IL. April 9-13.

Solano-Flores, G. (2006). *Theory of test translation error*. Paper presented at the 5th Conference of the International Test Commission: Psychological and Educational Test Adaptation Across Languages and Cultures: Building Bridges Among People. Brussels, Belgium, July 6-8.

Solano-Flores, G., Contreras-Niño, L.A., Backhoff-Escudero, E., & Andrade, E. (2006). *Development and evaluation of software for test translation review sessions*. Poster presented at the 5th Conference of the International Test Commission: Psychological and Educational Test Adaptation Across Languages and Cultures: Building Bridges Among People. Brussels, Belgium, July 6-8.

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Kidron, Y., & Solano-Flores, G. (2006). *Formal and judgmental approaches in the analysis of test item linguistic complexity: A comparative study*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, California, April 8-12.

Solano-Flores, G., Li, M., & Kwon, M. (2005). *The use of generalizability (G) theory in the analysis of wide open-ended interviews in assessment research with multiple cultural groups*. Paper presented at the 11th Biennial Conference of the European Association for Research on Learning and Instruction. Nicosia, Cyprus, August 23-27.

Solano-Flores, G. (2005). *Examining test item meaningfulness across cultural groups.* Paper presented at the 11th Biennial Conference of the European Association for Research on Learning and Instruction. Nicosia, Cyprus, August 23-27.

Solano-Flores, G., Contreras-Niño, L. A., & Backhoff-Escudero, E. (2005). *The Mexican translation of TIMSS-95: Test translation lessons from a post-mortem study*. Paper presented at the annual meeting of the National Council on Measurement in Education. Montreal, Quebec, Canada, April 11-15.

Solano-Flores, G., Speroni, C., & Sexton, U. (2005). *The process of test translation: Advantages and challenges of a socio-linguistic approach.* Paper presented at the annual meeting of the American Educational Research Association. Montreal, Quebec, Canada, April 11-15, 2005.

Solano-Flores, G. (2004). *Language, dialect, and register: Sociolinguistics and the estimation of measurement error in the testing of English-language learners.* Paper presented at the Conference, "English Language Learners Struggling to Learn: Emergent Research on Linguistic Differences and Learning Disabilities" organized by the *National Center for Culturally Responsive Educational Systems (NCCRESt).* Arizona State University in Tempe, AZ, November 18-19, 2004.

Solano-Flores, G. (2004). *"Scientifically-based"? The dangers of "methodologically-rigorous" but theoretically-weak practices in the testing of linguistic and cultural minorities.* Symposium paper accepted for presentation at the annual meeting of the American Evaluation Association. Atlanta, GA, November 3-6, 2004.

Solano-Flores, G. (2004). *Testing linguistic minorities across languages.* Paper presented at the 28th International Congress of Psychology. Beijing, China, August 8-13.

Solano-Flores, G. (2004). *Cultural validity in assessment: Major findings*. Paper presented at the 28th International Congress of Psychology. Beijing, China, August 8-13.

Solano-Flores, G. (2003). *Socio-cultural context and its influence on test taking: Implications for program evaluation*. Symposium paper presented at the annual meeting of the American Evaluation Association. Reno, NV, November 5-8, 2003.

Solano-Flores, G. (2003). *The multidimensionality of test review and test design: A conceptual framework for addressing linguistic and cultural diversity in testin*g. Paper presented at the 10th Biennial Conference of the European Association for Research on Learning and Instruction. Padova, Italy, August 26-30.

Solano-Flores, G. (2003). *Examining the dependability of performance measures for English language learners*. Paper presented at the Validity and Accommodations Psychometric Conference. University of Maryland, College Park, MD, August 4-5.

Solano-Flores, G., Lara, J., & Li, M. (2003). *Assessment comparability across languages: Testing linguistic minorities*. Symposium paper presented at the annual meeting of the National Council on Measurement in Education. Chicago, IL, April 22-24.

Solano-Flores, G., Trumbull, E., & Kwon, M. (2003). *The metrics of linguistic complexity and the metrics of student performance in the testing of English language learners*. Symposium paper presented at the 2003 annual meeting of the American Evaluation Research Association. Chicago, IL, April 21-25.

Solano-Flores, G, Kwon, M., & Trumbull, E. (2003). *Analyzing the linguistic complexity of test items: Theoretical and methodological issues*. Paper presented at the RACE (Relevance of Assessment and Culture in Evaluation) conference organized by the Arizona State University. Tempe, Arizona, January 10-11.

Solano-Flores, G., & Lara, J. (2003). *Assessment Comparability Across Languages: Testing Linguistic Minorities*. Paper for the symposium, Construct Comparability Research: Methodological Issues and Results. Paper presented at the annual meeting of the National Council on Measurement in Education. Chicago, IL, April 21-25

Solano-Flores, G. (2002). *Equity in standardized testing: What we know and what is yet to be done*. Paper presented at the Fifth National Conference on Educational Research, Ensenada, Baja California (Mexico), October, 28-31.

Solano-Flores, G. (2002). *Towards a Methodology for Equitable Test Design*. Paper presented at the Second Annual Conference of the Institute for the Study and Promotion of Race and Culture. Boston, MA, October 11-12.

Solano-Flores, G. (2002). *Cross-language assessment development for English language Learners*. Paper presented at the annual meeting of the Science Assessment for Limited English Proficient Students group of the Council of Chief State School Officers. June 4-7.

Solano-Flores, G. (2002). *Cultural validity: A sociocultural perspective in educational measurement*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April 1-5.

Sexton, U., & Solano-Flores, G. (2002). *Cultural validity in assessment development: A cross-cultural study on the interpretation of math and science items*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April 1-5.

Solano-Flores, G., and López-Freeman, M. A. (2002). *Development and use of the Spanish version of the California Science Education Standards*. Paper presented at the California Association of Bilingual Education 27th Annual Conference. San José, CA, January 31-February 3.

Solano-Flores, G., and Trumbull, E. (2002). *Better and more equitable approaches for assessing English language learners*. Paper presented at the California Association of Bilingual Education 27th Annual Conference. San José, CA, January 31-February 3.

Trumbull, E., & Solano-Flores, G. (2001). *Language, culture, and assessment: New approaches*. Paper presented at the California Mathematics Council-Northern Section Conference. Asilomar, California, November 30-December 2.

Solano-Flores, G. (2001). *World views and test views: the relevance of cultural validity*. Paper presented at the European Association of Research in Learning and Instruction. Fribourg, Switzerland, August 28-September 1.

Sexton, U., & Solano-Flores, G. (2001). *A Comparative Study of Teachers' Cultural Perspectives Across Different Cultures*. Poster presented at the annual meeting of the American Educational Research Association. Seattle, WA, April 2-6.

Solano-Flores, G. (2001). *Assessing the knowledge and skills of limited English proficient students*. Paper presented at the 15th Annual Texas Assessment Conference 12th Annual Texas Association of Collegiate Personnel Conference. Austin, TX, February 11-14.

Lagunoff, R., Solano-Flores, G., Sexton, U., & Nelson-Barber (2001). *English language ability and math and science assessments*. Paper presented at the California Association for Bilingual Education 2001 Conference. Los Angeles, California, January 31-February 3.

Solano-Flores, G. & Nelson-Barber, S. (2000). *Development of hands-on mathematics activities that honor indigenous, traditional Yup'ik knowledge*. Paper presented at the National Conference on Aboriginal Education, "Coming Together; Sharing our Research, Practice and Indigenous Knowledge."Winnipeg, Manitoba, Canada, October 18-21.

Solano-Flores, G. (2000). *Promoting equitable assessment in science*. Paper presented at the Teacher Institute of the Guam Department of Education. Hagátña, Guam, September 1-3.

Solano-Flores, G. (2000). *Recent advances in science assessment*. Keynote speech given at the Teacher Institute of the Guam Department of Education. Hagátña, Guam, September 1-3.

Solano-Flores, G. & Nelson-Barber, S. (2000). *Same skills, different cultures: Yup'ik and Pacific Islander approaches to promoting mathematics skills*. Workshop paper presented at the 17th Annual Pacific Educational Conference, "Pacific Communities: Lifelong Learners." Koror, Republic of Palau, July 25-27.

Solano-Flores, G. & Nelson-Barber, S. (2000). *Attaining assessment cultural validity: The perspective of assessment development*. Paper presented at the Relevance of Assessment and Culture in Evaluation Meeting organized by the Arizona State University. Tempe, AZ, January.

Solano-Flores, G., Trumbull, E., & Nelson-Barber, S. (2000). *Evaluation of a model for the concurrent development of two language versions (English and Spanish) of a mathematics assessment in a bilingual program*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April.

Solano-Flores, G., Lara, J., & Sexton, U. (2000). *A comparison of English language learners' responses to science prompts in English and in their first languages*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April.

Solano-Flores, G. & Nelson-Barber, S. (2000). *Cultural validity of assessments and assessment development procedures*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April.

Solano-Flores, G. (2000). *Assessment support for bilingual teachers and teachers of English language learners*. Paper presented at the 25th Annual Conference of the California Association for Bilingual Education. San Francisco, CA, March 20-23.

Solano-Flores, G., & Nelson-Barber, N. (1999). *A model for developing culturally-responsive assessments*. Paper presented at the at the National School Conference Institute First annual Conference on Hispanic American Education. San Antonio, Texas, April 16-17.

Solano-Flores, G., & Nelson-Barber, N. (1999). *Developing culturally-responsive science assessments*. Paper presented at the annual meeting of the National Association for the Research of Science Teaching. Boston, Massachusetts, March 28-31.

Solano-Flores, G., & Nelson-Barber, N. (1999). *Promoting equity and fairness in testing from the start: Developing culturally-responsive assessments*. Paper presented at the Meeting of the Center for Research of Students Placed at Risk. El Paso, Texas, January 20-23.

Solano-Flores, G. (1998). *The challenge of assessing English language learners*. Invited symposium. annual meeting of the National Council for Measurement in Education, San Diego, CA, April 13-17.

Stecher, B.M., Klein, S. P., Solano-Flores, G., McCaffrey, D., Robyn, A., Shavelson, R.J., & Haertel, E. (1998). *Do content, format, and level of inquiry affect scores on open-ended science tasks?* Paper presented at the annual meeting of the American Educational Research Association, April 13-17. San Diego, CA.

Shavelson, R. J., Solano-Flores, G., & Ruiz-Primo, M.A. (1997). *Toward a science performance assessment technology*. Paper presented at the Seventh EARLI Conference. Athens, Greece, August 26-30.

Solano-Flores, G., Raymond, B., & Schneider, S. A. (1997). *Computer-assisted scoring: Can technology enhance the process of portfolio scoring?* Paper presented at the annual meeting of the American Educational Research Association. Chicago, IL, March 24-28.

Solano-Flores, G. (1997). *The use of a structural approach and a computer-aided scoring program for scoring portfolios in art teacher certification assessment*. Paper presented at the annual meeting of the American Educational Research Association. Chicago, IL, March 24-28.

Solano-Flores, G., Shavelson, R. J., Ruiz-Primo, M.A., Schultz, S. E., Wiley, E., & Brown, J. H. (1997). *On the development and scoring of observation and classification science performance assessments*. Paper presented at the annual meeting of the American Educational Research Association. Chicago, IL, March 24-28.

Druker, S., Solano-Flores, G., Brown, J., & Shavelson, R. J. (1996). *A comparison of two approaches to scoring science performance*. Paper presented at the annual meeting of the American Educational Research Association. New York, NY, April.

Solano-Flores, G. & Shavelson, R. J. (1995). *Practical and Logistic Issues in Science Performance Assessment Development and Administration*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA, April.

Solano-Flores, G., Jovanovic, J., & Shavelson, R. J., & Bachman, M. (1994). *Development of an item shell for the generation of performance assessments in physics*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April.

Solano-Flores, G., & Shavelson, R. J. (1994). *Evaluation of a model for generating science performance assessments*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA, April.

Solano-Flores, G., & Shavelson, R. J. (1994). *Binary-based versus weight-based scoring in science performance assessments*. Paper presented at the annual meeting of the National Council on Measurement in Education. New Orleans, LA, April.

Solano-Flores, G., Ruiz-Primo, M. A., Baxter, G. P., Othman, A. R., & Shavelson, R. J. (1994). *Bilingual testing of Hispanic students in science performance assessments*. Paper presented at the Quality Education for Minorities Network meeting. San Francisco, CA.

Solano-Flores, G., & Ruiz-Primo, M.A. (1986). *Computer-assisted test design and evaluation of achievement tests*. (Sp.) Paper presented at the Sixth Conference on Computers in Education and Third Meeting on Artificial Intelligence. Oaxaca, Mexico, March.

Solano-Flores, G. (1985). *Automatic test design for the evaluation of academic skills*. (Sp.) Paper presented at the Fifth Conference on Computers and Education. Monterrey, Mexico, March.

Solano-Flores, G. (1984). *Computer-assisted evaluation of academic repertoire and outcomes: an application of educational structural analysis*. (Sp.) Paper presented at the XXIII World Congress of Psychology. Acapulco, Mexico, August.

Solano-Flores, G. (1984). *The foundations of educational structural analysis*. (Sp.) Paper presented at the XXIII World Congress of Psychology. Acapulco, Mexico, August.

Solano-Flores, G. (1982). *Educational structural analysis: advantages and applications*. (Sp.) Paper presented at the Third National Congress of Psychology. Mexico City, Mexico.

Solano-Flores, G. (1981). *Essay test assessment based on a socially-defined basis of comparison*. (Sp.) Paper presented at the First International Symposium on Analysis in Education. Mexico City, July.

Instructional Units

Solano-Flores, G. *Bubble Science: A sixth-grade physics hands-on instructional unit*. University of Santa Barbara, California, 1993. (Elementary school level)

Rivero, F., Solano-Flores, G., & Meraz, P. (1989). *Communication and Writing in Psychology*. (Sp.) Mexico: National University of Mexico. (College level).

Cedeño, M. L., García, D., Herrera, A., Kurc, L., Munive, M., Ruiz-Primo, M. A., & Solano-Flores, G. (1983). *Student Guide for the Practicum in Methodology, First Course, Third edition*. (Sp.) Mexico: National University of Mexico. (College level).

Ramírez, E., Solano-Flores, G., Kurc, L., & Medina-Mora, P. (1981). *Student Guide for the Practicum in Methodology, First Course, Second Edition*. (Sp.) Mexico: National University of Mexico. (College level).

Ramírez, E., Vargas, A., Solano-Flores, G., Kurc, L., & Medina-Mora, P. (1980). *Student Guide for the Practicum in Methodology, First Course* (Sp.) Mexico: National University of Mexico. (College level).

Other Publications

Solano-Flores, G. (2007). Educational assessment: A long term project. *Educación, 149*, 37-38. (Sp.)

Solano-Flores, G., Pick, S., & Pick, S. (1996). *Explaining to Kids: A Dictionary for Helping Parents Talk to Their Children About Over 200 "Difficult" Topics.* Mexico: Planeta. (Sp.)

Aguilar, R., Mendoza, M., Rayek, E., Solano-Flores, G., & Vidal, P. (1980). *Day Care Center Management*. Mexico: Center for the Study of Advanced Methods and Procedures for Education, Mexico. (Sp.)

Solano-Flores, G. (author or co-author) (1991). *Planning Your Life* (A series of **22** books for promoting critical thinking and living). México: IMIFAP/Noriega-Limusa. (Sp.)

Solano-Flores, G. (1988). *The Scientist Kid* A series of **6** hands-on science activities. México: Trillas Publishing Company. (Sp.)

Solano-Flores, G. *Open Eyes* (1986-1990). A series of **12** books for the promotion of reading in young children. México: Trillas Publishing Company. (Sp.)

Published Translations

California Standards for Science Education. English into Spanish. California: California Science Project, 2002. http://csmp.ucop.edu/csp/

Evans' *Contemporary influences in early childhood education*. English into Spanish. Mexico: Trillas Publishing Company, 1987.

TALKS AND KEYNOTE SPEECHES

Solano-Flores, G. (2012). *English language development, large-scale assessments, and classification issues*. Talk at the "Building a National Research Agenda to Improve the Educational Assessment and Attainment of English Language Learners" conference organized by ETS and CRESST, September 19.

Solano-Flores, G. (2012). Theoretical and methodological innovations in academic achievment test translation and cultural adaptation. University of Baja California, Mexico, November 6.

Solano-Flores, G. (2012). *Recent advances in the assessment of linguistically diverse populations*. University of Valencia, Spain, May 21.

Solano-Flores, G, (2011). *Examining language as a source of measurement error in the testing of English language learners*. Keynote speech at the Educational Testing Service. Princeton, NJ, November 9, 2011.

Solano-Flores, G, (2011). *Effective STEM achievement assessment for English language learners: Measurement considerations*. Presentation at the High-Quality STEM Education for English Learners: Current Challenges and Effective Practices forum organized by the Office of English Language Acquisition, U.S. Department of Education, July 11.

Solano-Flores, G. (2010). *The use of the theory of test translation error in international test comparisons.* University of Oslo, June 29.

Backhoff, E., Solano-Flores, G., & Contreras-Niño, L. A. (2010) *Analysis of the Mexican Spanish Language translation of PISA-2006*. Presentation at the Ibero-American seminar on the theory of test translation error in international comparisons. National Ministry of Education and National Institute for Educational Evaluation, Mexico City, Mexico, February 18-19.

Backhoff, E., Solano-Flores, G., & Contreras-Niño, L. A. (2010) *Test translation and adaptation: Lessons learned from TIMSS, 1995.* Presentation at the Ibero-American Seminar on the theory of test translation error in international comparisons. National Ministry of Education and National Institute for Educational Evaluation, Mexico City, Mexico, February 18-19.

Solano-Flores, G. (2009). *Design and use of illustrations in test items as a form of accommodation for English language learners in science assessment*. National Science Foundation, DRK-12 Principal Investigators Meeting. Washington, DC., November 8-10.

Solano-Flores, G. (2009). *Classification of English language learners: Conceptual considerations*. National Conference on Student Assessment organized by the Council of Chief State School Officers. Los Angeles, California, June 21-24.

Solano-Flores, G. (2008). *The forms and functions of language: Implications for the assessment of mathematics achievement in linguistically diverse populations*. Keynote speech at the Center for Mathematics Educations for Latinos Symposium. Monterey, CA, January 20.

Solano-Flores, G. (2008). *Examining symmetry in the treatment of languages in research, practice, and policy in the testing of linguistically diverse populations*. Presentation for the Pre-CSSE Symposium, *Implementation of the Official Languages Act in Provincial Assessments*, to be held at the University of British Columbia, Vancouver, BC. May 30.

Solano-Flores, G. *Evaluation and Educational Quality in Latin America*. Inaugural talk of the "Benjamin Bloom" Lecture. University of San Carlos, Guatemala City, Guatemala, June 8, 2007.

Solano-Flores, G. & Sexton, U. M. *Cultural appropriateness, language, teachers' roles, and perceptions in science assessment culture and language in educational research*. Science and English Language Learners National Science Teachers Association Conference. St. Louis, MO, March 31, 2007.

Solano-Flores, G. *Professional certification*. Invited talk. First International Seminar of Professional Certification. Salvador, Bahia, Brazil, November 29-30, 2005.

Solano-Flores, G. *Classroom testing and national standards test alignment*. Invited talk. University of Baja California, Ensenada. Ensenada, Baja California, Mexico, May 20, 2005.

Solano-Flores, G. *Assessment can benefit from diversity*. Keynote speech at the Assessment Training Institute conference, "Assessment Without Victims: Addressing Diversity with Student-Involved Classroom Assessment." Portland, OR, July 17-19, 2000.

Solano-Flores, G. *Practical teaching at the School of Psychology*. National School of Professional Studies, National University of Mexico. Mexico City, Mexico, September, 1985.

Solano-Flores, G. *Educational planning and evaluation: a practical view for training and education*. Talk given at the National University of Mexico, Mexico City, Mexico, August, 1985.

Solano-Flores, G. *Assessment of Learning*. Workshop for high school teachers. Colegio de Bachilleres. Mexico City, Mexico, December, 1986.

Solano-Flores, G. *The work of Janusz Korckzak*. Trillas Publishing Company. Mexico City, Mexico, April, 1986.

Solano-Flores, G.. *Selected topics in education*. University of Morelos, Cuernavaca, Mexico, September 1982.

WORKSHOPS

Solano-Flores, G. (2012). *Language and test validity: The use of generalizability theory*. University of Valencia, Spain, May 21-22.

Solano-Flores, G., Geisinger, K., Shavelson, R. J., Chia, M., & Kurpius, M. (2011). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Cairo, Egypt, December 19-20.

Solano-Flores, G., Rodeck, E., Shavelson, R. J., Chia, M., & Kurpius, M. (2011). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Banská Bystrica, Slovakia, December 6-9.

Solano-Flores, G., Shavelson, R. J., Chia, M., & Kurpius, M. (2011). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Bogotá, Colombia, November 16-17.

Solano-Flores, G., & Shavelson, R. J., Chia, M., & Kurpius, M. (2010). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Seoul, Korea, June 16-17.

Solano-Flores, G., & Shavelson, R. J., Chia, M., & Kurpius, M. (2010). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Oslo, Norway, June 29-30.

Solano-Flores, G., & Shavelson, R. J., Chia, M., & Kurpius, M. (2010). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Jyväaskylä, Finland, July 1-2.

Solano-Flores, G., & Shavelson, R. J., Chia, M., & Kurpius, M. (2010). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Guadalajara, Mexico, July 28-29.

Solano-Flores, G., & Shavelson, R. J., Chia, M., & Kurpius, M. (2010). *Assessment of Higher Education Learning Outcomes* Translation and Adaptation International Workshop. Kuwait City, Kuwait, September-27-28.

Solano-Flores, G., & Shavelson, R. J. (2010). *Adaptation and translation of performance tasks*. Workshop given at the Council for Aid to Education AHELO Generic Strand meeting. New York, NY, February 17.

Solano-Flores, G., Backhoff, E., & Contreras-Niño, L. A. (2010). *Test translation review sessions: A demonstration*. Presentation at the Ibero-American Seminar on the theory of test translation error in international comparisons. National Ministry of Education and National Institute for Educational Evaluation, Mexico City, Mexico, February 18-19.

Solano-Flores, G.(2009). *Language, Content and Leadership in ELL Mathematics: Examining and Improving Assessment Systems.* Workshop given at the "Examining and Improving Assessment Systems symposium," Office of English Language Learners, New York City Department of Education. New York, NY, May 29.

Solano-Flores, G.(2009). *Heterogeneity, uncertainty, and instability, in the teaching and testing of English language learners*. Workshop given at the Third Annual English Language Acquisition Academy. Denver, Colorado, April 22-23, 2008.

Solano-Flores, G.(2008). *Views of language and the improvement of testing practices for English language learners*. Workshop given at the Second Annual English Language Acquisition Academy. Denver, Colorado, April 17, 2008.

Solano-Flores, G. (2007). *Assessment of student academic achievement in science*. Workshop for the University of the Americas, Puebla, Mexico, June 18-22.

Solano-Flores, G. (2007). *Academic Achievement Assessment in Science: Foundations and Current Trends*. Workshop for science educators. SENACyT (National Department of Science, Technology, and Innovation), Panama City, Panama, September 17-21.

Solano-Flores, G. & Sager, N. (2007). *Academic Achievement Assessment in Science, Part II: Critical Thinking and the Teaching of Science*. Workshop for science educators. SENACyT (National Department of Science, Technology, and Innovation), Panama City, Panama, November 16-20.

Solano-Flores, G. *Development, selection, adaptation, and use of constructed-response assessments in science education*. Workshop for science educators and science education leaders in Panama organized by the Ministry of Science and Technology (SENACYT). Panama Technological University, Panama City, November 20-24, 2006.

Solano-Flores, G. *Development and use of measurement instruments in education: Criteria for evaluating equity effectiveness*. Workshop given at the USAID Latin America and the Caribbean Regional Education and Training Workshop. Miami, FL, May 9, 2006.

Solano-Flores, G. *Navigating the Academy*. Pre-conference workshop. National Association for Research in Science Teaching. Dallas, TX, April 4, 2005.

Solano-Flores, G. *Designing assessments aligned to scientific inquiry-based education*. Workshop Third International Conference on Science in Elementary Education. El Paso Texas, University of Texas-El Paso, January 14, 2005.

Solano-Flores, G. *Item specifications in test development*. Workshop for researchers and technical staff facilitated at the National Institute for Educational Evaluation, Mexico City, Mexico, August 26-28. 2004.

Solano-Flores, G. *Knowledge domain specification and the generation of test items*. Workshop for staff facilitated at the National Institute for Educational Evaluation, Mexico City, Mexico, March 24, 2004.

Solano-Flores, G. *Cultural validity of assessment practices*. Workshop facilitated at the Mid-Atlantic Equity Center Annual Regional Conference, Washington, DC, March 12, 2004.

Solano-Flores, G. *Socio-linguistic aspects of test development*. Workshop facilitated at the Mid Summer Workshop Sessions for IISME Fellows, organized by the Industry Initiatives for Science and Mathematics Education. July 16, 2003.

Solano-Flores, G. *Context-based instrument design: Lessons on cultural validity*. Workshop facilitated at the Howard University Evaluation Training Institute. June 19, 2003.

Solano-Flores, G. *Knowledge assessment: Theory and practice*. Workshop for researchers of the Ministry of Science and Technology (SENACYT) and the Panama Ministry of Education. Panama City, Panama, November 18-22, 2002.

Solano-Flores, G. *Development and use of performance assessments in science*. Workshop for educational researchers given at the Fifth National Conference on Educational Research, Ensenada, Baja California (Mexico), October, 28-31, 2002.

Solano-Flores, G., & Trumbull, E. *Language, Culture, and Assessment*. Workshop for teachers and educators. Wenatchee School District. Wenatchee, WA, May 22, 2001.

Solano-Flores, G. *Know thy student*. Workshop given at the Assessment Training Institute's conference, "Assessment Without Victims: Addressing Diversity with Student-Involved Classroom Assessment." Portland, OR, July 17-19, 2000.

Shavelson, R. J., Ruiz-Primo, M. A. & Solano-Flores, G.,. *Development of Alternative Assessments in Science*. Workshop for the Curriculum Research and Development Center. University of Hawaii at Manoa. Honolulu, Hawaii, January, 1999.

Shavelson, R. J., Solano-Flores, G., & Ruiz-Primo, M. A. *Development of Performance Assessments in Science*. Workshop for teachers and school district personnel organized by the Anchorage School District. Anchorage School District, Anchorage, AK, July, 1995.

Solano-Flores, G. *Developing Curriculum-Embedded Performance Assessments*. Workshop for teachers organized by the Alaska State Department of Education. University of Alaska, Anchorage. Anchorage, AK, July, 1994.

Shavelson. R. J., Brown, J., Solano-Flores, G., & Ruiz-Primo, M. A. *Development of Performance Assessments in Science*. Workshop for project directors of the National Science Foundation. Smithsonian Institution, Washington, DC, December, 1993.

Shavelson. R. J., Brown, J., Solano-Flores, G., & Ruiz-Primo, M. A. *Development of Performance Assessments in Science*. Workshop for staff of National Science Resources Center. Smithsonian Institution, Washington, DC, December, 1993.

Shavelson. R. J., Brown, J., Solano-Flores, G., & Ruiz-Primo, M. A.. *Performance Assessments in Science*. Workshop designed for staff of the National Science Resources Center. Smithsonian Institution, Washington, DC, December, 1993.

DOCTORAL DISSERTATIONS (Advisor and Chair)

Nguyen-Le, Khanh (2010). Personal and formal backgrounds as factors which influence linguistic and cultural competency in the teaching of mathematics. Doctoral dissertation. University of Colorado, Boulder.

Kachchaf, Rachel (2011). Exploring problem solving strategies on mulitple-choice science items: comparing native Spanish-speaking English language learners and mainstream monolinguals. Doctoral dissertation. University of Colorado, Boulder.

Wang, Chao (2012). The use of illustrations in large-scale science assessment: A comparative study. Doctoral dissertation. University of Colorado, Boulder.

Chía, Magda (2012). Assessment translation and adaptation: A staging and implementation study of an emerging international assessment. Doctoral dissertation. University of Colorado, Boulder.

COURSES TAUGHT

Portfolio Practicum. School of Education, University of Colorado, Boulder, Spring, 2011.

Doctoral Seminar on Educational Equity. School of Education, University of Colorado, Boulder, Fall, 2010.

Language Issues in Educational Research. School of Education, University of Colorado, Boulder, Spring 2009, Spring, 2011, Spring, 2013.

Specialty Doctoral Seminar, Educational Equity and Cultural Diversity Program. School of Education, University of Colorado, Boulder, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009, Fall 2009. Spring 2010, Fall, 2010, Spring 2011.

Testing in Bilingual Education. School of Education, University of Colorado, Boulder, Fall 2006, Fall 2007, Spring, 2008, Fall, 2008, Fall, 2009, Spring 2010, Fall 2010, Fall 2012.

Second Language Acquisition. School of Education, University of Colorado, Boulder, Spring 2007.

Introduction to Bilingual and Multicultural Education. School of Education, University of Colorado, Boulder, Fall 2006, Fall 2007.

Sociolinguistics in Education. School of Education, University of Colorado, Boulder, Spring 2006, Spring, 2008.

Structural Analysis in Education. Graduate Division, School of Psychology, National University of Mexico, 1983.

Research Methods in Multidimensional Social Psychology. School of Psychology, National University of Mexico, 1990, 1988, 1987, 1986, 1985, 1984, 1983, and 1981.

Research Methods in Unidimensional Social Psychology. School of Psychology, National University of Mexico, 1989, 1987, 1986, 1985, 1984, 1983, 1981, and 1979.

Educational Technology. School of Psychology, National University of Mexico, 1986.

Research Methods in Multidimensional Individual (Cognitive and Experimental) Psychology. School of Psychology, National University of Mexico, 1982 and 1980.

Research Methods in Unidimensional Individual (Cognitive and Experimental) Psychology. School of Psychology, National University of Mexico, 1981 and 1980.

Research Methods in Psychology. National School of Professional Studies. National University of Mexico, 1979.

Language and Thought. School of Psychology, National University of Mexico, 1977.

Experimental Psychology. School of Psychology, National University of Mexico, 1976.

Perception and Motivation. School of Psychology, National University of Mexico, 1976.