


Rich Shavelson

Margaret Jacks Professor of Education, Emeritus
Graduate School of Education

 Curriculum Vitae available Online

CONTACT INFORMATION

- **Admin. Support**

Elayne Weissler-Martello

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Bio

BIO

His current work focuses on the design of assessments and assessment systems that measure college students learning, both their development of competence/achievement and so-called “soft-skills” such as perspective taking. He co-created the Collegiate Learning Assessment with Steve Klein and built statistical models for estimating value added for the CLA and other college-level assessments. This work is summarized in *Measuring College Student Learning: Accountability in a New Era* (2010, Stanford University Press) and in recent papers on the measurement and statistical modeling of competence.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Graduate School of Education

ADMINISTRATIVE APPOINTMENTS

- I James Quillan Dean, School of Education, (1995-2000)
- Emeritus Professor of Psychology (by courtesy), School of Humanities and Sciences, (1995- present)
- Professor Emeritus, Stanford Graduate School of Education, (1995- present)
- Emeritus Affiliated Faculty, Stanford Institute for the Environment, (2005-2007)

HONORS AND AWARDS

- Humboldt Fellowship, Humboldt Foundation, Germany (1994)
- AERA Review of Research Award, American Educational Research Association (2008)
- AERA Review of Research Award, American Educational research Association (1978)
- E.F. Lindquist Award, American Educational Research Association (2011)
- R.L. Linn Award, American Educational Association (2016)
- E.L. Thorndike Award, American Psychological Association (2010)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Assistant Professor of Education, UCLA (1973 - 1975)
- Associate Professor of Education, UCLA (1975 - 1979)
- Professor of Education, UCLA (1979 - 1987)

- Dean, Graduate School of Education, University of California (1987 - 1993)
- Professor of Education, UCSB (1987 - 1996)
- Professor of Education, UCSB with an affiliated appointment in Statistics and Applied Probability (1993 - 1996)
- Vice Chair and Chair, Board on Testing and Assessment National Academy of Science (1993 - 1998)
- Board Member, Yosemite National Institutes/ NatureBridge (1996 - 2008)
- Board Member, The Spencer Foundation (1997 - 2005)
- Education Advisory Council (Chair), NatureBridge (2009 - 2012)
- Board Member, BSCS (formerly Biological Sciences Curriculum Study) (2009 - 2018)
- Chair, BSCS Board (2016 - 2018)
- Member and Vice Chair Governance Committee, Stanford Historical Society (2017 - 2019)

PROFESSIONAL EDUCATION

- PhD, Stanford University , Educational Psychology (1971)
- MA, San Jose State College , Psychology (1967)
- BA, University of Oregon , Psychology (1964)

Research & Scholarship

RESEARCH INTERESTS

- Assessment, Testing and Measurement
- Higher Education
- Psychology
- Research Methods

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Assessment of learning in higher education (including the Collegiate Learning Assessment); accountability in higher education; higher education policy.

Teaching

STANFORD ADVISEES

Doctoral (Program)

Roza Nalbandyan

Publications

PUBLICATIONS

- **Rescue an Enterprise from Failure: An Innovative Assessment Tool for Simulated Performance** *ASSESSMENT OF LEARNING OUTCOMES IN HIGHER EDUCATION: CROSS-NATIONAL COMPARISONS AND PERSPECTIVES*
Oser, F., Mueller, S., Obex, T., Volery, T., Shavelson, R. J., ZlatkinTroitschanskaia, O., Toepper, M., Pant, H. A., Lautenbach, C., Kuhn, C.
2018: 123–44
- **Performance indicators of learning in higher education institutions: an overview of the field** *RESEARCH HANDBOOK ON QUALITY, PERFORMANCE AND ACCOUNTABILITY IN HIGHER EDUCATION*
Shavelson, R. J., Zlatkin-Troitschanskaia, O., Marino, J. P., Hazelkorn, E., Coates, H., McCormick, A. C.
2018: 249–63
- **International Performance Assessment of Learning in Higher Education (iPAL): Research and Development** *ASSESSMENT OF LEARNING OUTCOMES IN HIGHER EDUCATION: CROSS-NATIONAL COMPARISONS AND PERSPECTIVES*

Shavelson, R. J., Zlatkin-Troitschanskaia, O., Marino, J. P., Zlatkin-Troitschanskaia, O., Toepper, M., Pant, H. A., Lautenbach, C., Kuhn, C.
2018; 193–214

- **Gavriel Salomon: In Memoriam** *EDUCATIONAL PSYCHOLOGY REVIEW*
Berliner, D., Phillips, D., Zeidner, M., de Corte, E., Shavelson, R., de Ibarrola, M., Clark, R.
2016; 28 (2): 207–13
- **On the practices and challenges of measuring higher education value added: the case of Colombia** *ASSESSMENT & EVALUATION IN HIGHER EDUCATION*
Shavelson, R. J., Domingue, B. W., Marino, J. P., Molina Mantilla, A., Morales Forero, A., Wiley, E. E.
2016; 41 (5): 695-720
- **The international state of research on measurement of competency in higher education** *STUDIES IN HIGHER EDUCATION*
Zlatkin-Troitschanskaia, O., Shavelson, R. J., Kuhn, C.
2015; 40 (3): 393-411
- **Beyond Dichotomies Competence Viewed as a Continuum** *ZEITSCHRIFT FUR PSYCHOLOGIE-JOURNAL OF PSYCHOLOGY*
Blomeke, S., Gustafsson, J., Shavelson, R. J.
2015; 223 (1): 3-13
- **On the Factorial Structure of the SAT and Implications for Next-Generation College Readiness Assessments** *EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT*
Wiley, E. W., Shavelson, R. J., Kurpius, A. A.
2014; 74 (5): 859-874
- **Factors Contributing to Problem-Solving Performance in First-Semester Organic Chemistry** *JOURNAL OF CHEMICAL EDUCATION*
Lopez, E. J., Shavelson, R. J., Nandagopal, K., Szu, E., Penn, J.
2014; 91 (7): 976-981
- **Using Formal Embedded Formative Assessments Aligned with a Short-Term Learning Progression to Promote Conceptual Change and Achievement in Science** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
Yin, Y., Tomita, M. K., Shavelson, R. J.
2014; 36 (4): 531-552
- **Self-regulated learning study strategies and academic performance in undergraduate organic chemistry: An investigation examining ethnically diverse students** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
Lopez, E. J., Nandagopal, K., Shavelson, R. J., Szu, E., Penn, J.
2013; 50 (6): 660-676
- **On an Approach to Testing and Modeling Competence** *EDUCATIONAL PSYCHOLOGIST*
Shavelson, R. J.
2013; 48 (2): 73-86
- **Context matters: volunteer bias, small sample size, and the value of comparison groups in the assessment of research-based undergraduate introductory biology lab courses.** *Journal of microbiology & biology education : JMBE*
Brownell, S. E., Kloser, M. J., Fukami, T., Shavelson, R. J.
2013; 14 (2): 176-182
- **Understanding Academic Performance in Organic Chemistry** *JOURNAL OF CHEMICAL EDUCATION*
Szu, E., Nandagopal, K., Shavelson, R. J., Lopez, E. J., Penn, J. H., Scharberg, M., Hill, G. W.
2011; 88 (9): 1238-1242
- **Validating the use of concept-mapping as a diagnostic assessment tool in organic chemistry: implications for teaching** *CHEMISTRY EDUCATION RESEARCH AND PRACTICE*
Lopez, E., Kim, J., Nandagopal, K., Cardin, N., Shavelson, R. J., Penn, J. H.
2011; 12 (2): 133-141
- **Measuring college learning responsibly: Accountability in a new era**
Shavelson, R.
Stanford University Press.2010

- **Supporting Valid Interpretations of Learning Progression Level Diagnoses** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
Steedle, J. T., Shavelson, R. J.
2009; 46 (6): 699-715
- **Generalizability theory and its contribution to the discussion of the generalizability of research findings** *Generalizing from educational research*
Shavelson, R. J., Webb, N. M.
2009: 13-32
- **Supporting valid interpretations of learning progression level diagnoses** *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching*
Steedle, J. T., Shavelson, R. J.
2009; 46 (6): 699-715
- **The limitations of portfolios** *Inside Higher Ed*
Shavelson, R. J., Klein, S., Benjamin, R.
2009; 16
- **Direct measures in environmental education evaluation: Behavioral intentions versus observable actions** *Applied Environmental Education and Communication*
Camargo, C., Shavelson, R.
2009; 8 (3-4): 165-173
- **Assessing School Effectiveness** *EVALUATION REVIEW*
Klein, S., Freedman, D., Shavelson, R., Bolus, R.
2008; 32 (6): 511-525
- **Measuring Knowledge Structure: Reliability of Concept Mapping Assessment in Medical Education** *ACADEMIC MEDICINE*
Srinivasan, M., McElvany, M., Shay, J. M., Shavelson, R. J., West, D. C.
2008; 83 (12): 1196-1203
- **Application of Generalizability theory to concept map assessment research** *APPLIED MEASUREMENT IN EDUCATION*
Yin, Y., Shavelson, R. J.
2008; 21 (3): 273-291
- **From Formal Embedded Assessments to Reflective Lessons: The Development of Formative Assessment Studies** *APPLIED MEASUREMENT IN EDUCATION*
Ayala, C. C., Shavelson, R. J., Ruiz-Primo, M. A., Brandon, P. R., Yin, Y., Furtak, E. M., Young, D. B.
2008; 21 (4): 315-334
- **Teachers' decision making: From Alan J. Bishop to today** *Critical issues in mathematics education*
Borko, H., Roberts, S. A., Shavelson, R.
Springer.2008: 37-67
- **Reflections on quantitative reasoning: An assessment perspective** *Calculation vs. context: Quantitative literacy and its implications for teacher education*
Shavelson, R. J.
2008: 27-47
- **Application of generalizability theory to concept map assessment research** *Applied Measurement in Education*
Yin, Y., Shavelson, R. J.
2008; 21 (3): 273-291
- **Measuring knowledge structure: Reliability of concept mapping assessment in medical education** *Academic Medicine*
Srinivasan, M., McElvany, M., Shay, J. M., Shavelson, R. J., West, D. C.
2008; 83 (12): 1196-1203
- **Assessing school effectiveness** *Evaluation Review*
Klein, S., Freedman, D., Shavelson, R., Bolus, R.
2008; 32 (6): 511-525
- **On the Impact of Formative Assessment on Student Motivation, Achievement, and Conceptual Change** *APPLIED MEASUREMENT IN EDUCATION*

- Yin, Y., Shavelson, R. J., Ayala, C. C., Ruiz-Primo, M. A., Brandon, P. R., Furtak, E. M., Tomita, M. K., Young, D. B.
2008; 21 (4): 335-359
- **On the Fidelity of Implementing Embedded Formative Assessments and Its Relation to Student Learning** *APPLIED MEASUREMENT IN EDUCATION*
Furtak, E. M., Ruiz-Primo, M. A., Shemwell, J. T., Ayala, C. C., Brandon, P. R., Shavelson, R. J., Yin, Y.
2008; 21 (4): 360-389
 - **On the Impact of Curriculum-Embedded Formative Assessment on Learning: A Collaboration between Curriculum and Assessment Developers** *APPLIED MEASUREMENT IN EDUCATION*
Shavelson, R. J., Young, D. B., Ayala, C. C., Brandon, P. R., Furtak, E. M., Ruiz-Primo, M. A., Tomita, M. K., Yin, Y.
2008; 21 (4): 295-314
 - **Teaching effectiveness research in the past decade: The role of theory and research design in disentangling meta-analysis results** *REVIEW OF EDUCATIONAL RESEARCH*
Seidel, T., Shavelson, R. J.
2007; 77 (4): 454-499
 - **The collegiate learning assessment - Facts and fantasies** *EVALUATION REVIEW*
Klein, S., Benjamin, R., Shavelson, R., Bolus, R.
2007; 31 (5): 415-439
 - **Criterion-based training with surgical simulators: proficiency of experienced surgeons.** *JSLS : Journal of the Society of Laparoendoscopic Surgeons / Society of Laparoendoscopic Surgeons*
Heinrichs, W. L., Lukoff, B., Youngblood, P., Dev, P., Shavelson, R., Hasson, H. M., Satava, R. M., McDougall, E. M., Wetter, P. A.
2007; 11 (3): 273-302
 - **The collegiate learning assessment: Facts and fantasies** *Evaluation Review*
Klein, S., Benjamin, R., Shavelson, R., Bolus, R.
2007; 31 (5): 415-439
 - **Estimating causal effects using experimental and observational design**
Schneider, B., Carnoy, M., Kilpatrick, J., Schmidt, W. H., Shavelson, R. J.
American Educational & Research Association. 2007
 - **A brief history of student learning assessment: How we got where we are and a proposal for where to go next**
Shavelson, R. J., Schneider, C. G., Shulman, L. S.
Association of American Colleges and Universities. 2007
 - **Windows into the mind** *HIGHER EDUCATION*
Shavelson, R. J., Ruiz-Primo, M. A., Wiley, E. W.
2005; 49 (4): 413-430
 - **An approach to measuring cognitive outcomes across higher education institutions** *RESEARCH IN HIGHER EDUCATION*
Klein, S. P., Kuh, G. D., Chun, M., Hamilton, L., SHAVELSON, R.
2005; 46 (3): 251-276
 - **Comparison of two concept-mapping techniques: Implications for scoring, interpretation, and use** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
Yin, Y., Vanides, J., Ruiz-Primo, M. A., Ayala, C. C., SHAVELSON, R. J.
2005; 42 (2): 166-184
 - **Evaluating students' science notebooks as an assessment tool** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
Ruiz-Primo, M. A., Li, M., Ayala, C., Shavelson, R. J.
2004; 26 (12): 1477-1506
 - **Lee J. Cronbach.** *Proceedings of the American Philosophical Society*
Shavelson, R. J.
2003; 147 (4): 379-385
 - **On the evaluation of systemic science education reform: Searching for instructional sensitivity** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
Ruiz-Primo, M. A., SHAVELSON, R. J., Hamilton, L., Klein, S.
2002; 39 (5): 369-393

- **Comparison of the reliability and validity of scores from two concept-mapping techniques** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
Ruiz-Primo, M. A., Schultz, S. E., Li, M., SHAVELSON, R. J.
2001; 38 (2): 260-278
- **The effect of simulator use on learning and self-assessment: The case of Stanford University's E-Pelvis simulator** *Conference on Medicine Meets Virtual Reality 2001*
Pugh, C. M., Srivastava, S., SHAVELSON, R., Walker, D., Cotner, T., Scarloss, B., Kuo, M., Rawn, C., Dev, P., Krummel, T. H., Heinrichs, L. H.
I O S PRESS.2001: 396-400
- **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
- **Note on sources of sampling variability in science performance assessments** *JOURNAL OF EDUCATIONAL MEASUREMENT*
Shavelson, R. J., Ruiz-Primo, M. A., Wiley, E. W.
1999; 36 (1): 61-71
- **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
- **Analytic versus holistic scoring of science performance tasks** *APPLIED MEASUREMENT IN EDUCATION*
Klein, S. P., Stecher, B. M., SHAVELSON, R. J., McCaffrey, D., Ormseth, T., Bell, R. M., Comfort, K., Othman, A. R.
1998; 11 (2): 121-137
- **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
- **Rhetoric and reality in science performance assessments: An update** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
RUIZPRIMO, M. A., SHAVELSON, R. J.
1996; 33 (10): 1045-1063
- **Problems and issues in the use of concept maps in science assessment** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
RUIZPRIMO, M. A., SHAVELSON, R. J.
1996; 33 (6): 569-600
- **On the structure of social self-concept for pre-, early, and late adolescents: A test of the Shavelson, Hubner, and Stanton (1976) model** *JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY*
Byrne, B. M., SHAVELSON, R. J.
1996; 70 (3): 599-613
- **ON GETTING IT RIGHT** *EDUCATIONAL EVALUATION AND POLICY ANALYSIS*
SHAVELSON, R. J., NOREEN, N. M.
1995; 17 (3): 275-279
- **SELF-CONCEPT - VALIDATION OF CONSTRUCT INTERPRETATIONS** *REVIEW OF EDUCATIONAL RESEARCH*
SHAVELSON, R. J., HUBNER, J. J., STANTON, G. C.
1976; 46 (3): 407-441
- **3 EXPERIMENTS ON LEARNING TO TEACH** *JOURNAL OF TEACHER EDUCATION*
Clark, C. M., Snow, R. E., SHAVELSON, R. J.
1976; 27 (2): 174-180
- **METHOD FOR EXAMINING SUBJECT-MATTER STRUCTURE IN INSTRUCTIONAL MATERIAL** *JOURNAL OF STRUCTURAL LEARNING*
SHAVELSON, R. J., GEESLIN, W. E.

1975; 4 (3): 199-218

- **CONSTRUCT VALIDATION - METHODOLOGY AND APPLICATION TO 3 MEASURES OF COGNITIVE STRUCTURE** *JOURNAL OF EDUCATIONAL MEASUREMENT*

SHAVELSON, R. J., STANTON, G. C.

1975; 12 (2): 67-85

- **SURVIVAL IN FIELD OF EDUCATION AFTER INTERN TRAINING - TRAINING INSTITUTIONS PERSPECTIVE** *CALIFORNIA JOURNAL OF EDUCATIONAL RESEARCH*

SHAVELSON, R. J., TRINCHER, R. L.

1974; 25 (4): 161-179

- **EFFECTS OF POSITION AND TYPE OF QUESTION ON LEARNING FROM PROSE MATERIAL - INTERACTION OF TREATMENTS WITH INDIVIDUAL-DIFFERENCES** *JOURNAL OF EDUCATIONAL PSYCHOLOGY*

SHAVELSON, R. J., BERLINER, D. C., Ravitch, M. M., LOEDING, D.

1974; 66 (1): 40-48

- **CRITERION-REFERENCED TESTING - COMMENTS ON RELIABILITY** *JOURNAL OF EDUCATIONAL MEASUREMENT*

SHAVELSON, R. J., Block, J. H., Ravitch, M. M.

1972; 9 (2): 133-137