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### EDUCATION

- Ph.D.**        **Arizona State University**, Tempe, Arizona  
Educational Psychology
- M.A.**        **Arizona State University**, Tempe, Arizona  
Education
- B.S.**        **Southern Oregon University**, Ashland, Oregon  
Psychology

### EXPERIENCE

#### Academic Positions

- 1992-present    **Professor**, Department of Psychology, California State University, Chico, California.  
Research in learning and cognition in problem solving and comprehension. Teach learning theory, developmental cognition, measurement theory, applied cognition.
- 1987-1992      **Associate Professor**, Department of Psychology, California State University, Chico, California. Research in learning, cognition in problem solving and comprehension. Teach learning theory, developmental cognition, measurement theory, and applied cognition.
- Assistant Professor**, Department of Educational Psychology, Northern Arizona University, Flagstaff, Arizona. Research in learning and cognition in instruction, and issues of schooling. Teach research methods, measurement theory, human develop, and learning.
- Assistant Professor**, Department of Psychology, Western Illinois University, Macomb, Illinois. Research in learning, cognition, and issues of schooling. Teach research methods, measurement theory, human develop, and learning.

#### Research Fellowships

- 1997-1998      **NASA Faculty Fellow**, Classroom of the Future, National Aeronautic and Space Administration (NASA), Center for Educational Technologies, Wheeling West Virginia. Conducted research on an instructional method for school- age students to more efficiently search, retain, and comprehend scientific information obtained from the World Wide Web.

#### Visiting/Adjunct Positions

- 2009-2009      **Visiting Professor**, Multimedia Research Unit, Department of General and Educational Psychology, University of Koblenz-Landau, Germany. During a six-month sabbatical leave from California State University, Chico, (CSUC) developed an international program between University of Koblenz-Landau, University Pierre Mendez France—Grenoble II and

CSUC to train international cognitive visualization specialists (ICVS) and conducted research on text and graphics.

- 2001-2003 **Adjunct Professor**, Faculty in Health, Education and Professional Studies, University of New England, Armidale, New South Wales, Australia. Responsible for conducting research in learning, cognition and instruction, specifically concerning the way students learn chemistry. Co-PI on MetaHead, a web-CT environment to teach metacognition skills among first year chemistry students learning basic chemistry .
- 1998-2000 **Visiting Associate Professor**, School of Education Studies, University of New England, Armidale, New South Wales, Australia. Responsible for conducting research in learning, cognition and instruction, specifically concerning the way students learn and comprehend information within hypermedia environments. The principal work conducted centers around factors associated with the development of configurational knowledge and the reduction of cognitive load due to Internet wayfinding. Supervision of postgraduate Research.
- 1995-1995 **Visiting Professor**, Department of Learning, Development and Communication, University of New England, Armidale, New South Wales, Australia. During a six-month sabbatical leave from California State University, Chico, conducted research in learning, cognition and instruction, and mentored faculty and students in the conduction of other research in the general topic area of educational psychology, broadly defined.

### AWARDS

Outstanding Research Mentor, California State University, Chico, February, 2011

**Professional Achievement Honors**, California State University, Chico, February, 1992, 2007

### PUBLICATIONS

#### *Scientific Investigations In Cognition & Learning: Published*

**Schwartz, N. H.** & Schmid, R. F. (in press). Using Technology to Foster Meaningful Learning Environments. In Lawson, M. J. & Kirby, J. R., (Eds.) *The quality of Learning: Dispositions, instruction, and mental structures*. Cambridge, England: Cambridge University Press.

**Schwartz, N. H.**, Scott, B. M., & Forester, D. (in press). Metacognition: A closed-loop model of biased competition Evidence from neuroscience, cognition, and instructional research. In Azevedo, R. & Aleven, V. (Eds.), *International Handbook of Metacognition and Learning Technologies*. New York: Springer Science.

Spadaro, P. F., D'Aprile, G., Ligorio, M. B., & **Schwartz, N.** (2012). Identity and Externalities toward Sustainability. In Rahman, H., & Ramos, I. (Eds.), *Cases on SMEs and Open Innovation: Applications and Investigations*. (pp. 100-125). doi:10.4018/978-1-61350-314-0.ch006

Stroud, M. J. & **Schwartz, N. H.** (2010). Summoning Prior Knowledge Through Metaphorical Graphics: An Example in Chemistry Instruction. *Journal of Educational Research*. 103 (5), 351 – 366.

**Schwartz, N. H.** & Collins, C. (2008). Arguing a Position from Text: The Influence of Graphic Themes on Schema Activation. In Zumbach, J., Schwartz, N. H., Kestor, L. & Seufert, T. (2008). (Eds.) *Beyond Knowledge: The Legacy of Competence (Meaningful learning computer-based learning environments)*. Vienna, Austria: Springer Science Publishing.

Zumbach, J., **Schwartz, N. H.**, Kestor, L. & Seufert, T. (2008). (Eds.) *Beyond Knowledge: The Legacy of Competence (Meaningful learning computer-based learning environments)*. Vienna, Austria: Springer Science Publishing.

**Schwartz, N.H.** (2008). Exploring the Use of Technology to Teach: The Value of Distributed Cognition. *Journal of Research on Technology in Education*, 40(3), 389-404.

Ligorio, M.B., Donatella, C. & **Schwartz, N.H.** (2008). Collaborative Virtual Environments as Means to Increase the Level of Intersubjectivity in a Distributed Cognitive System. *Journal of Research on Technology in Education*, 40(3), 299-317.

**Schwartz, N.H.** (2007). Affordances in the Construction of Meaning: Heuristics of Thematic Graphics for CSCL. *QWERTY: Journal of Technology and Culture*. Vol. 1, 35-43.

**Schwartz, N.H.**, Verdi, M., Morris, T., & Larson, N. (2007). Cognitive Representation and Spatial Displays in Web Learning. *Contemporary Educational Psychology*. 32(4), 551-568.

Scott, B. & **Schwartz, N.H.** (2007). Navigational Spatial Displays: The Role of Metacognition as Cognitive Load. *Learning and Instruction*. 17, 89 – 105.

**Schwartz, N. H.**, Stroud, M.J., Lee, T.R., Scott, B.M. & McGee, S. (2006). Enhancing Hypermedia Learning through Metaphorical Priming. *Journal of Educational Computing Research*, 35(1), 1 – 30.

**Schwartz, N.H.**, Anderson, C., Hong, N., Howard, B. & McGee, S. (2004). The Influence of Metacognitive Skills on Learners' Memory of Information in a Hypermedia Environment. *Journal of Educational Computing Research*. 31(1), 77 - 93.

**Schwartz, N. H.** & Ligorio, M. B. (2004). Understanding Cognitive Transactions in Teaching and Learning within Virtual Communities. In Vrasidas, C. & Glass, G.V. (Eds.) *Current Perspectives on Applied Information Technologies: Online Professional Development for Teachers*. Greenwich, CT: Information Age Publishing.

**Schwartz, N.H.** & McGee, S (2001). Learning and Problem Solving in Web environments. In Robertson, M & Gerber, R. (Eds.) *Children's Ways of Knowing: Learning Through Partnerships*. Sydney Australia: ACER Australian Council for Educational Research.

Howard, B. C., McGee, S., **Schwartz, N.H.**, & Purcell, S. (2000). The experience of constructivism: Transforming teacher epistemology. *Journal of Research on Computing in Education*, 32(4).

**Schwartz, N.H.**, Oppy, B. & Gust, K. (1999). Learning and the Web: The role of Metacognition and Configurational Knowledge in Comprehension and Problem Solving. *Proceedings of Metacognition: Products and Processes*. Universite Blaise Pascal, Clermont-Ferrand, FRANCE.

**Schwartz, N.H.**, Ellsworth, L., Graham, L. & Knight, B. (1998). Accessing prior knowledge to remember text: A comparison of advance organizers and maps. *Contemporary Educational Psychology*, 33, 65-89.

**Schwartz, N. H.** (1997). Human information processing of maps: A report to the geographic community. In Boehm, R.G. and Petersen, J.F. (Eds.) *First Assessment: Research in Geographic Education*. San Marcos, TX: Gilbert M. Grosvenor Center for Geographic Education Press.

**Schwartz, N.H.** (1997). The utility of maps in instruction. *Proceedings of the Northwest Region Department of School Education Inaugural Special Education Conference*. AUSTRALIA.

Wolfe, J., **Schwartz, N.H.** & Petersen, J. (1996). Cognitive and language ability estimates of Haulapai children. *Psychology in the Schools*, 33(3), 1-6

**Schwartz, N.H.** & Wilkinson, W.K. (1992). Map passage structural hierarchy and passage recall. *Contemporary Educational Psychology*, 17, 356-363.

**Schwartz, N.H.** & Phillippe, A.E. (1991). Individual differences in the retention of maps. *Contemporary Educational Psychology*, 16, 171-182.

Wilkinson, W. & **Schwartz, N.H.** (1991). A factor analytic study of epistemological orientation and related variables. *Journal of Psychology*, 125, 91-100.

- Wilkinson, W. & **Schwartz, N.H.** (1990). Predicting epistemological orientation from demographic, ability, and learning style variables. *Innovative Higher Education, 14*(2), 131-139.
- Dean, R.S., **Schwartz, N.H.** & Gray, J. W. (1988). Inducing comprehension in the inconsistently lateralized reader. *Cognitive Neuropsychology, 5*(2), 267-288.
- Schwartz, N.H.**, & Kulhavy, R.W. (1988). Encoding tactics in the retention of maps. *Contemporary Educational Psychology, 13*, 72-85.
- Schwartz, N.H.** (1988). Cognitive processing characteristics of maps: Implications for instruction. *Educational and Psychological Research, 8*(2), 93-101.
- Schwartz, N. H.** & Wilkinson, W. K. (1988). The relationship between epistemological orientation and information processing strategies. *Educational and Psychological Research, 8*(2), 129-139.
- Schwartz, N.H.**, & Kulhavy, R.W. (1987). Map Structure and the comprehension of prose. *Educational and Psychological Research, 7*(2), 113-128.
- Kulhavy, R.W., **Schwartz, N.H.**, and Petersen, S. (1986). Working Memory: The encoding process. In Andre, T., and Phye, G.(Eds.) *Instructional Cognition*. NY: Academic Press, pp. 115-140.
- Dean, R.S., **Schwartz, N.H.**, & Hau, M. (1986). Lateral patterns in schizophrenia and affective disorders. *International Journal of Clinical Neuropsychology*, 145-148.
- Kulhavy, R.W., **Schwartz, N.H.** & Koroscik, J. (1983). Topic relation in map-based instruction. *Educational and Psychological Research, Vol. 3, No. 4*, 235-242.
- Kulhavy, R.W., **Schwartz, N.H.** & Shaha, S.H. (1983). Spatial representations of maps. *American Journal of Psychology, 96*, 337-351.
- Dean, R.W., **Schwartz, N.H.** & Smith, L.S. (1982). Lateral preference patterns as discriminators of learning difficulties. *Psychiatry Digest*, March 14.
- Schwartz, N.H.** (1982). Critique of maps, images, and the dual coding model. *Working Papers and Their Critiques*. Vol 2, 27-29.
- Kulhavy, R.W., **Schwartz, N.H.**, and Shaha, S.H. (1982). Interpretive frameworks and memory for map features. *The American Cartographer, 9*(2), 141-147.
- Kulhavy, R.W. & **Schwartz, N.H.** (1981). Tone of communication and climate perceptions. *The Journal of Business Communication, 18*(1), 17-24.
- Schwartz, N.H.**, and Kulhavy, R.W. (1981). Map features and recall of discourse. *Contemporary Educational Psychology, 6*, 151-158.
- Dean, R.S., **Schwartz, N.H.**, and Smith, L.S. (1981). Children's patterns of lateral preference. *Journal of Consulting and Clinical Psychology, 49*, 227-235.
- Kulhavy, R.W. & **Schwartz, N.H.** (1980). Memory for maps: Image versus concept processing. *Bulletin of the Psychonomic Society, 15*(6), 416-418.
- Schwartz, N.H.** & Dean, R.S. (1978). Laterality preference patterns of learning disabled children. *Perceptual and Motor Skills, 47*, 869-870.
- Schwartz, N.H.**, Garabedian, A.A., Dean, R.S., & Yekovich, F.R. (1977). Effects of input mode on long-term recognition. *Perceptual and Motor Skills, 44*, 736-738.

### *Scientific Investigations In Education*

**Schwartz, N.H.**, Wolfe, J. and Cassar, R. (1997) Teacher characteristics in the referral of serious emotionally disturbed children. *Psychology in the Schools*, 34 (1) 1-22.

Ostrander, R., Colegrove, R. and **Schwartz, N.H.** (1988). Legislative ambiguity and the accuracy in identification of serious emotional disturbance, *Journal of School Psychology*, 26(1),77-86.

**Schwartz, N.H.** and Wilkinson, W. & Thomas, D. (1987). Perceptual influence of psychoeducational reports. *Psychology in the Schools*, 24(2), 127-135.

Wilkinson, W. K. & **Schwartz, N. H.** (1987). The epistemological orientation of gifted adolescents: An empirical test of Perry's model. *Psychological Reports*, 61, 976-978.

Smead, V.S., & **Schwartz, N.H.** (1987). Diagnosis and prescription based upon student task setting interactions. *Techniques: Journal for Remedial Education and Counseling*, 3, 89-101.

**Schwartz, N.H.** (1987). Data integration and report writing. In R.S. Dean (Ed.) *Assessing Human Intelligence*, Springfield, IL: C.C. Thomas, pp. 289-313.

### PAPER PRESENTATIONS

#### *Cognition and Learning*

Lippman, M., **Schwartz, N. H.**, Narciss, S., Danielson, R. W. & Sarmiento, D. (2012). *Interactive Effects of Text and Task Characteristics on Active Cognition, Metacognition, and Learning Outcomes*. Paper accepted for presentation at the annual meeting of the American Educational Research Association, Vancouver, British Columbia, Canada.

**Schwartz, N. H.**, Danielson, R.W., Gonen, S., Valliaido, W. & Fallahi, M. (2011). *Metaphorical Visualizations: Their Influence on the Emotional Intensity of Expository Text Themes*. Paper presented at the annual meeting of the European Association for Learning and Instruction, Exeter, England.

Danielson, R. W., **Schwartz, N. H.**, Stanley, J., Gonen, S., & de Vries, E. (2011). *Relative Judgments of Graphics in the Interpretation of Meaning*. Paper presented at the annual meeting of the European Association for Learning and Instruction, Exeter, England.

Zumbach, J. & **Schwartz, N. H.** (2011). *Cognitive Load Theory Re-examined: A Dynamic Model of Cognitive Load*. Paper presented at the annual meeting of the European Association for Learning and Instruction, Exeter, England.

Lippmann, M., Narciss,S., **Schwartz, N. H.**, Danielson, R.W., & Sarmiento, D. (2011). *Effects of Headings and Keyworking on Learning in Self-regulated Text-based Learning*. Paper presented at the annual meeting of the European Association for Learning and Instruction, Exeter, England.

Danielson, R. W., **Schwartz, N. H.**, Krause, S. Lippmann, M. Gonen, S. Fallahi, M. & Caldwell, S. (2011). *Depection of Theme in Graphics: Its Influence in Expository Text*. Paper presented at the annual meeting of the European Association for Learning and Instruction, Exeter, England.

Lippmann, M., Narciss, S., **Schwartz, N. H.**, Danielson, R. W. & Sarmiento, D. (2011). *Self-regulated Learning from Texts: How is it Affected by Headings and Immediate vs. Delayed Keywording?* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Mortensen, C. & **Schwartz, N. H.** (2011). *The Influence of Critical Thinking Skills in Understanding Decorative Graphics*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Danielson, R. W., Valladao, W., Gonen, S., **Schwartz, N. H.**, & Sarmiento, D. (2010) *Geo-Political Conflict Awareness: The Effect of Metaphorical Graphics on Text Comprehension*. Poster presented at the annual meeting of the Association for Psychological Science, Washington D.C.

Mortensen, C. & **Schwartz, N. H.** (2009). Decorative Graphics as Visual Metaphors: Their Influence on Passage Theme. Paper presented at the annual meeting of the European Association for Learning and Instruction, Amsterdam, Netherlands.

**Schwartz, N. H.** & Kuinke, N. (2009). Decorative graphics as seductive details: The influence of mood and experience on learning from text. Paper presented at the annual meeting of the European Association for Learning and Instruction, Amsterdam, Netherlands.

**Schwartz, N. H.** & Neva, S. R. (2009). Spatial Cognition and Metacognition as Cognitive Load. Paper presented at the annual meeting of the American Educational Research Association, San Deigo, CA, USA.

Forster, D., **Schwartz, N. H.** & Verdi, M. P. (2009). Metacognition in Teaching and Learning. Paper presented at the annual meeting of the American Educational Research Association, San Deigo, CA, USA.

Zumbach, J., Ramsauer, M., **Schwartz, N.H.** & Koch, S.C. (2008). Fostering Hypermedia Learning with Different Argumentation Tools: The Role of Argument Visualization. Paper presented at the biannual meeting of Learning and Instruction with Computers, European Association for Learning and Instruction, Salzburg, Austria.

**Schwartz, N.H.**, & Collins, C. (2008). Arguing a Position from Text: The Influence of Graphic Themes on Schema Activation. Paper presented at the biannual meeting of Learning and Instruction with Computers, European Association for Learning and Instruction, Salzburg, Austria.

**Schwartz, N.H.**, Battinich, W., Lieb, H. & Mortensen, C. (2008). Learning from Graphics: Disentangling the Influence of Theme and Aesthetics. Paper presented at the 29<sup>th</sup> International Congress of Psychology, Berlin, Germany.

Neva, S. & **Schwartz, N.H.** (2008). Spatial Ability and Metacognitive Skill as Cognitive Load: The Difference in Sex in Hypermedia Learning. Paper presented at the annual meeting of the Cognitive Load Conference, Wollongong, Australia.

Angeli, C., **Schwartz, N.H.**, & Wallace, S. (2007). A Methodology for Understanding Cognitive, Affective, and Cultural Aspects of Learning in Online Discourse. Paper presented at the annual meeting of the European Association for Learning and Instruction, Budapest, Hungary.

**Schwartz, N.H.**, Lieb, H., Battinich, W., & Kuinke, N. (2007). The Power of Aesthetics in Graphics: Priming Prior Knowledge and Dictating What Is Learned Paper presented at the annual meeting of the European Association for Learning and Instruction, Budapest, Hungary.

Haynes, L.K., Wallace, S.T., Collins, C.R., & **Schwartz, N.H.** (2006). Configurational Knowledge has Differential Gender Effects in Reducting Cognitive Load. Paper presented at the annual meeting of the Association for Psychological Science, New York, NY.

**Schwartz, N.H.**, Verdi, M., Morris, T., & Larson, N. (2005). Cognitive Representation and Spatial Displays in Web Learning. Paper presented at the European Association for Learning and Instruction, Nicosias, Cyprus.

**Schwartz, N. H.**, Stroud, M.J., Lee, T.R., Scott, B.M. & McGee, S. (2005). Enhancing Hypermedia Learning though Metaphorical Priming . Paper presented at the annual meeting of the European

Association for Learning and Instruction, Nicosias, Cyprus.

Verdi, M., **Schwartz, N.H.**, Larson, N. & Morris, T. (2005). Non Geographic Spatial Displays in Internet Learning. Paper presented at the annual meeting of the European Association for Learning and Instruction, Nicosias, Cyprus.

Scott, B. & **Schwartz, N.H.** (2005). Metacognition as Germane Cognitive Load in Web-based Learning. Paper presented at the annual meeting of the European Association for Learning and Instruction, Nicosias, Cyprus.

**Schwartz, N. H.**, Stroud, M.J., Hong, N., Lee, T.R., Scott, B.M. & McGee, S. (2005). Summoning Prior Knowledge: The Influence of Metaphorical Priming on Learning in a Hypermedia Environment. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

Scott, B., Lee, T. & **Schwartz, N. H.** (2005). Navigational Spatial Displays: The Role of Metacognition on Cognitive Load. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

Morris, T., Larson, N., **Schwartz, N. H.** & Verdi, M. (2005). Navigating Web-based Environments: Differentiating Internal Spatial Representations from External Spatial Displays. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

Larson, N., Morris, T. Verdi, M. & **Schwartz, N. H.** (2005). Can a Geographic List Function as a Cognitive Geographic Map in an Internet Environment? Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

**Schwartz, N.H.**, Stroud, M.J., Hong, N., Lee, T.R., Scott, B.M. & McGee, S. (2004) Summoning Prior Knowledge: The Influence of Metaphorical Priming on Learning in a Hypermedia Environment. Paper presented at the biannual meeting of the European Association for Learning and Instruction, Cyprus.

**Schwartz, N. H.**, Verdi, M., Larson, N., Rittschof, K (2004) The role of configurational knowledge in learning from maps and text. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Phelps, C., **Schwartz, N. H.**, & Stroud, M. J., (2004). *Value of metaphorical graphics in the delayed retention of introductory chemistry concepts*. Paper presented to the American Chemical Society, Washington, D.C.

Rippner, N. & **Schwartz, N.H.** (2003). An Analysis of Configurational Knowledge: Adults' Judgments of Interlocational Distance Vis-à-vis Angularity. Paper presented at the biannual meeting of the European Association for Research in Learning and Instruction, Padova, Italy.

**Schwartz, N.H.** & Verdi, M.P. (2003). Graphic Organization, Spatial Cognition, and navigational orientation in Web-based learning: An Integrated Theory. Paper presented at the biannual meeting of the European Association for Research in Learning and Instruction, Padova, Italy.

Stroud, M., J., **Schwartz, N.H.** & Phelps, C. (2003). Metagraph: The Value of Metaphorical Graphics in Delayed Retention. Paper presented at the biannual meeting of the European Association for Research in Learning and Instruction, Padova, Italy.

Stroud, M. J. & **Schwartz, N.H.** (2003). The Chemistry of Metaphors: Teaching Chemistry Through the Use of Metaphorical Graphics. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

**Schwartz, N.H.**, Hollingworth, R., Graham, L. & Jones, G. (2001). The theory and development of a metaphorical system to teach chemistry. Paper presented at the biannual meeting of the European Association for Research in Learning and Instruction, Fribourg, Switzerland.

**Schwartz, N.H.**, Hollingworth, R. & Arici, A. (2001). The Design and Development of a Web-based Instructional System to Teach Metacognitive Skills in Chemistry, Physics, and Biophysics Problem Solving. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA.

Arici, A., **Schwartz, N.H.** & Hollingworth, R. & (2001) . Metacognitive processes in expert and novel problem solving. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA.

**Schwartz, N. H.**, Gust, M.A., Arici, A. (2000). Factors of Configurational Knowledge that Control Web-based Learning. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Gray, S. & **Schwartz, N. H.** (2000). Metaphorical Graphics and Comprehension of Science Text. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

**Schwartz, N.H.**, Royer, K. Graham, L. & Knight (1999) Using Prior Knowledge and Spatial Displays-- Comprehension and Retention of Text. Paper accepted to the annual meeting of the American Educational Research Association, Montreal, Quebec.

Gust, K., Oppy, B. & **Schwartz, N.H.** (1999). The Role of Configurational Knowledge in Learners' Comprehension of Information in a Hypermedia Environment. Paper accepted to the annual meeting of the American Educational Research Association, Montreal, Quebec.

**Schwartz, N.H.**, Andersen, C., Howard, B., Hong, N. & McGee, S.M. (1998). The Influence of Configurational Knowledge on Children's Problem Solving Performance in a Hypermedia Environment. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Maguire, M. **Schwartz, N.H.**, Graham, L., & Knight, B. (1998). Metaphors, Maps and Diagrams: The Role of Prior Knowledge in Spatial Displays. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Allen, J., **Schwartz, N.H.**, Knight, B., McLaughlin, M. & Graham, L. (1998). Geographic Familiarity and the Retention of Biologically-based Text. Paper presented at the annual meeting of National Consortium for Instruction and Cognition, San Diego, CA.

**Schwartz, N.H.** (1997). Information processing of maps: A report to the geographic community. Paper presented at The First Assessment: Research in Geographic Education Conference. The Center for Geographic Education. Southwest Texas State University, San Marcos, TX.

**Schwartz, N.H.**, Knight, B. & Graham, L. (1996). Knowledge of a Map: Does it Affect Passage Retention? Paper presented at the annual meeting of the National Consortium for Instruction and Cognition, New York, NY.

**Schwartz, N.H.** and Bruett, J.A. (1995). Taking an angle on a map: The role of spatial perspective on map-passage retention. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

**Schwartz, N.H.** and Minto, A.Y. (1995). What a learner brings to a map: The role of semantic perspective in map-passage retention. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Rittschof, K.A., **Schwartz, N.H.**, Verdi, M.P. and Stock, W.A. (1994). The feature versus structure dichotomy in map-text facilitation. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, Louisiana.

Lucas, J. and **Schwartz, N.H.** (1991). The influence of semantic factors of maps in the comprehension of prose. Paper presented at the annual meeting of the National Consortium for Instruction and Cognition, Chicago, Illinois.

Wilkinson, W.K., **Schwartz, N.H.** and McNeil, K. (1991). The influence of map passage structure on the comprehension of prose. Paper presented at the annual meeting of the Southwestern Educational Research Association, Austin, Texas.

Phillippe, A. and **Schwartz, N.H.** (1989). Individual differences in the retention of maps. Paper presented to the annual meeting of the American Educational Research Association, San Francisco, California.

Wilkinson, W.K. and **Schwartz, N.H.** (1989). Influence of epistemological orientation on learning from instruction. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, California.

**Schwartz, N.H.** and Wilkinson, W. (1986). Epistemological orientations in learning from instruction. Paper presented at National Consortium for Instruction and Cognition at the annual meeting of the American Educational Research Association, San Francisco.

**Schwartz, N.H.** and Wilkinson, W. (1986). The role of cognitive processes in unique conceptions of knowledge. Paper presented at the annual meeting of the California Association of School Psychologists, Oakland, CA.

McCown, R., and **Schwartz, N.H.** (1985). Semiotics and the stimulus. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

**Schwartz, N.H.** (1985). Contextual factors in the retention of maps. Paper presented at the annual meeting of the American Education Research Association, Chicago.

**Schwartz, N.H.** and Dean, R.S. (1984). Dual processing and cerebral laterality with preadolescent children. Paper presented at the annual meeting of the American Psychological Association, Toronto.

**Schwartz, N.H.** and Kulhavy, R.W. (1984). Cognitive processing characteristics and the instructional utility of maps. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

**Schwartz, N.H.** and Dean, R.S. (1983). Attention effects in normal children's auditory asymmetries. Paper presented at the annual meeting of the American Psychological Association, Los Angeles.

**Schwartz, N.H.** and Kulhavy, R.W. (1983). Semantic context and the retention of maps. Paper presented at the American Educational Research Association Convention, Montreal.

**Schwartz, N.H.** and Dean, R.S. (1982). Attention effects in auditory asymmetries. Paper presented at the American Psychological Association Convention, Washington, D.C.

**Schwartz, N.H.** and Kulhavy, R.W. (1982). Structural isomorphism and memory for instructional media. Paper presented at the American Educational Research Association Convention, New York.

**Schwartz, N.H.** and Kulhavy, R.W. (1982). Encoding mechanisms in the retention of maps. Paper presented at the American Educational Research Association Convention, New York.

**Schwartz, N.H.**, Kulhavy, R.W., Haygood, R.C., and Garabedian, A.A. (1981). Spatial cognition and learning from maps. Paper presented at the American Educational Research Association Convention, Los Angeles.

**Schwartz, N.H.**, Koroscik, J., and Kulhavy, R.W. (1981). Learner expectations and the encoding of maps. Paper presented at the American Educational Research Association Convention, Los Angeles.

Koroscik, J., Kulhavy, R.W., **Schwartz, N.H.**, and Shaha, S. (1980). Memory for location and distance in maps. Paper presented at the American Psychological Association Convention, Montreal.

Shaha, S., **Schwartz, N.H.**, Kulhavy, R.W., and Koroscik, J. (1980). Memory for maps: Spatial versus conceptual encoding. Paper presented at the Rocky Mountain Psychological Association Convention, Tucson.

**Schwartz, N. H.**, Kulhavy, R.W. Koroscik, J., and Shaha, S. (1980). Spatial memory and conceptual encoding. Paper presented at the Western Psychological Association Convention, Honolulu.

**Schwartz, N.H.** and Dean R.S. (1978). Cerebral laterality and verbal-performance abilities. Paper presented at the Rocky Mountain Educational Research Convention, Albuquerque.

**Schwartz, N.H.** (1976). Modality specific identification in long-term memory. Paper presented at the Rocky Mountain Educational Research Association Convention. Flagstaff.

### **General Issues of Psychology & Education**

Christensen, K. and **Schwartz, N.H.** (1995). Student effects on teacher behavior. Paper presented at the annual meeting of the National Consortium of Instruction and Cognition, San Francisco, CA.

VanAlstyne C.A. & **Schwartz, N.H.** (1994). Gender expectations and the development leadership in children. Paper presented at the annual meeting of the Western Psychological Association, Kona, Hawaii.

Gomes, C. and **Schwartz, N.H.** (1993). Teaching efficacy and epistemological beliefs about teaching. Paper presented at the annual meeting of the National Consortium for Instruction and Cognition, Atlanta, Georgia.

Salmen, D. and **Schwartz, N.H.** (1992). Making predictions from developmental kindergarten. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, California.

Williams, K. and **Schwartz, N.H.** (1992). Epistemological beliefs and related variables. Paper presented at the annual meeting of the National Consortium for Instruction and Cognition, San Francisco, California.

Cassar, R., **Schwartz, N.H.** and Wilkinson, W.K. (1991). Predicting teachers' referrals of emotionally disturbed children. Paper presented at the annual meeting of the National Association of School Psychologists, Dallas, Texas.

Wilkinson, W.K., **Schwartz, N.H.** and Kulhavy, R.W. (1988). A factor analytic study of epistemological orientation and related variables. Paper presented at the annual meeting of the National Consortium for Instruction and Cognition, New Orleans, Louisiana.

Wilkinson, W.K., **Schwartz, N.H.** and Kulhavy, R.W. (1988). Predicting epistemological orientation from demographic, ability and process variables. Paper presented at the annual meeting of the National Consortium for Instruction and Cognition, New Orleans, Louisiana.

**Schwartz, N.H.**, Goldman, J.R. and Petersen, J.D. (1987). Comparison of performance of Anglo and Hualapai school children on measures of receptive and verbal ability. Paper presented at the annual meeting of the Arizona Association of School Psychologists, Phoenix, Arizona.

Brown, P., **Schwartz, N.H.**, Appleton, T., Wilkinson, W. and Hoard, C. (1987). Affective changes of parents following perinatal complications: Preliminary findings. Paper presented at the annual meeting of the American Psychological Association, New York, New York.

Wilkinson, W.K. and **Schwartz, N.H.** (1987). The Knowledge Orientation of Gifted adolescents: An empirical test of Perry's Model. Paper presented at the annual meeting of the National Association of School Psychologists, New Orleans, Louisiana.

**Schwartz, N.H.** and Wilkinson, W. (1987). Changes in maternal anxiety, depression and locus of control following perinatal complication. Paper presented at the annual meeting of the National Association of School Psychologists, New Orleans, Louisiana.

**Schwartz, N.H.**, Kulhavy, R.W., Koroscik, J., and Lee, B. (1980). Cognitive representation of map structures. Paper presented at the American Academy for the Advancement of the Sciences Convention, Las Vegas.

**Schwartz, N.H.**, Kulhavy, R.W., and Finley, J. (1980). Figural organization of a prose passage. Paper presented at the American Educational Research Association Convention, Boston.

**Schwartz, N.H.** and Dean R.S. (1978). Cerebral laterality and children's reading problems. Paper presented at the Rocky Mountain Educational Research Association Convention, Albuquerque.

**Schwartz, N.H.** and Dean, R.S. (1978). Laterality preference patterns of learning disabled children. Paper presented at the Rocky Mountain Educational Research Association Convention, Albuquerque.

**Schwartz, N.H.** (1986). Effective communication in psychological reports. Paper presented at the annual meeting of the Arizona Association of School Psychologists, Prescott, Arizona.

**Schwartz, N.H.**, Colgrove, R., and Ostrander, R. (1986). Content Emphasis in the Perception of Psychological Reports. Paper presented at the annual meeting of the National Association of School Psychologists, Hollywood, Florida.

Ostrander, R., Colgrove, R., **Schwartz, N.** and Daniels, S. (1986). Identification of Emotional Disturbance in Children: A Data-based Model for the Schools. Paper presented at the annual meeting of the National Association of School Psychologists, Hollywood, Florida.

Montague, M. and **Schwartz, N.H.** (1985). Project STEP: Socialization Training for Employment Preparation. Paper presented at the International Conference on the Decade of the Disabled: Transition to Work and Life, Las Vegas, Nevada.

**Schwartz, N.H.** and Wilkinson, W. (1985). Perceptual influence of psychoeducational reports. Paper presented at the annual meeting of the National Association of School Psychologists, Las Vegas.

Smead, V.S. and **Schwartz, N.H.** (1982). An integrative model for instructional planning. Paper presented at the American Psychological Association Convention, Washington, D.C.

**Schwartz, N.H.** and Dean, R.S. (1982). Passage comprehension and the bilateral reader. Paper presented at the American Psychological Association Convention, Washington, D.C.

**Schwartz, N.H.**, Kulhavy, R.W., Schwartz, M.M. and Caterino, L.C. (1980). Decision objectivity and organizational climate. Paper presented at the Western Psychological Association Convention, Honolulu.

### **SYMPOSIA, COLLOQUIA & KEYNOTE ADDRESSES**

**Schwartz, N. H.** (2012). *What kind of graphic is this? A framework for delineating the graphics in text-graphic research.* Invited Keynote Address, Bi-Annual Meeting of SIG 2: Comprehension of Text and Graphics, European Association for Research on Learning and Instruction, Grenoble, France.

**Schwartz, N. H.** (2012). *Multiple Documents, Sources, and Structures.* Invited Discussant, Annual Meeting of the American Educational Research Association, Vancouver, British Columbia.

**Schwartz, N. H.** (2009). *Examining Metacognitive-Tools for supporting effective computer-based learning environments*. Invited Discussant, Annual Meeting of the European Association for Research in Learning and Instruction, Amsterdam, Netherlands.

**Schwartz, N. H.** (2009). *Learning and Instruction with Computers: Recent and future challenges*. Invited Discussant, Annual Meeting of the European Association for Research in Learning and Instruction, Amsterdam, Netherlands.

**Schwartz, N. H.** (2009). *Understanding learning in technology-enhanced classrooms: A distributed cognition perspective*. Invited Discussant, Annual Meeting of the European Association for Research in Learning and Instruction, Amsterdam, Netherlands.

**Schwartz, N. H.** (2009). *Distributed Cognition: A Framework for Understanding Learning in Technology-Enhanced Classrooms*. Invited Discussant, Annual Meeting of the American Educational Research Association, San Diego, CA.

**Schwartz, N. H.** & Mortensen, C. (2009). The Effects of Metaphorical Graphics on Text Theme. Invited paper presented at the Catholic University of Leuven, Leuven, Belgium.

**Schwartz, N.H.** (2008). *Distributed Cognition: A Framework for Understanding Learning with Computers*. Invited Discussant, 29<sup>th</sup> International Congress of Psychology, Berlin, Germany.

**Schwartz, N.H.** (2007). *Inducing Deep Level Comprehension in Web-based Learning: The Role of Metaphorical Priming*. Invited Featured Address at College of Behavioral and Social Sciences, California State University, Chico, CA, USA.

**Schwartz, N.H.** (2007). *Technology Research: Issues in Cognitive and Non-Cognitive Outcomes With Computer-Based Learning*. Invited Discussant, Annual Meeting of the American Educational Research Association, Chicago, IL.

**Schwartz, N.H.** (2007). *Communities in learning contexts: Building knowledge, building identities*. Invited Discussant, Annual Meeting of the European Association for Research in Learning and Instruction, Budapest, Hungary.

**Schwartz, N.H.** (2007). *Building Dynamic Mental Models from Visualizations (II)*. Invited Discussant, Annual Meeting of the European Association for Research in Learning and Instruction, Budapest, Hungary.

**Schwartz, N.H.** (2006). *Affordances in the Construction of Meaning: Heuristics of Thematic Graphics for CSCL*. Invited Keynote Address, Technologia, Cultura E Formazione, Università degli Studi di Roma La Sapienza, Rome, Italy.

**Schwartz, N.H.** (2006). *Perspective and the Construction of Meaning: The Role of Thematic Graphics on Text Comprehension*. Invited paper presented at University of Grenoble, Grenoble, France.

**Schwartz, N.H.** (2006). *Enhancing Practice and Pedagogy of Pre-service Teachers Through Educational Psychology*. Invited Discussant, Annual meeting of the American Educational Research Association, San Francisco.

**Schwartz, N.H.** (2005). *Web-based Learning with Metaphorical Primers*. Invited paper presented at University of Landau-Koblenz, Landau, Germany.

**Schwartz, N.H.** (2004). *The Influence of Metaphorical Priming in Web-based Learning*. Presentation to the Center for Educational Technologies, NASA's Classroom of the Future, Wheeling, WV.

**Schwartz, N.H.** (2003). *Factors Associated with Comprehension in Internet Learning*. Invited paper presented at University of Landau-Koblenz, Landau, Germany

**Schwartz, N.H.** (1999). *Web-based navigation: Working memory space and comprehension*. Invited paper presented at Center for Science Education. Queensland University of Technology, Brisbane, Queensland, Australia

**Schwartz, N.H.** (1998). *Enhancing The Comprehension of Learners: Research on Graphic Displays*. Colloquium presented to the Council on Academic Affairs, California State University, Chico, Chico, CA, January.

**Schwartz, N.H.** (1997). *Learning from Maps: Learner Characteristics and Cognitive Explanation*. Invited paper to be presented at The First Assessment: Research in Geographic Education, Center for Geographic Education, Southwest Texas State University, San Marcos, TX, May 22-25.

**Schwartz, N.H.** (1995). *The utility of maps in instruction: An address to special educators*. Keynote address presented at the Northwest Region Department of Special Education Inaugural Conference, University of New England, Armidale, New South Wales, Australia.

**Schwartz, N.H.** (1995). *The role of maps in instruction: Theory and Practice*. Colloquium presented to the faculty of the University of New England, Armidale, New South Wales, Australia.

**Schwartz, N.H.** (1995). *A contemporary model of psychological service delivery in the schools: A view from the U.S.A.* Colloquium presented to New South Wales Regional School Counseling DGO Group, District Education Administration, Armidale, New South Wales, Australia.

**Schwartz, N.H.** (1994). *Learning from map-based instruction: Recent Findings and directions for future research*. Colloquium presented at the CSUC Psychology Colloquia Series, California State University, Chico, CA.

**Schwartz, N.H.** (1981). *Assessment and diagnostic-prescriptive interventions: Diversity and Perspective*. Symposium presented at the American Psychological Association Convention, Washington, D.C.

**Schwartz, N.H.** (1980). *Imaginal processes*. Paper session chaired at the Western Psychological Association Convention, Honolulu.

## **HONORARY APPOINTMENTS**

**Chairman**, International Research and Scholarship Committee, American Educational Research Association 2009 – 2011.

**Editor**, Division C Bulletin (Learning and Instruction), American Educational Research Association 2006 – 2012.

**Editor**, Division 15 Bulletin (Educational Psychology), American Psychological Association, 2009 – 2011.

**Co-chairman**, Board of Directors, Division 7 (Computers in Human Learning) European Association for Research in Learning and Instruction, 2005 - 2009

**Chairman**, Board of Directors, National Consortium for Instruction and Cognition 2004 – 2008

**Executive Member**, Board of Advisors, NASA's Virtual Design Center, Center for Educational Technologies, 2004 - present

**Executive Officer for Programs**, National Consortium for Instruction and Cognition 1991-1993.

**Executive Officer for Public Relations**, National Consortium for Instruction and Cognition,

1986-1991.

**Executive Officer for Communications, National Consortium for Instruction and Cognition**  
1989-1991

### **ORGANIZATIONAL AFFILIATIONS**

American Psychological Society (APS)  
National Consortium for Instruction and Cognition (NCIC)  
European Association for Research in Learning and Instruction (EARLI)  
American Educational Research Association (AERA)

### **PROFESSIONAL LICENSURE**

**Psychologist**, Arizona, License #1120

### **EDITORIAL ACTIVITY**

#### **Editorial Board Membership**

**Member**, Editorial Board, *Computers in Human Behavior*, 2005-2011.  
**Member**, Manuscript Review Board, *Journal of Educational Computing Research*, 2007 – 2011.  
**Member**, Scientific Committee, *QWERTY*, 2005-2011.  
**Member**, Editorial Board, *Contemporary Educational Psychology*, 1989-2000.  
**Member**, Editorial Board, *Journal of School Psychology*, 1987-1992.  
**Member**, Editorial Board, *Educational and Psychological Research*, 1987-1990.  
**Member**, Scientific Committee, International Conference of the Learning Sciences (ICLS) 2007  
**Advisory Editor**, *Allyn and Bacon*, 1989-1990.

#### **Editorial Reviewer**

**Reviewer**, *Journal of Applied Cognitive Psychology*, 2000-present  
**Reviewer**, *Learning and Instruction*, 2003-present  
**Reviewer**, *Computers in Education*, 2008-present  
**Reviewer**, *Journal of Educational Psychology*, 1991-present  
**Reviewer**, *Journal of Structural Learning*, 1985.  
**Reviewer**, FIPSE, *Fund for the Improvement of Postsecondary Education*, 2004  
**Reviewer**, Annual meeting of the *American Educational Research Association*, 2000-present

### **CONTRACTS: AWARDED**

**Schwartz, N. H.** (2001). *Cognitive Structure, Perspective, and Prior Knowledge: The Influence of Metaphorical Priming on Learning in a Hypermedia Environment*. NASA Classroom of the Future, Center for Educational Technologies, Wheeling Jesuit University, Wheeling, West Virginia. **Contract Amount: USD\$25,000**

#### **GRANTS: FUNDED**

**Schwartz, N. H.** (2010). *A Transatlantic Dual Master's Degree in International Cognitive Visualization*. E.U.- U.S. Atlantis Grant Program, a joint initiative between FIPSE, U.S Department of Education and the European Commission. **Funds requested: USD \$415,681. Funded: USD \$415,681.**

**Schwartz, N.H.** (2007). *The Creation of an International Consortium to Train Graduate Students in the Conduction of Research in the Learning Sciences* Behavioral and Social Sciences Strategic Performance Award. **Funds requested: USD \$5,015. Funded: USD \$4,899.**

**Schwartz, N.H.** (2003). *Mentoring Bachelors' and Masters' Students in the Production of Published Research*. Behavioral and Social Sciences Strategic Performance Award. **Funds requested: USD \$5,015. Funded: USD \$5,000.**

**Schwartz, N.H.** and Graham, L. (2000). *Smarter Science Instruction: Media, Metaphors, and Moving Around the Web*, Australian National ARC Small Grant **Funds requested: AUD\$ 6,000. Funded: AUD \$6,000**

**Schwartz, N.H.,** Graham, L., Mulquiney, C. and Maurer, J. (1998). *Research & the Mentoring Process: Investigating A Model to Conduct Research with students*. UNE Internal Research Grant. **Funds requested: AUD\$5,000. Funded: AUD\$ 2,500.**

Hollingworth, R., **Schwartz, N.H.**, Notestine, M., Sholl, C., Muldoon, R. and Quinn, F. (1999). *Making Science Easier to Learn: A Proposal for On-line Tutorials and CD ROM*. Australian National Teaching Development Grant. **Funds requested: AUD\$48,000. Funded: AUD\$ 42,000.**

**Schwartz, N.H.,** Hollingworth, R., Graham, L., Lloyd-Jones, G., Mulquiney, C., Watson, K. and Bowie, C. (1999). *Understanding Chemistry: Building a Metaphorical Web to Teach Chemical Concepts*. Australian National Teaching Development Grant. **Funds requested: AUD\$47,000. Funded: AUD\$ 40,000.**

**Schwartz, N.H.** (1998). Summer Scholar Award. Grant to conduct research of the summer of 1998, Office of Sponsored Projects, California State University, Chico **Funds requested: USD\$3,000. Funded: USD\$ 3,000.**

**Schwartz, N.H.** (1997). *AWTU Release Time*. Grant Incentive Committee, College of Behavioral and Social Sciences, California State University, Chico, Fall Semester, **Funds requested: USD\$3,545 Funded: USD\$ 3,545.**

**Schwartz, N.H.** , (1993) raised funds from various agencies in support of the *1991 Conference on High Risk Infants Preschool Children and their Families*, Chico, CA May 28-31, 1991. **Amount raised: USD\$26,000**

**Schwartz, N.H.** (1988). Organized Research Grant from Northern Arizona University Research Committee for 1987-88 and six hours release time. **Amount: USD\$3,000.00**

**Schwartz, N.H.** (1986). Grant from Center for Excellence in Education, NAU, for *Identification of Emotional Disturbance in Children: A Data-based Model for the Schools*. **Amount: USD\$5,000.00**

#### **RECENT GRANT PROPOSALS: UNFUNDED**

**Schwartz, N.H.** and de Vries, E. (2008). *A Research Training Program for Preparing Cognitive Consultants to Develop Better Distributed Graphical Thinking Tools to Enhance Global Collaborative Engineering Design*. Partner University Fund, **Amount Requested: USD\$295,130**

**REFERENCES**

Richard C. Anderson, Ph.D.

Professor, Department of Educational Psychology , University of Illinois  
Professor, Department of Psychology, University of Illinois  
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Professor, Department of Applied Social Sciences, Hong Kong Polytechnic University  
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