March, 2013

James G. Greeno
School of Education, University of Pittsburgh
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Pittsburgh PA 15260
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Personal

Born:	1 May 1935, Sioux Falls, South Dakota
Marital Status:	Married Noreen H. Greeno, 15 June 1957
Children:	John G. Greeno, born 30 March 1958
	Catherine G. Greeno, born 30 May 1960

Education

Ph.D.	Psychology, University of Minnesota, 1961
M.A.	Psychology, University of Minnesota, 1958
B.A.	Psychology, University of Minnesota, 1957

Professional History

University of Pittsburgh
    2012-present, Adjunct Professor of Education
    2003-2012, Visiting Professor of Education,
    2003-present, Center Associate, Learning Research and Development Center
    1976–1984, Professor–University Professor of Psychology
    1976–1984, Senior Scientist, Learning Research and Development Center
Stanford University
    2003-present, Margaret Jacks Professor of Education, Emeritus,
    1987–2003, Margaret Jacks Professor of Education
    1989-1992, Director, Symbolic Systems Program
Institute for Research on Learning;
    1991-2000, Co-Founder and Senior Research Fellow
    1987-1991, Associate Director-Acting Director
University of California, Berkeley
    1984–1987, Professor of Education and Chair, Program in Education in Mathematics, Science, and Technology,
University of Michigan, Ann Arbor
    1968–1976, Associate Professor–Professor of Psychology,
Indiana University, Bloomington
    1961–1968, Instructor–Professor of Psychology

Professional Affiliations and Honors

National Academy of Education, elected 1982
    Chair, Section III (Psychology), l989–1992
    Member, Executive Committee, 1992-1993
    Vice-President for Programs, 1997-2001
    Member, Research Advisory Committee, 2007-2010.
    Member, Spencer/NAE Fellowship Selection Committee, 2010-2013
Society of Experimental Psychologists, elected 1979
    Secretary–Treasurer, 1979–1982
Indiana University Institute for Advanced Study, Branigan Lecturer, 2011
The College Board, Visiting Scholar, 2000-2001
Fellow, Center for Advanced Studies in the Behavioral Sciences, 1998-1999
Recipient, J. McKeen Cattell Award, 1994-1995

Recipient, E. L. Thorndike Award, Division of Educational Psychology, American Psychological Association, 1994
Guggenheim Fellow, 1973–1974

Federation of Behavioral, Psychological, and Cognitive Sciences
     President, 1982–1984
Cognitive Science Society, member since 1979
     Fellow, elected 2012
     Governing Board, 1987–1993, Chair, 1990–1991
Psychonomic Society, member 1965 - 2002
     Governing Board, 1975–1980, Chair, 1980
     Committee on Publications, 1976–1980, Chair, 1980
Society for Mathematical Psychology, member 1977-2002
     Executive Committee, 1978–1983, Chair, 1980
Midwestern Psychological Association, member since 1960
     President, 1977–1978
American Psychological Association, member 1962-2013.
     Fellow, Divisions of Experimental and Educational Psychology, elected 1975
     Fellow, Division of General Psychology, elected 2003
     President, Division of Educational Psychology, 2004-2005
     President, Division of Experimental Psychology, 1982–1983
     Council of Representatives, 1977–1979
     Board of Scientific Affairs, 1980–1982
American Educational Research Association, member since 1969
     Vice–President, Division of Learning and Instruction, 1984–1986
     Research Advisory Committee, 1998-2002
National Council of Teachers of Mathematics, member
American Association for the Advancement of Science, member, 1966–1991.
     Fellow, elected 1976
     Electorate J (Psychology) Nominating Committee, 1984–1987
     Council Delegate, Electorate J, 1985–1987
American Psychological Society, member, 1988-1995
     Fellow, elected 1988

Cognitive Science
     Editor, 1986–1989
     Editorial Board, 1981, 1990–1992
     Executive Editor 1993-2000.
     Associate Editor, 2001-2005
Cognition and Instruction
     Editorial Board, 2003-present.
Journal of the Learning Sciences
     Consulting Editor, 1990-1992.
     Editorial Board, 1993-present;
Measurement: Interdisciplinary Research and Perspectives
     Editorial Board, 2001-present.
Journal of Mathematical Psychology
     Consulting Editor, 1976–1981, 1985–1989.
Journal of Experimental Psychology: Human Learning and Memory,
     Consulting Editor, 1980–1981.
Memory & Cognition,
     Consulting Editor, 1973–1976.
Journal of Verbal Learning and Verbal Behavior,
     Consulting Editor, 1974–1976.
Psychometrika,
     Associate Editor, 1974–1976.

TERC,

President's Council, 2008-present.
Learning in Informal and Formal Environments (LIFE) Center, University of Washington and Stanford University,
    Member, Science and Technology Advisory Board, 2005-2009.
        Member, Advisory Board, 2009-present..
Quality of Vocational Education, Leading House, University of Fribourg,
    Advisory Board, 2004-2010.
Commission on Behavioral and Social Sciences and Education, National Research Council,
    Member, 1994-1997.
Working Group on Science Assessment Standards, National Committee on Science Education Standards and
    Assessment, National Research Council,
        Member, 1992-1995.
Coordinating Committee for Human Capital Initiative, American Psychological Society, American Psychological
    Association, and Federation for Behavioral, Psychological, and Cognitive Sciences,
        Member, 1992-1995.
Committee on Strategic Technologies for the Army, National Research Council,
    Member, 1989–1991.
Committee on Basic Research in the Behavioral and Social Sciences, Commission on Behavioral and Social Sciences and
    Education, National Research Council,
        Member, 1982–1988.
Working Group on Simulation, Committee on Human Factors, National Research Council,
    Member,1981–1984.
Advisory Committee on Memory and Cognitive Processes, National Science Foundation,
    Member, 1977–1979.
Committee on Fundamental Research Relevant to Education, Assembly of Behavioral and Social Sciences, National
    Research Council,
        Member, 1976–1977.
Experimental Psychology Study Section, National Institutes of Health,
    Member, 1969–1973.

Publications

Invited Chapters and Addresses
Greeno, J. G. (2011). A situative perspective on cognition and learning in interaction. In T. Koschmann (Ed.), *Theories of learning and studies of instruction* (pp. 41-72). New York: Springer.
van de Sande, C. & Greeno, J. G. (2010). A framing of instructional explanations: Let us explain *with* you. In M. K. Stein & L. Kucan (Eds.). *Instructional explanation in the disciplines* (pp. 69-82). New York: Springer.
Yaron, D., Karabinos, M., Evans, K., Davenport, J., Cuadros, J. & Greeno, J. G. (2010). Learning chemistry: What, when, and how? In M. K. Stein & L. Kucan (Eds.), *Instructional explanations in the disciplines* (pp. 41-50). New York: Springer.
Greeno, J. G. & Gresalfi, M. S. (2008). Opportunities to learn in practice and identity. In P. A. Moss, D. C. Pullin, J. P. Gee, E. H. Haertel, & L. J. Young (Eds.) *Assessment, equity, and opportunity to learn* (pp. 170-199). Cambridge, England: Cambridge University Press.
Hall, R., & Greeno, J. G. (2008). Conceptual learning. In T. L. Good (Ed.), *21st century education: A reference handbook, volume one.* (pp. 212-223). New York: Sage.
Moss, P. A., Girard, B. J., & Greeno, J. G. (2008). Sociocultural implications for assessment II: Professional learning, evaluation, and accountability. In P. A. Moss, D. C. Pullin, J. P. Gee, E. Haertel & L. J. Young (Eds.), *Assessment, equity, and opportunity to learn* (pp. 295-332). Cambridge, England: Cambridge University Press.
Sawyer, R. K., & Greeno, J. G. (2008). Situativity and learning, in R. K. Sawyer (Ed.), *Cambridge handbook of situated cognition.* Cambridge, England: Cambridge University Press.
Engle, R. A., Conant, F. R., & Greeno, J. G. (2007). Progressive refinement of hypotheses in video-supported research, In R. Goldman, R. Pea, B. Barron, & S. J. Derry (Eds.), *Video research in the learning sciences* (pp. 239-254). Mahwah NJ: Lawrence Erlbaum Associates.
Greeno, J. G. (2007). Toward the development of intellective character. In E. W. Gordon & B. L. Bridglall (Eds.), *Affirmative development: Cultivating academic ability* (pp. 17-47). Lanham, MD: Rowman & Littlefield.
Greeno, J. G. & Saxe, G. B (2007). Conceptual growth in children and in the learning sciences: Giyoo Hatano's contributions. *Human Development, 50,* 55-64.

Greeno, J. G. & van de Sande, C. (2007). Perspectival understanding of conceptions and conceptual growth in interaction. *Educational Psychologist, 42,* 9-23.

Davis, F. E., West, M. M., Greeno, J. G., Gresalfi, M. S., & Martin, H. T., with Moses, R., & Currell, M. (2006). Transactions of mathematical knowledge in the Algebra Project. In N. S. Nasir & P. Cobb (Eds.), *Improving access to mathematics: Diversity and equity in the classroom* (pp. 69-88). New York: Teachers College Press.

Greeno, J. G. (2006). Learning in activity. In R. K. Sawyer (Ed.), *The Cambridge handbook of the learning sciences* (pp. 79-96). New York: Cambridge University Press.

Greeno, J. G. (2006). Theoretical and practical advances through research on learning. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in education research* (pp. 795-822). Washington DC and Mahwah NJ: American Educational Research Association and Lawrence Erlbaum Associates.

Hull, G. A. & Greeno, J. G. (2006). Identity and agency in nonschool and school worlds. In Z. Bekerman, N. C. Burbules, & D. Silberman-Keller (Eds.), *Learning in places: The informal education reader* (pp. 77-97). New York: Peter Lang.

Greeno, J. G. (2003). Situative research relevant to standards in mathematics education. In J. Kilpatrick, W. G. Martin, & D. E. Schifter, (Eds.). *A research companion to* Principles and standards for school mathematics. Reston, VA: National Council of Teachers of Mathematics.

Stenning, K., Greeno, J. G., Hall, R., Sommerfeld, M., & Wiebe, M. (2002). Coordinating mathematical with biological multiplication: Conceptual learning as the development of heterogeneous reasoning systems. In M. Baker, P. Brna, K. Stenning, & A. Tiberghien, (Eds.), *The role of communication in learning to model* (pp. 3-48). Mahwah NJ: Lawrence Erlbaum Associates.

Greeno, J. G. (2001). Students with competence, authority, and accountability: Affording intellective identities in classrooms. New York: The College Board.

Collins, A., Greeno, J. G., & Resnick, L. B. (2001). Educational learning theories. In N. J. Smelser & P. B. Baltes (Eds.). *Encyclopedia of the social and behavioral sciences.* Oxford, UK: Elsevier

Boaler, J., & Greeno, J. G. (2000). Identity, agency, and knowing in mathematics worlds. In J. Boaler (Ed.), *Multiple perspectives on mathematics teaching and learning* (pp. 171-200). Stamford, CT: Elsevier Science.

Greeno, J. G., McDermott, R., Cole, K., Engle, R. A., Goldman, S., Knudsen, J., Lauman, B., & Linde, C. (1999). Research, reform, and aims in education: Modes of action in search of each other. In E. Lagemann & L. Shulman (Eds.), *Issues in education research: Problems and possibilities* (pp. 299-335). San Francisco: Jossey-Bass.

Greeno, J. G., & Hall, R. P. (1997). Practicing representation: Learning with and about representational forms. *Phi Delta Kappan, 78,* 361-367.

Greeno, J. G., and the Middle-school Mathematics through Applications Project Group (1997). Theories and practices of thinking and learning to think. *American Journal of Education, 106,* 85-126.

Greeno, J. G. and the Middle-school Mathematics through Applications Project Group (1997). Participation as fundamental in mathematics education. In J. A. Dossey, J. O Swafford, M. Parmantie, & A. E. Dossey (Eds.), *Proceedings of the Nineteenth Annual Meeting, North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1-15). Columbus, OH: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Collins, A., Greeno, J. G., & Resnick, L. B. (1996). Learning environments. In E. DeCorte & F. E. Weinert (Eds.), *International encyclopedia of developmental and instructional psychology.* New York: Elsevier.

Greeno, J. G., Collins, A., & Resnick, L. B. (1996). Cognition and learning. In D. Berliner & R. Calfee (Eds.), *Handbook of educational psychology* (pp. 15-46). New York: Macmillan.

Greeno, J. G. (1995). Understanding concepts in activity. In C. A. Weaver III, S. Mannes, & C. R. Fletcher (Eds.), *Discourse comprehension: Essays in honor of Walter Kintsch* (pp. 65-96). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greeno, J. G. (1993). Research to reform education and cognitive science. In L. A. Penner, G. M. Batsche, H. M. Knoff, & D. L. Nelson (Eds.), *The challenge in mathematics and science education: Psychology's response* (pp. 153-192). Washington, DC: American Psychological Association.

Greeno, J.G., Smith, D.R., & Moore, J.L. (1993). Transfer of situated learning. In D. K. Detterman & R. J. Sternberg (Eds.), *Transfer on trial: Intelligence, cognition, and instruction* (pp. 99-167). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1992). Mathematical and scientific thinking in classrooms and other situations. In D. Halpern (Ed.), *Enhancement of higher–order thinking in science and mathematics education* (pp. 39-62). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greeno, J. G. (1991). Mathematical cognition: Accomplishments and challenges in research. In R. R. Hoffman & D. S. Palermo (Eds.), *Cognition and the symbolic processes: Applied and ecological perspectives* (pp. 255-280). Hillsdale, NJ: Lawrence Erlbaum Associates. An earlier version was published in T. A. Romberg & D. M. Stewart (Eds.), *The monitoring of school mathematics: Background papers* (Vol. 2). Wisconsin Center for education Research, School of Education, University of Wisconsin.

Greeno, J.G. (1991). A view of mathematical problem solving in school. In M. U. Smith (Ed.), *Toward a unified thoery of problem solving: Views from the content disciplines* (pp. 69–98). Revised version of Greeno, J.G. (l988). The situated activities of learning and knowing mathematics. In M. Behr (Ed.), *Proceedings of the International Group for the Psychology of Mathematics Education, North American Group.* Dekalb, IL: University of Northern Iowa.

Greeno, J.G. (1991). Productive learning environments. In S. Otsuki & R. Lewis (Eds.), *Advanced research on computers in education.*

Gelman, R., & Greeno, J. G. (1989). On the nature of competence: Principles for understanding in a domain. In L. B. Resnick (Ed.), *Knowing, learning and instruction: Essays in honor of Robert Glaser* (pp. 125–186). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greeno, J. G. (1989). A perspective on thinking. *American Psychologist, 44,* 134–141

Greeno, J. G. (1989). Situations, mental models, and generative knowledge. In D. Klahr, & K. Kotovsky (Eds.), *Complex information processing: The impact of Herbert A. Simon* (pp. 285–318). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greeno, J. G., & Simon, H. A. (1988). Problem solving and reasoning. In R. C. Atkinson, R. J. Herrnstein, G. Lindzey, & R. D. Luce (Eds.), *Stevens' handbook of experimental psychology, second edition, volume 2: Learning and cognition* (pp. 589–672). New York: John Wiley & Sons.

Pirolli, P. L., & Greeno, J. G. (1988). The problem space of instructional design. In J. Psotka, L. D. Massey, & S. A. Mutter (Eds.), *Intelligent tutoring systems: Lessons learned* (pp. 181–202). Hillsdale, NJ: Lawrence Erlbaum Associates.

Chi, M.T.H., & Greeno, J.G. (1987). Cognitive research relevant to education., In J.A. Sechzer & S.M. Pfafflin (Eds.), *Psychology and educational policy* (vol. 517, pp. 39–57). New York: The New York Academy of Sciences.

Greeno, J.G. (1987). Instructional representations based on research about understanding., In A.H. Schoenfeld (Ed.), *Cognitive science and mathematics education* (pp. 61–88). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1986). Advancing cognitive science through development of advanced instructional systems. *Machine–Mediated Learning, 1,* 327–343.

Greeno, J.G., & Riley, M.S. (1984). Prozesse des Verstehens und ihre Entwicklung. In F.E. Winert & R.H. Kluwe (Eds.), *Metakognition motivation und lernen.* (pp. 252–273). Stuttgart: W. Kohlhammer. Also published (1987) as: Processes and development of understanding. In F.E. Weinert & R.H. Kluwe (Eds.), *Metacognition, motivation, and understanding* (pp. 289–316). Hillsdale NJ: Lawrence Erlbaum Associates.

VanLehn, K., Brown, J.S., & Greeno, J.G. (1984). Competetive argumentation in computational theories of cognition. In W. Kintsch, J.R. Miller, & P.G. Polson (Eds.), *Methods and tactics in cognitive science* (pp.235–262). Hillsadle NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1983). Conceptual entities. In D. Gentner & A.L. Stevens (Eds.), *Mental models.* Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1983). Forms of understanding in mathematical problem solving. In S. G. Paris, G .M. Olson, & H. W. Stevenson (Eds.), *Learning and motivation in the classroom.* Hillsdale NJ: Lawrence Erlbaum Associates. (Briefer versions published in R. Glaser & J. Lompscher (Eds.), *Cognitive and motivational aspects of instruction.* Berlin: Deutscher Verlag der Wissenschaften, 1982; and (in Japanese) in *Psychology,* 1982, *23,* 60–64. Tokyo: Science Sha.)

Riley, M. S., Greeno, J. G., & Heller, J. I. (1983). Development of children's problem–solving ability in arithmetic. In H.P. Ginsburg (Ed.), *The development of mathematical thinking.* New York: Academic Press, 1983.

Greeno, J. G. (1981). Knowledge–based decision processes in problem solving. In B. Lomov, V. Krilov, N., Krilova, R. Luce, & W. Estes (Eds.), *Normative and descriptive models of decision processes.* Moscow: Academy of Science, USSR.

Anderson, J. R., Greeno, J. G., Kline, P .J. & Neves, D. M. (1981). Acquisition of problem–solving skill. In J. R. Anderson (Ed.), *Cognitive skills and their acquisition.* Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J. G. (1980). Psychology of learning, 1960–1980: One participant's observations. *American Psychologist, 35,* 713–728. (Also published, in Russian, in *Psychological Journal,* 1982, 3, 140–152.)

Greeno, J. G. (1980). Analysis of understanding in problem solving. In R. Kluwe & H. Spada (Eds.), *Developmental models of thinking.* New York: Academic Press.

Greeno, J. G. (1980). Some examples of cognitive task analyses with instructional implications. In R. E. Snow, P. A. Federico, & W. E. Montague (Eds.), *Aptitude, learning, and instruction: Cognitive process analyses of learning and problem solving* (vol. 2). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1980). Trends in the theory of knowledge for problem solving. In D.T. Tuma & F. Reif (Eds.), *Problem solving and education: Issues in teaching and research.* Hillsdale NJ: Lawrence Erlbaum Associates.

Larkin, J. H., Heller, J. I., & Greeno, J. G. (1980). Instructional implications of research on problem solving. In W. J. McKeachie (Ed.), *New directions for teaching and learning, Number 2.* San Francisco: Jossey–Bass.

Greeno, J.G. (1979). Preliminary steps toward a cognitive model of learning primary mathematics. In K.C. Fuson & W.E. Geeslin (Eds.), *Explorations in the modeling of the learning of mathematics* (pp. 159-175). Columbus OH: ERIC/SMIAC Science and Mathematics Information Analysis Center.

Heller, J.I., & Greeno, J.G. (1979). Information processing analysis of mathematical problem solving. In R.W. Tyler & S.H. White (Eds.), *Testing, teaching, and learning: Report of a conference on research on testing.* U.S. Department of Health, Education, and Welfare, National Institute of Education.

Greeno, J.G. (1978). Natures of problem–solving abilities. In W.K. Estes (Ed.), *Handbook of learning and cognitive processes* (vol. 5). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1978). A study of problem solving. In R. Glaser (Ed.), *Advances in instructional psychology* (vol. 1). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1978). Understanding and procedural knowledge in mathematics instruction. *Educational Psychologist, 12*, 262–283.

Greeno, J.G. (1977). Process of understanding in problem solving. In N.J. Castellan, D.B. Pisoni, & G.R. Potts (Eds.), *Cognitive theory* (vol. 2, pp. 43–83). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1976). Cognitive objectives of instruction: Theory of knowledge for solving problems and answering questions. In D. Klahr (Ed.), *Cognition and instruction* (pp. 123–159). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1976). Psychological representation of structured knowledge. In J.M. Scandura (Ed.), *Structural learning II. Issues and approaches* (pp. 73–95). New York: Gordon and Breach Science Publishers.

Greeno, J.G. (1976). Some preliminary experiments on structural learning. In J.M. Scandura (Ed.), *Structural learning II. Issues and approaches* (pp. 97–104). New York: Gordon and Breach Science Publishers.

Egan, D.E., & Greeno, J.G. (1974). Theory of rule induction: Knowledge acquired in concept learning, serial pattern learning, and problem solving. In L.W. Gregg (Ed.), *Knowledge and cognition* (pp. 43–103), Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1974). Processes of learning and comprehension. In L.W. Gregg (Ed.), *Knowledge and cognition* (pp. 17–28). Hillsdale NJ: Lawrence Erlbaum Associates.

Greeno, J.G. (1974). Representation of learning as discrete transition in a finite state space. In D.H. Krantz, R.C. Atkinson, R.D. Luce, & P. Suppes (Eds.), *Contemporary developments in mathematical psychology* (vol. 1, pp. 1–43). San Francisco: W.H. Freeman.

Greeno, J.G. (1973). The structure of memory and the process of solving problems. In R.L. Solso (Ed.), *Contemporary issues in cognitive psychology: The Loyola Symposium* (pp. 103–133). Washington D.C.: V.H. Winston & Sons.

Greeno, J.G. (1973). A survey of mathematical models in experimental psychology. In B.B. Wolman (Ed.), *Handbook of general psychology* (pp. 123–162). Englewood Cliffs NJ: Prentice–Hall.

Greeno, J.G. (1973). Theory and practice regarding acquired cognitive structures. *Educational Psychologist*, 10, 117–122.

Greeno, J.G., & Bjork, R.A. (1973). Mathematical learning theory and the new "mental forestry." *Annual Review of Psychology, 24*, 81–116.

Greeno, J.G. (1972). Mathematics in psychology. In P.C. Dodwell (Ed.), *New horizons in psychology 2* (pp. 86–104). Baltimore MD: Penguin Books.

Greeno, J.G. (1972). On the acquisition of a simple cognitive structure. In E. Tulving & W. Donaldson (Eds.), *Organization of memory* (pp. 353–377). New York: Academic Press.

Greeno, J.G. (1971). Theoretical entities in statistical explanation. In R.C. Buck & R.S. Cohen (Eds.), *Boston studies in the philosophy of science* (vol. 8, pp. 3–26). Dordrecht, Holland: D. Reidel.

Greeno, J.G. (1970). Conservation of information–processing capacity in paired–associate memorizing. *Journal of Verbal Learning and Verbal Behavior, 9*, 581–586.

Greeno, J.G. (1970). How associations are memorized. In D.A. Norman (Ed.), *Models of human memory* (pp. 257–284). New York: Academic Press, 1970.

Research Journal Articles

van de Sande, C. C. & Greeno, J. G (2012), Achieving alignment of perspectival framings in problem-solving discourse. *Journal of the Learning Sciences,* 21, *1-44.*

Gresalfi, M. S., Martin, T., Hand, V., & Greeno J. G. (2009). Constructing competence: An analysis of student participation in the activity systems of mathematics classrooms *Educational Studies in Mathematics, 70,* 49-70.

Greeno, J. G. and the Middle-school Mathematics through Applications Project Group (1998). The situativity of knowing, learning, and research. *American Psychologist, 53,* 5-26.

Hall, R. P., Knudsen, J., & Greeno, J. G. (1995/1996). A case study of systemic aspects of assessment technologies. *Educational Assessment, 3,* 315-361.

Greeno, J. G. (1991). Number sense as situated cognition in a conceptual domain. *Journal for Research in Mathematics Education, 22*, 170–218.

Smith, D.A., Greeno, J.G., & Vitolo, T.M. (l989). A model of competence for counting. *Cognitive Science, 13*, 183–211.

Riley, M. S., & Greeno, J. G. (1988). Developmental analysis of understanding language about quantities and solving problems. *Cognition and Instruction, 5*, 49–101.

Kintsch, W., & Greeno, J. G. (1985). Understanding and solving word arithmetic problems. *Psychological Review, 92,* 109-129 .

Greeno, J. G., Riley, M. S., & Gelman, R. (1984). Conceptual competence and young children's counting. *Cognitive Psychology, 16,* 44-143.

Nesher, P., Greeno, J.G., & Riley, M.S. (1982). The development of semantic categories for addition and subtraction. *Educational Studies in Mathematics, 13*, 373–394.

Greeno, J.G., Magone, M.E. & Chaiklin, S. (1979). Theory of constructions and set in problem solving. *Memory and Cognition, 7,* 445–46l.

Miller, J., & Greeno, J.G. (1978). Goodness–of–fit tests for models of latency and choice. *Journal of Mathematical Psychology, 17,* 1–13.

Greeno, J.G. (1976). Indefinite goals in well–structured problems. *Psychological Review, 83,* 479–49l.

Kieras, D.E., & Greeno, J.G. (1975). Effect of meaningfulness on judgments of computability. *Memory and Cognition, 3*, 349–355.

Mayer, R.E., & Greeno, J.G. (1975). Effects of meaningfulness and organization on problem solving and computability judgments. *Memory and Cognition, 3*, 356–362.

Mayer, R.E., Stiehl, C.C., & Greeno, J.G. (1975). Acquisition of understanding and skill in relation to subjects' preparation and meaningfulness of instruction. *Journal of Educational Psychology, 67*, 331–350.

Greeno, J.G. (1975). Hobbits and orcs: Acquisition of a sequential concept. *Cognitive Psychology, 6*, 270–292.

Greeno, J.G., & Noreen, D.L. (1974). Time to read semantically related sentences. *Memory and Cognition, 2*, 117–120.

Greeno, J.G., & Simon, H.A. (1974). Processes for sequence production. *Psychological Review, 81*, 187–198.

King, D.R.W., & Greeno, J.G. (1974). Invariance of inference time when information was presented in different linguistic formats. *Memory and Cognition, 2*, 223–235.

Wandell, B.A., Greeno, J.G., & Egan, D.E. (1974). Equivalence classes of functions of finite Markov chains. *Journal of Mathematical Psychology, 11*, 391–403.

Egan, D.E., & Greeno, J.G. (1973). Acquiring cognitive structure by discovery and rule learning. *Journal of Educational Psychology, 64*, 85–97. (Also published, in German, in H. Neber (Ed.), *Entdeckendes Lernen.* Weinheim: Beltz Verlag, 1981.)

Mayer, R.E., & Greeno, J.G. (1972). Structural differences between learning outcomes produced by different instructional methods. *Journal of Educational Psychology, 63*, 165–173.

Greeno, J.G., James, C.T., & DaPolito, F.J. (1971). A cognitive interpretation of negative transfer and forgetting of paired associates. *Journal of Verbal Learning and Verbal Behavior, 10*, 331–345.

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