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Development of metacognitive skills in young adolescents : a bumpy ride to the high road

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Citation

Stel, M. van der. (2011, October 6). *Development of metacognitive skills in young adolescents : a bumpy ride to the high road*. Retrieved from <https://hdl.handle.net/1887/17910>

Version: Corrected Publisher's Version

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Downloaded from: <https://hdl.handle.net/1887/17910>

Note: To cite this publication please use the final published version (if applicable).

References

- Adams, M.J. (1989). Thinking skills curricula: Their promise and progress. *Educational Psychologist*, 24, 25-77.
- Alexander, J., Carr, M., & Schwanenflugel, M. (1995). Development of metacognition in gifted children: Directions for future research. *Developmental Review*, 15, 1-37.
- Allon, M., Gutkin, T., & Bruning, B. (1994). The relation between metacognition and intelligence in normal adolescents: Some tentative but surprising findings. *Psychology in the Schools*, 31, 93-97.
- Anderson, J.R. (1996). *The architecture of cognition*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Annevirta, T., & Vauras, M. (2006). Developmental changes of metacognitive skill in elementary school children. *Journal of Experimental Education*, 74, 197-225.
- Azevedo, R., Greene, J.A., & Moos, D.C. (2007). The effect of a human agent's external regulation upon college students' hypermedia learning. *Metacognition and Learning*, 2, 67-87.
- Bandura, A. (1977). *Social learning theory*. Oxford, England: Prentice-Hall.
- Bannert, M., & Mengelkamp, C. (2008). Assessment of metacognitive skills by means of instruction to think aloud and reflect when prompted. Does the verbalization method affect learning? *Metacognition and Learning*, 3, 39-58.
- Barnett, J.E. (2000). Self-regulated reading and test preparation among college students. *Journal of College Reading and Learning*, 31, 42-53.
- Berger, R., & Reid, S. (1989). Differences that make a difference: Comparisons of meta-componential functioning and knowledge base among groups of high and low IQ learning disabled, mildly mentally retarded, and normal achieving subjects. *Journal of Learning Disabilities*, 22, 422-429.
- Berk, L. (2006). *Child development*, (7th ed.). Boston: Allyn and Bacon.
- Blöte, A.W., Otterloo, S.G., Van Stevenson, C.E., & Veenman, M.V.J. (2004). Discovery and maintenance of the many-to-one counting strategy in 4-year-olds: A microgenetic study. *British Journal of Developmental Psychology*, 22, 83-102.
- Borkowski, J.G., & Peck, V.A. (1986). Causes and consequences of metamemory in gifted children. In R.J. Sternberg, & J.E. Davidson (Eds.), *Knowing, learning, and instruction. Essays in honor of Robert Glaser* (pp. 393-451). Hillsdale, NJ: Erlbaum.
- Boulware-Gooden, R., Carreker, S., Thornhill, A., & Joshi, R.M. (2007). Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third-grade students. *Reading Teacher*, 61, 70-77.
- Bowen, S., Shore, B. M., & Cartwright, G.F. (1992). Do gifted children use computers differently? A view from "The Factory". *Gifted Educational International*, 8, 151-154.
- Brody, E.B. (1992). *Intelligence. Nature, determinants, and consequences*, (2nd ed.). New York: Academic Press.
- Brown, A.L. (1978). Knowing when, where, and how to remember: A problem of metacognition. In R. Glaser (Ed.), *Advances in Instructional Psychology*, vol. 1 (pp. 77-165). Hillsdale, NJ: Erlbaum.
- Brown, A.L. (1980). Metacognitive development and reading. In R.J. Spiro, B. Bruce, & W.F. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 453-479). Hillsdale, NJ: Erlbaum.

-
- Brown, A.L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F.E. Weinert, & R.H. Kluwe (Eds.), *Metacognition, Motivation, and Understanding* (pp. 65-116). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Brown, A.L., & DeLoache, J.S. (1978). Skills, plans, and self-regulation. In R.S. Siegel (Ed.), *Children's thinking: What develops?* (pp. 3-35). Hillsdale, NJ: Erlbaum.
- Brown, A.L., Brandsford, J.D., Ferrara, R.A., & Campione, J.C. (1983). Learning, remembering, and understanding. In J.H. Flavell, & E.M. Markman (Eds.), *Handbook of child psychology* (4th ed.). *Cognitive development, Vol. 3*, (pp. 515-529). New York: Wiley.
- Bullock, M., & Schneider, W. (2009). Introduction and overview: Goals and structure of LOGIC. In W. Schneider, & M. Bullock (Eds.), *Human development from early childhood to early adulthood* (pp. 1-6). New York: Psychology Press.
- Buskop, H., Dalhuisen, L., & Van Der Geest, R. (1998). *Sprekend verleden, deel 2*. Baarn: NijghVersluys.
- Campione, J.C. (1987). Metacognitive components of instructional research with problem learners. In F.E. Weinert, & R.H. Kluwe (Eds.), *Metacognition, Motivation, and Understanding* (pp. 117-140). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Campione, J.C., Brown, A.L., & Ferrara, R.A. (1982). Mental retardation and intelligence. In R.J. Sternberg (Ed.), *Handbook of human intelligence* (pp. 392-490). Cambridge: Cambridge University Press.
- Cardelle-Elawar, M. (1995). Effects of metacognitive instruction on low achievers in mathematics problems. *Teacher and Teacher Education*, 11, 81-95.
- Carr, M., & Jessup, D.L. (1995). Cognitive and metacognitive predictors of arithmetics strategy use. *Learning and Individual Differences*, 7, 235-247.
- Carroll, J.B. (1993). *Human cognitive abilities. A survey of factor-analytic studies*. Cambridge: Cambridge University Press.
- Casey, B.J., Getz, S., & Galvan, A. (2008). The adolescent brain. *Developmental Review*, 28, 62-77.
- Casey, B.J., Tottenham, N., Liston, C., & Durston, S. (2005). Imaging the developing brain: What have we learned about cognitive development? *Trends in Cognitive Science*, 9, 104-110.
- Cheng, P. (1993). Metacognition and giftedness: The state of the relationship. *Gifted Child Quarterly*, 37, 105-112.
- Chinnappan, M., & Lawson, M.J. (1996). The effects of training in the use of executive strategies in geometry problem solving. *Learning and Instruction*, 6, 1-17.
- Christoph, N.L.H. (2006). *The role of metacognitive skills in learning to solve problems*. Wageningen: Prinsen & Looijen.
- Cromley, J.G., & Azevedo, R. (2006). Self-report of reading comprehension strategies: What are we measuring? *Metacognition and Learning*, 1, 229-247.
- Crone, E.A., Wendelken, C., Donohue, S., Van Leijenhorst, L., & Bunge, S.A. (2006). Neuro-cognitive development of the ability to manipulate information in working memory. *Proceedings of the National Academy of Sciences of the United States of America*, 103, 9315-9320.
- De Corte, E., & Verschaffel, L. (1980). Een exploratief onderwijsexperiment met aanvankelijke rekenopgaven bij 6-à 8-jarige kinderen [An exploratory experiment with simple math problems for 6-8 year children]. *Pedagogische Studiën*, 57, 433-448.

- De Jong, F.P.C.M. (1992). *Zelfstandig leren. Regulatie van het leerproces en leren reguleren: een procesbenadering*. Tilburg: Katholieke Universiteit.
- Demitriou, A., & Efklides, A. (1990). The objective and subjective structure of problem-solving abilities: Metacognitive awareness from early adolescence to middle age. In H. Mandl, E. de Corte, S.N. Bennett, & H.F. Friedrich (Eds.), *Learning and instruction in an international context: Volume 2.1. Social and cognitive aspects of learning and instruction* (pp. 161-179). Oxford: Pergamon Press.
- Desoete, A. (2006). Are mathematical learning disabilities a special kind of metacognitive disabilities? In A. Desoete, & M.V.J. Veenman (Eds.), *Metacognition in Mathematics Education* (pp. 135-156). New York: Nova Science Publishers.
- Desoete, A. & Veenman, M.V.J. (2006). Metacognition in mathematics: Critical issues on nature, theory, assessment and treatment. In A. Desoete, & M.V.J. Veenman (Eds.), *Metacognition in Mathematics Education* (pp. 1-10). New York: Nova Science Publishers.
- De Vocht, A. (2009). *Basishandboek SPSS 17*. Utrecht: Bijleveld Press.
- Dignath, C., & Büttner, G. (2008). Components of fostering self-regulated learning among students. A meta-analysis on intervention studies at primary and secondary school level. *Metacognition and Learning*, 3, 231-264.
- Dinsmore, D.L., Alexander, P.A., & Loughlin, S.M. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review*, 20, 391-409.
- Elshout, J.J. (1983). Is measuring intelligence still useful? In S.B. Anderson, & J.S. Helmick (Eds.), *On educational testing* (pp. 45-56). San Francisco: Jossey-Bass.
- Elshout, J.J. (1987). Problem solving and education. In E. De Corte, H. Lodewijks, R. Parmentier, & P. Span (Eds.), *Learning and instruction* (pp. 259-273). Oxford: Pergamon Books, Leuven: University Press.
- Elshout, J.J., & Veenman, M.V.J. (1992). Relation between intellectual ability and working method as predictors of learning. *Journal of Educational Research*, 85, 134-143.
- Ericsson, K.A., & Simon, H.A. (1993). *Protocol analysis; verbal reports as data*. Cambridge: MIT Press.
- Ertmer, P.A., & Newby, T.J. (1996). The expert learner: Strategic, self-regulated, and reflective. *Instructional Science*, 24, 1-24.
- Flavell, J.H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231-235). Hillsdale, NJ: Erlbaum.
- Flavell, J.H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34, 906-911.
- Flavell, J.H. (1992). Perspectives on perspective taking. In H. Beilin, & P. Pufall (Eds.), *Piaget's theory: Prospects and possibilities* (pp. 107-141). Hillsdale, NJ: Erlbaum.
- Flavell, J.H., Friedrichs, A.G., & Hoyt, J.D. (1970). Developmental changes in memorization processes. *Cognitive Psychology*, 1, 324-340.
- Flavell, J.H., & Wellman, H. (1977). Metamemory. In R.V. Kail, & J. W. Hagen (Eds.), *Perspectives on the development of memory and cognition* (pp. 3-33). Hillsdale, NJ: Lawrence Erlbaum Associates.

-
- Focant, J., Grégoire, J., & Desoete, A. (2006). Goal-setting, planning and control strategies and arithmetical problem solving at grade 5. In A. Desoete, & M.V.J. Veenman (Eds.), *Metacognition in Mathematics Education* (pp. 51-71). New York: Nova Science Publishers.
- Fox, E., & Riconscente, M. (2008). Metacognition and self-regulation in James, Piaget, and Vygotsky. *Educational Psychology Review*, 20, 373-389.
- Gagné, E.D., Yekovich, C., & Yekovich, F.R. (1993). *The cognitive psychology of school learning*. New York: Harper Collins.
- Glaser, R., Schauble, L., Raghavan, K., & Zeitz, C. (1992). Scientific reasoning across different domains. In E. de Corte, M.C. Linn, H. Mandl, & L. Verschaffel (Eds.), *Computer-based learning environments and problem solving. NATO ASI series F, vol. 84* (pp. 345-371) Heidelberg: Springer Verlag.
- Gregory, R.J. (1996). *Psychological testing. History, principles, and applications*. Boston: Allyn and Bacon.
- Guilford, J.P. (1965). *Fundamental statistics in psychology and education*. New York: McGraw-Hill.
- Hadwin, A.F., Nesbit, J.C., Jamieson-Noel, D., Code, J., & Winne, P. (2007). Examining trace data to explore self-regulated learning. *Metacognition and Learning*, 2, 107-124.
- Hannah, C.L., & Shore, B.M. (1995). Metacognition and high intellectual ability: Insights from the study of learning-disabled gifted students. *Gifted Child Quarterly*, 39, 95-109.
- Hayduk, L.A. (1987). *Structural Equation Modelling with LISREL. Essentials and Advances*. London: John Hopkins.
- Houtveen, A.A.M., & Van de Grift, W.J.C.M. (2007). Effects of metacognitive strategy instruction and instruction time on reading comprehension. *School Effectiveness and School Improvement*, 18, 173-190.
- Humphreys, L.G. (1968). The fleeting nature of the prediction of college academic success. *Journal of Educational Psychology*, 59, 375-380.
- Humphreys, L.G. (1989). Intelligence: Three kinds of instability and their consequences for policy. In R. L. Linn (Ed.), *Intelligence* (pp. 193-216). Urbana: University of Illinois Press.
- Inhelder, B., & Piaget, J. (1958). *The growth of logical thinking from childhood to adolescence*. London: Routledge and Kegan.
- Keating, D.P. (2004). Cognitive and brain development. In R.M. Lerner, & L.D. Steinberg (Eds.), *Handbook of Adolescent Psychology* (pp. 45-84). New Jersey: Wiley.
- Kelemen, W.L., Frost, P.J., & Weaver, C.A., III (2000). Individual differences in metacognition: Evidence against a general metacognitive ability. *Memory and Cognition*, 28, 92-107.
- Kinnunen, R., & Vauras, M. (1995). Comprehension monitoring and the level of comprehension in high- and low-achieving primary school childrens' reading. *Learning and Instruction*, 5, 143-165.
- Kluwe, R.H., (1987). Executive decisions and regulation of problem solving behavior. In F.E. Weinert, & R.H. Kluwe (Eds.), *Metacognition, Motivation, and Understanding* (pp. 31-64). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Kramarski, B., & Mevarech, Z.R. (2003). Enhancing mathematical reasoning in the classroom: The effects of cooperative learning and metacognitive training. *American Educational Research Journal*, 40, 281-310.

- Kreutzer, M.A., Leonard, S.C., & Flavell, J.H. (1975). An interview study of children's knowledge about memory. *Monographs of the society for research in child development*, 40 (1, Serial No. 159), 1-60.
- Kuhn, D. (1999). Metacognitive development. In L. Balter, & C.S. Tamis-LeMonda (Eds.), *Child psychology. A handbook of contemporary issues* (pp. 259-286). Philadelphia: Psychology Press.
- Kuhn, D. (2000). Metacognitive development. *Current Directions in Psychological Science*, 9, 178-181.
- Kuhn, D., Garcia-Mila, M., Zohar, A., & Anderson, C. (1995). Strategies of knowledge acquisition. *Monographs of the society for research in child development*, 60(4), 1-27.
- Larkin, S. (2006). Collaborative group work and individual development of metacognition in early years. *Research in Science Education*, 36, 7-27.
- Lockl, K., & Schneider, W. (2006). Precursors of metamemory in young children: The role of theory of mind and metacognitive vocabulary. *Metacognition and Learning*, 1, 15-31.
- Maqsud, M. (1997). Effects of metacognitive skills and nonverbal ability on academic achievement of high school pupils. *Educational Psychology*, 17, 387-397.
- Markman, E., (1977). Realizing that you don't understand: A preliminary investigation. *Child Development*, 48, 986-992.
- Markman, E., (1979). Realizing that you don't understand: Elementary school children's awareness of inconsistencies. *Child Development*, 50, 643-655.
- Masui, C., & De Corte, E. (1999). Enhancing learning and problem solving skills: Orienting and self-judging, two powerful and trainable learning tools. *Learning and Instruction*, 9, 517-542.
- Meijer, J., Veenman, M.V.J., & Van Hout-Wolters, B.H.A.M. (2006). Metacognitive activities in text studying and problem solving: Development of a taxonomy. *Educational Research and Evaluation*, 3, 209-238.
- Mengelkamp, C., & Bannert, M. (2008). *Accuracy of monitoring: stability in the learning process and predictive validity on learning outcome*. Paper presented at the EARLI-SIGMetacognition 2008, Ioannina, Greece.
- Mevarech, Z., & Amrany, C. (2008). Immediate and delayed effects of meta-cognitive instruction on regulation of cognition and mathematics achievement. *Metacognition and Learning*, 3, 147-157.
- Mevarech, Z., & Fridkin, S. (2006). The effects of IMPROVE on mathematical knowledge, mathematical reasoning and metacognition. *Metacognition and Learning*, 1, 85-97.
- Mevarech, Z., & Kamarski, B. (1997). IMPROVE: A multidimensional method for teaching mathematics in heterogeneous classrooms. *American Educational Research Journal*, 34, 365-394.
- Minnaert, A., & Janssen, P.J. (1999). The additive effect of regulatory activities on top of intelligence in relation to academic performance in higher education. *Learning and Instruction*, 9, 77-91.
- Moynahan, E.D. (1978). The development of knowledge concerning the effect of categorization upon free recall. *Child Development*, 44, 238-246.
- Nickerson, R., Perkins, D., & Smith, E. (1985). *The teaching of thinking*. Hillsdale, NJ: Erlbaum.
- Nunnally, J.C. (1967). *Psychometric theory*. New York: McGraw-Hill.

-
- Pedhazur, E.J. (1982). *Multiple regression in behavioral research*. (2nd ed.) Mahwah, NJ: Erlbaum.
- Piaget, J. (1964/1968). *Six psychological studies*. New York: Random House (A. Tenzer, trans.; original work published in 1962).
- Pintrich, P.R., & De Groot, E.V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82, 33-40.
- Pressley, M. (1986). The relevance of the good strategy user model to the teaching of mathematics. *Educational Psychologist*, 21, 139-161.
- Pressley, M. (2000). Development of grounded theories of complex cognitive processing: Exhaustive within- and between-study analyses of think-aloud data. In G. Schraw, & J. C. Impara (Eds.), *Issues in the measurement of metacognition* (pp. 262-296). Lincoln, NE: Buros Institute of Mental Measurements.
- Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Pressley, M., & Gaskins, I. (2006). Metacognitive competent reading is constructively responsive reading: How can such reading be developed in students? *Metacognition and Learning*, 1, 99-113.
- Pressley, M., Yokoi, L., Van Meter, P., Van Etten, S., & Freebern, G. (1997). Some of the reasons why preparing for an exam is so hard: What can be done to make it easier? *Educational Psychology Review*, 9, 1-38.
- Prins, F.J. (2002). *Search & See. The roles of metacognitive skillfulness and intellectual ability during novice inductive learning in a complex computer-simulated environment*. Leiden: Universiteit van Leiden.
- Prins, F.J., Veenman, M.V.J., & Elshout, J.J. (2006). The impact of intellectual ability and metacognition on learning: New support for the threshold of problematicity theory. *Learning & Instruction*, 4, 374-387.
- Raaheim, K. (1988). Intelligence and task novelty. In R.J. Sternberg (Ed.), *Advances in the psychology of human intelligence* (pp. 73-97). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Resnick, L.B., & Glaser, R. (1976). Problem solving and intelligence. In L.B. Resnick (Ed.), *The nature of intelligence* (pp. 205-230). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Salomon, G., & Perkins, D.N. (1989). Rocky roads to transfer: Rethinking mechanisms of a neglected phenomenon. *Educational Psychologist*, 24, 113-142.
- Schneider, W. (1985). Developmental trends in the meta-memory memory behavior relationship: An integrative review. In D.L. Forrest-Pressley, G.E. Mac Kinnon, & T.G. Wallers (Eds.), *Metacognition, cognition and human performance*, vol. 1 (pp. 57-109). New York: Academic Press.
- Schneider, W., Knopf, M., & Sodian, B. (2009). Verbal memory development from early childhood to early adulthood. In W. Schneider, & M. Bullock (Eds.), *Human development from early childhood to early adulthood* (pp. 63-90). New York: Psychology Press.
- Schneider, W., Lockl, K., & Fernandez, O. (2005). Interrelationship among theory of mind, executive control, language development, and working memory in young children: A longitudinal analysis. In W. Schneider, R. Schumann-Hengsteler, & B. Sodian (Eds.), *Young children's cognitive development: Interrelationships among executive functioning, working memory, verbal ability, and theory of mind* (pp. 259-284). Mahwah, NJ: Lawrence Erlbaum Associates.

- Schneider, W., & Pressley, M. (1997). *Memory development between two and twenty*, (2nd ed.) Mahwah, NJ: Lawrence Erlbaum Associates.
- Schoenfeld, A.H. (1983). Beyond the purely cognitive. *Cognitive Science*, 7, 329-363.
- Schoenfeld, A.H. (1992). Learning to think mathematically: Problem solving, metacognition, and sense-making in mathematics. In D. Grouws, (Ed.), *Handbook for Research on Mathematics and Learning* (pp. 334-370). New York: MacMillan.
- Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science*, 26, 113-125.
- Schraw, G., & Dennison, R.S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19, 460-475.
- Schraw, G., Dunkle, M.E., Bendixen, L.D., & Roedel, T.D. (1995). Does a general monitoring skill exist? *Journal of Educational Psychology*, 87, 433-444.
- Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational Psychology Review*, 7, 351-371.
- Schraw, G., & Nietfeld, J. (1998). A further test of the general monitoring skill hypothesis. *Journal of Educational Psychology*, 90, 236-248.
- Shore, B.M., & Dover, A.C. (1987). Metacognition, intelligence and giftedness. *Gifted Child Quarterly*, 31, 37-39.
- Shore, B.M., & Lazar, L. (1996). IQ-related differences in time allocation during problem solving. *Psychological Reports*, 78, 848-849.
- Siegler, R.S. (1998). *Children's thinking*. Upper Saddle River: Prentice-Hall.
- Siegler, R.S., DeLoache, J.S., & Eisenberg, N. (2010). *How children develop* (3rd ed.). New York: Worth Publishers.
- Simons, P.R.J., (1996). Metacognition. In E. De Corte, & F. E. Weinert (Eds.), *International encyclopedia of developmental and instructional psychology* (pp. 436-441). Oxford: Pergamon.
- Slife, B.D., Weiss, J., & Bell, T. (1985). Separability of metacognition and cognition: Problem solving in learning disabled and regular students. *Journal of Educational Psychology*, 77, 437-445.
- Snow, R.E. (1989). Aptitude-treatment as a framework for research on individual differences in learning. In P.L. Ackerman, R.J. Sterberg, & R. Glaser (Eds.), *Learning and individual differences* (pp. 13-59). New York: Freeman.
- Snow, R.E., & Lohman, D.F. (1984). Toward a theory of cognitive aptitude for learning from instruction. *Journal of Educational Psychology*, 76, 347-376.
- Souvignier, E., & Mokhesgerami, J. (2006). Using self-regulation as a framework for implementing strategy instruction to foster reading comprehension. *Learning and Instruction*, 16, 57-71.
- Span, P., & Overtoom-Corsmit, R. (1986). Information processing by intellectually gifted pupils solving mathematical problems. *Educational Problems in Mathematics*, 17, 273-295.
- Spear, L.P. (2000). The adolescent brain and age-related behavior manifestations. *Neuroscience and Biobehavioral Reviews*, 24, 417-463.
- Stankov, L. (2000). Complexity, metacognition, and fluid intelligence. *Intelligence*, 28, 121-143.
- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences*, 9, 69-74.

-
- Sternberg, R.J. (1990). *Metaphors of the mind: Conceptions of the nature of intelligence*. Cambridge: Cambridge University Press.
- Sperling, R.A., Howard, B.C., Miller, L.A., & Murphy, C. (2002). Measures of children's knowledge and regulation of cognition. *Contemporary Educational Psychology*, 27, 51–79.
- Swanson, H.L., Christie, L., & Rubadeau, R.J. (1993). The relationship between metacognition and analogical reasoning in mentally retarded, learning disabled, average, and gifted children. *Learning Disabilities Research*, 8, 70-81.
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using Multivariate Statistics*. Boston: Allyn and Bacon.
- Toga, A.W., Thompson, P.M., & Sowell, E.R. (2006). Mapping brain maturation. *Trends in Neurosciences*, 29, 148-159.
- Van Boxtel, C.A.M., & Schrover, W. (1998). *MeMo: Geschiedenis voor de basisvorming, deel 2, Mavo/Havo/Vwo*. Den Bosch: Malmberg.
- Van Hout-Wolters, B.H.A.M. (1986). *Markeren van kerngedeelten in studieteksten* [Cueing of key phrases in instructional texts]. Lisse: Swets & Zeitlinger.
- Van Hout-Wolters, B.H.A.M. (2000). Assessing active self-directed learning. In R. Simons, J. van der Linden, & T. Duffy (Eds.), *New Learning* (pp. 83-101). Dordrecht: Kluwer.
- Van der Heijden, M.K. (1989). Veranderingsdiagnostiek bij rekenen. *Tijdschrift voor Onderwijsresearch*, 22, 123-144.
- Van der Stel, M., & Veenman, M.V.J. (2008). Relation between intellectual ability and metacognitive skillfulness as predictors of learning performance of young students performing tasks in different domains. *Learning and Individual Differences*, 18, 128-134.
- Van der Stel, M., & Veenman, M.V.J. (2010). Development of metacognitive skillfulness: A longitudinal study. *Learning and Individual Differences*, 20, 220-224.
- Van der Stel, M., Veenman, M.V.J., Deelen, K., & Haenen, J. (2010). Increasing role of metacognitive skills in math: A cross-sectional study from a developmental perspective. *ZDM International Journal on Mathematics Education*, 42, 219-229.
- Van Dijk, H., & Tellegen, P.J. (1994). *GIVO. Groninger Intelligentietest Voortgezet Onderwijs*. Lisse: Swets & Zeitlinger.
- Van Luit, J.E.H., & Naglieri, J.A. (1999). Effectiveness of the MASTER program for teaching special children multiplication and division. *Journal of Learning Disabilities*, 32, 98-107.
- Veenman, M.V.J. (1993). *Intellectual ability and metacognitive skill: Determinants of discovery learning in computerized environments*. Dissertation. Amsterdam: Universiteit van Amsterdam.
- Veenman, M.V.J., (1998). Kennis en vaardigheden: Soorten kennis en vaardigheden die relevant zijn voor reken-wiskunde taken [Knowledge and skills relevant to math tasks]. In A. Andeweg, J.E.H. van Luit, M.V.J. Veenman, & P.C.M. Vendel (Red.), *Hulp bij leerproblemen: Rekenen-wiskunde* (pp. G0050.1-13). Alphen a/d Rijn: Samson H.D. Tjeenk Willink.
- Veenman, M.V.J., (2005). The assessment of metacognitive skills: What can be learned from multi-method designs? In C. Artelt, & B. Moschner (Eds.), *Lernstrategien und Metakognition: Implikationen für Forschung und Praxis* (pp. 75-97). Berlin: Waxmann.
- Veenman, M.V.J. (2006). The role of intellectual and metacognitive skills in math problem solving. In A. Desoete, & M.V.J. Veenman (Eds.), *Metacognition in Mathematics Education* (pp. 35-50). New York: Nova Science Publishers.

- Veenman, M.V.J. (2008). Giftedness: Predicting the speed of expertise acquisition by intellectual ability and metacognitive skilfulness of novices. In M.F. Shaughnessy, M.V.J. Veenman, & C. Kleyen-Kennedy (Eds.), *Meta-cognition: A recent review of research, theory, and perspectives* (pp. 207-220). Hauppauge: Nova Science Publishers.
- Veenman, M.V.J., (2011). Learning to self-monitor and self-regulate. In R. Mayer, & P. Alexander (Eds.), *Handbook of research on learning and instruction*. (pp.197-218). New York: Routledge.
- Veenman, M.V.J. (in press). Assessing metacognitive skills in computerized learning environments. In R. Azevedo, & V. Aleven (Eds.), *International Handbook of Metacognition and Learning Technologies*. New York/Berlin: Springer.
- Veenman, M.V.J., & Beishuizen, J.J. (2004). Intellectual and metacognitive skills of novices while studying texts under conditions of text difficulty and time constraint. *Learning and Instruction, 14*, 621-640.
- Veenman, M.V.J., & Elshout, J.J. (1999). Changes in the relationship between cognitive and metacognitive skills during the acquisition of expertise. *European Journal of Psychology and Education, 14*, 509-523.
- Veenman, M.V.J., Elshout, J.J., & Busato, V.V. (1994). Metacognitive mediation in learning with computer-based simulations. *Computers in Human Behavior, 10*, 93-106.
- Veenman, M.V.J., Elshout, J.J., & Groen, M.G.M. (1993). Thinking aloud: Does it affect regulatory processes in learning? *Tijdschrift voor Onderwijsresearch, 18*, 322-330.
- Veenman, M.V.J., Elshout, J.J., & Meijer, J. (1997). The generality vs. domain-specificity of metacognitive skills in novice learning across domains. *Learning and Instruction, 7*, 187-209.
- Veenman, M.V.J., Kerseboom, L., & Imthorn, C. (2000). Test anxiety and metacognitive skillfulness: Availability versus production deficiencies. *Anxiety, Stress and Coping, 13*, 391-412.
- Veenman, M.V.J., Kok, R., & Blöte, A.W. (2005). The relation between intellectual and metacognitive skills at the onset of metacognitive skill development. *Instructional Science, 33*, 193-211.
- Veenman, M.V.J., Kok, R., & Kuilenburg, J. (2001). Intelligence and metacognitive skillfulness in secondary education. In F. Oser, & U. Baets (Eds.), *9th European Conference on Learning and Instruction, Abstract Volume* (pp. 166). Aachen: Mainz.
- Veenman, M.V.J., Prins, F.J., & Elshout, J.J. (2002). Initial learning in a complex computer simulated environment: The role of metacognitive skills and intellectual ability. *Computers in Human Behavior, 18*, 327-342.
- Veenman, M.V.J., & Spaans, M. A. (2005). Relation between intellectual and metacognitive skills: Age and task differences. *Learning and Individual Differences, 15*, 159-176.
- Veenman, M.V.J., Van Hout-Wolters, B.H.A.M., & Afflerbach, P. (2006). Metacognition and learning: Conceptual and methodological considerations. *Metacognition and Learning, 1*, 3-14.
- Veenman, M.V.J., & Verheij, J. (2003). Technical students' metacognitive skills: Relating general vs. specific metacognitive skills to study success. *Learning and Individual differences, 13*, 259-272.
- Veenman, M.V.J., Wilhelm, P., & Beishuizen, J.J. (2004). The relation between intellectual and metacognitive skills from a developmental perspective. *Learning and Instruction, 14*, 89-109.

-
- Vuijk, R.A.J., Reichard, L.A., Rozemond, S., Dijkhuis, J.H., Admiraal, C.J., Aalmoes, H., Vaarwerk, te, G.J., Verbeek, J.A., De Jong, G., Brokamp, N.J.J.M., Houwing, H.J., De Vroome, R., & Kuis, J.D. (2003). *Getal en Ruimte [Number and Space]*. Houten: EPN.
- Vygotsky, L. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Waeytens, K., & Vandenberghe, R. (2002). 'Learn to Learn': Teachers' conceptions of their supporting role. *Learning and Instruction*, 12, 305-322.
- Wang, M.C., Haertel, G.D., & Walberg, H.J. (1990). What influences learning? A content analysis of review literature. *Journal of Educational Research*, 84, 30-43.
- Wellman, H.M. (1990). *Children's theories of mind*. Cambridge, MA: MIT Press.
- Whitebread, D., Coltman, P., Pino Pasternak, D., Sangster, C., Grau, V., Bingham, S., Almeqdad, Q., & Demetriou, D. (2009). The development of two observational tools for assessing metacognition and self-regulated learning in young children. *Metacognition and Learning*, 4, 63-85.
- Winne, P.H. (1996). A metacognitive view of individual differences in self-regulated learning. *Learning and Individual Differences*, 8, 327-353.
- Winne, P.H. (2010). Improving measurements of self-regulated learning. *Educational Psychologist*, 45, 267-276.
- Zimmerman, B.J. (1986). Becoming a self-regulated learner: Which are the key subprocesses? *Contemporary Educational Psychology*, 11, 307-313.
- Zimmerman, B.J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82, 51-59.
- Zohar, A. (1999). Teachers metacognitive knowledge and the instruction of higher order thinking skills. *Teaching and Teacher Education*, 15, 413-429.
- Zohar, A., & Ben-David, A. (2009). Paving a clear path in a thick forest: A conceptual analysis of a metacognitive component. *Metacognition and Learning*, 4, 177-195.
- Zohar, A., Vaaknin, E., & Degani, A. (2001). Teachers' beliefs about low achieving students and higher order thinking. *Teaching and Teacher Education*, 17, 469-485.