

**Ludwigsburg-Luzerner Bibliographie zur
Alltagsvorstellungsforschung in den Geowissenschaften
(LLBG-Bibliographie)**

**Ludwigsburg-Lucerne Bibliography on Conceptual Change
Research in the Geosciences
(LLBG-Bibliography)**

Sibylle Reinfried & Stephan Schuler

Weitere Informationen sowie die Schlagwortsystematik finden Sie auf unserer Webseite /
You will get more information and a list of keywords on our website:

www.ph-ludwigsburg.de/llbg

Stand / Volume 08.03.2011

548 References

- Abd-El-Khalick, F., Lederman, N. G. (2000). The influence of history of science courses on students' views of nature of science. *Journal of Research in Science Teaching*, 37(10), 1057-1095. // g3,g7,CSC.
- Abd-El-Khalick, F. (2001). Developing deeper understandings of nature of science: The impact of a philosophy of science course on preservice science teachers' views. *Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 1-5.* // g8,CSC.
- Abd-El-Khalick, F., & Akerson, V. (2007). On the role and use of "theory" in science education research. *Science Education*, 91(1), 187-194. // g1, CSC, CC.
- Abd-El-Khalick, F., Waters, M., & Le, A.-P. (2008). Representations of nature of science in high school chemistry textbooks over the past four decades. *Journal of Research in Science Teaching*, 45(7), 835-855. // g1, TXT, C, CSC.
- Abell, S., Martini, M., George, M. (2001). "That's what scientists have to do": Preservice elementary teachers' conceptions of the nature of science during a moon investigation. *International Journal of Science Education*, 23(11), 1095-1109. // g7,ES, CSC, ASTRO, MOON.
- Abell, S. K. (2007). Research on science teacher knowledge. In S. K. Abell & N. G. Lederman (Eds.), *Research on science education* (pp. 1105-1149): Lawrence Erlbaum Associates. // g1, PCK, g8, P, ES, ASTRO, SEASON, MOON, B, g9.
- Adams, J. D., Tran, L. U., Gupta, P., & Creedon-O'Hurley, H. (2008). Sociocultural frameworks of conceptual change: implications for teaching and learning in museums. *Cultural Studies of Science Education*, 3, 435-449. // g1, CC, SCON.
- Adeniyi, E. O. (1985). Misconceptions of selected ecological concepts held by some Nigerian students. *Journal of Biological Education*, 19(4), 311-316. // g6, B, ES, EARTHSYS, GEOECO.
- Aeschbacher, U., Caló, C., Wehrli, R. (2001). "Die Ursache des Treibhauseffekts ist ein Loch in der Atmosphäre": Naives Denken wider besseres Wissen. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie*, 33(4), 230-241. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Akerson, V. L., Buzzelli, C. A., & Donnelly, L. A. (2008). Early childhood teachers' view of nature of science: The influence of intellectual levels, cultural values, explicit reflective teaching. *Journal of Research in Science Teaching*, 45(6), 748-770. // g8, CSC, AFF.

- Albanese, A., Danhoni Neves, M., Vicentini, M. (1995). Models in science and in education: A critical review of research on students' ideas about the earth and its place in the universe. In F. Finley, Allchin, D., Rhees, D., Fifield, S. (Ed.), *Proceedings. Third Proceedings. Third international history, philosophy, and scienceteaching conference* (pp. 1-12). Minneapolis: University of Minnesota. // g3, g6, P, AS, ES, ASTRO.
- Albe, V. (2008). When scientific knowledge, daily life experience, epistemological and social considerations intersect: students' argumentation in group discussions on a socio-scientific issue. *Research in Science Education*, 38(1), 67-90. // g7, STS, ARGUMENTATION.
- Andersson, B., Wallin, A. (2000). Students' understanding of the Greenhouse Effect, the social consequences of reducing CO₂ emissions and the problem of Ozone layer depletion. *Journal of Research in Science Teaching*, 37(10), 1096-1111. // g6, ES, STS, ATMOS, HUMINDATM, GREENHEF, OZON.
- Apedoe, X., S. (2008). Engaging students in inquiry: Tales from an undergraduate geology laboratory-based course. *Science Education*, 92(4), 631-663. // g7, ES, LITHOS, GEOL, METHODS, INQUIRY.
- Arabatzis, T., & Kindi, V. (2008). The problem of conceptual change in the philosophy and history of science. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 345-373). New York: Routledge. // g1, CC, CSC, g3.
- Arnold, P., Sarge, A., Worrall, L. (1995). Children's knowledge of the earth's shape and its gravitational field. *International Journal of Science Education*, 17(5), 635-641. // g6, P, AS, M, GRAVITY, ES, ASTRO, SHAPEEARTH.
- Assaraf, O. B.-Z., Orion, N. (2005). Development of system thinking skills in the context of earth system education. *Journal of Research in Science Teaching*, 42(5), 518-560. // g6, ES, GC, EARTHYSYS, SYSPROP.
- Atwood, R., Atwood, V. (1996). Preservice elementary teachers' conceptions of the causes of seasons. *Journal of Research in Science Teaching*, 33(5), 553-563. // g8, P, AS, ES, ASTRO, SEASON.
- Atwood, V., Atwood, R. (1995). Preservice elementary teachers' conceptions of what causes night and day. *School Science and Mathematics*, 95(6), 290-294. // g8, P, AS, ES, ASTRO, ROTEARTH.
- Aufschnaiter, S. v., Fischer, H. E., Schwedes, H. (1992). Kinder konstruieren Welten. In S. J. Schmidt (Ed.), *Kognition und Gesellschaft* (pp. 380-424). Frankfurt: Suhrkamp Taschenbuch Wissenschaft. // g1, g7, P, E, WORLDVIEW.
- Ault, C. R. (1982). Time in geological explanations as perceived by elementary-school students. *Journal of geological education*, 30, 304-309. // g6, LITHOS, GEOLTIME.
- Ault, C. R. (1984). Everyday perspective and exceedingly unobvious meaning. *Journal of geological education*, 32, 89-91. // g6, ASTRO, MOON, LITHOS, FOSSILS, GEOL, ROCKS.
- Ault, C. R. (1985). Concept mapping as a study strategy in earth science. *Journal of College Science Teaching*, 15, 38-44. // g7, ES, OTHERS.
- Baalmann, W., von Ossietzky, C. (1998). Evolution im Unterricht - Schuelervorstellungen als Voraussetzung und Chance. In P. Gilbert, Mack, G., Mank, K.-J. (Ed.), *Heft 59: Bericht ueber die 11. Tagung der Fachleiter fuer Biologie an den Seminaren fuer Lehrerausbildung in der BRD* (pp. 85-92). Weilburg: Schriften des Deutschen Vereins zur Foerderung des mathematischen und naturwissenschaftlichen Unterrichts e.V. // g6, B, LITHOS, EVOL.
- Baisch, P. (2009). *Schuelervorstellungen zum Stoffkreislauf. Eine Interventionsstudie im Kontext einer Bildung fuer nachhaltige Entwicklung*. Hamburg: Kovac. // g6, g7, EARTHYSYS, CYCLE, PEDOS.
- Bakas, C., Mikropoulos, T. A. (2003). Design of virtual environments for the comprehension of planetary phenomena based on students' ideas. *International Journal of Science Education*, 25(8), 949-967. // g6, g7, P, AS, ASTRO, SEASON, ROTEARTH.
- Baldwin, H., & Opie, M. (1998). Child's Eye View of Cities. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography* (pp. 40-41). Sheffield: The Geographical Association. // g6, g7, HUMGEO.
- Bar, V. (1989). Children's views about the water cycle. *Science Education*, 73(4), 481-500. // g6, HYDROS, HYDCYC.
- Bar, V., Galili, I. (1994). Stages of children's views about evaporation. *International Journal of Science Education*, 16(2), 157-174. // g6, P, M, ATMOS, ELEMCLIM, HYDROS, HYDCYC.
- Bar, V., Zinn, B. (2001). Using popper's method of reduction in teaching about the dark areas of the moon. In R. Pinto, Surinach, S. (Ed.), *Physics Teacher Education Beyond 2000* (pp. 305-308). Paris: Elsevier. // g7, P, AS, ASTRO, MOON.

- Barab, S. A., Hay, K. E., Barnett, M., Keating, T. (2000). Virtual solar project: Building understanding through model building. *Journal of Research in Science Teaching*, 37(7), 719-756. // g1, SCON, g7, P, AS, MMEDIA, MODEL, THOUGHT EXPERIMENTS, ATMOS, ELEMCLIM.
- Barab, S. A., Hay, K. E., Squire, K., Barnett, M., Schmidt, R., Karrigan, K., Yamagata-Lynch, L., Johnson, C. (2000). Virtual solar system project: Learning through a technology-rich, inquiry-based, participatory learning environment. *Journal of Science Education and Technology*, 9(1), 7-25. // g7, P, AS, MODEL, MMEDIA, ASTRO, MOON.
- Barnett, M., Morran, J. (2002). Addressing children's alternative frameworks of the moon's phases and eclipses. *International Journal of Science Education*, 24(8), 859-879. // g7, P, AS, ASTRO, MOON.
- Barrow, L. H. (1993). Earthquakes haven't shaken college student's cognitive structures. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, LITHOS, TECT, EARTHQUA.
- Baser, M. (2006). Fostering conceptual change by cognitive conflict based instruction on students' understanding of heat and temperature concepts. *Eurasia Journal of Mathematics, Science and Technology Education*, 2(2), 96 -113. // g7, P, T, GEN.
- Baxter, J. (1989). Children's understanding of familiar astronomical events. *International Journal of Science Education*, 11, 502-513. // g6, g7, P, AS, ASTRO, SEASON, ROTHEARTH.
- Baxter, J. (1991). A constructivist approach to astronomy in the national curriculum. *Physics Education*, 26, 38-45. // g6, g7, P, AS, CON, ASTRO, SEASON, SHAPEEARTH.
- Baxter, J. (1995). Children's understanding of astronomy and the earth sciences. In S. M. Glynn, Duit, R. (Ed.), *Learning science in the schools: Research reforming practice* (pp. 155-177). Mahwah, New Jersey: Lawrence Erlbaum Associates. // g6, g7, CSC, P, AS, ASTRO, SEASON, LITHOS.
- Beilfuss, M. (2004). *Exploring conceptual understandings of groundwater through student's interviews and drawings*. Paper presented at the NARST Conference 2004, VANCOUVER. // g6, ES, HYDROS, GROUNDW.
- Belknap, J. (2003). *High School Student's Preconceptions and Conceptions about Tropical Storm Allison*. Research Report. Texas A&M University, Department of Geography. Retrieved from <http://www.eric.ed.gov> // g6, ATMOS, STORM.
- Bell, R., & Trundle, K. C. (2008). The use of computer simulation to promote scientific conceptions of moon phases. *Journal of Research in Science Teaching*, 45(3), 346-372. // g7, P, AS, MMEDIA, ES, ASTRO, MOON.
- Bell, T. (2007). Komplexe Systeme und Selbstregulation: eine Modellsystemsequenz für fächerübergreifendes Lernen. *Physik und Didaktik in Schule und Hochschule*, 2(6), 43-58. // g7, P, NONLIN, LPRO.
- Bell, T. (2007). Konzeptentwicklung in einer Lernprozessstudie im Bereich "komplexe Systeme und Selbstregulation". *Physik und Didaktik in Schule und Hochschule*, 2(6), 59-71. // g7, P, NONLIN, LPRO.
- Bellou, I., Stavridou, H., Katsikis, A. (2001). Pupils' ideas about erosion as a basis for the design of an educational software. In D. Psillos, Kariotoglou, P., Tselves, V., Bisdikian, G., Fassoulopoulos, G., Hatzikraniotis, E., Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 1* (pp. 294-296). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, ES, LITHOS, GEOMOR, EROSED.
- Ben-zvi-Assarf, O., & Orion, N. (2005). A Study of Junior High Students' Perceptions of the Water Cycle. *Journal of Geoscience Education*, 53(4), 366-373. // g6, HYDROS, HYDCYC.
- Berk, R. A., & Schulman, D. (1995). Public Perceptions of Global Warming. *Climatic Change*, 29(1), 1-33. // g1, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Bezzi, A. (1989). Geology and Society: a survey on pupils' ideas as an instance of a broader prospect for educational research in Earth Science. *Paper presented at the 28th International Geological Congress held in Washington D. C.* // g6, GEN, LITHOS, GEOL, WORLDVIEW.
- Bezzi, A. (1996). Geology: A science, a teacher, or a course?: How students construct the image of geological disciplines and that of their teachers. In G. Welford, Osborne, J., Scott, P. (Ed.), *Research in Science Education in Europe* (pp. 312-324). London: The Falmer Press. // g5, g6, CTL, LITHOS, GEOL.
- Bezzi, A. (1996). Use of repertory grids in facilitating knowledge construction and reconstruction in geology. *Journal of Research in Science Teaching*, 33(2), 179-204. // g5, g7, LITHOS, GEOL.

- Bezzi, A. (1999). What is this thing called geoscience? Epistemological dimensions elicited with the repertory grid and their implications for scientific literacy. *Science Education*, 83(6), 675-700. // g5, g6, g8, CSC, CON, LITHOS, GEOL, WORLDVIEW.
- Black, A. A. J. (2005). Spatial Ability and Earth Science Conceptual Understanding. *Journal of Geoscience Education*, 53(4), 402-414. // g6, CSC, PERCSPACE.
- Blake, A. (2001). Developing Young Children's Understanding: An Example from Earth Science. *Evaluation and research in education*, 15(3), 154-163. // g6, LITHOS, GEOL, ROCKS.
- Blake, A. (2005). Do young children's ideas about the Earth's structure and processes reveal underlying patterns of descriptive and causal understanding in earth science? *Research in Science & Technological Education*, 23(1), 59-74. // g6, LITHOS, EARTHINT, TECT, VOLC, OROGEN, GEOMOR, WEATHERING.
- Bloomfield, P. (1998). Raising Awareness of Local Agenda 21. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography* (pp. 34-35). Sheffield: The Geographical Association. // g6, HUMGEO.
- Boldt, K., & Gelhar, M. (2010). Duisburg. Von der Stadt Montan zum Drehkreuz des Westens. *Geographische Rundschau*, 62(2), 26-33. // GEODOK Ruhrgebiet Stadtgeschichte Stadtentwicklung.
- Bonekamp, M. (2006) Boden als Puffer. Fachliche Vorstellungen und Schülervorstellungen zu einer zentralen Bodenfunktion. *Oldenburger Vordrucke: Vol. 554*. Oldenburg: Didaktisches Zentrum. // g6, PEDOS.
- Bord, R. J., Fisher, A., & O'Connor, R. E. (1998). Public perceptions of global warming: United States and international perspectives. *Climate Research*, 11, 75-84. // g1, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Boulter, C., Prain, V., Armitage, M. (1998). 'What's going to happen in the eclipse tonight?': Rethinking perspectives on primary school science. *International Journal of Science Education*, 20(4), 487-500. // g5, g6, g7, P, AS, ASTRO, ROTHEARTH.
- Bowen, M., & Roth, W.-M. (2007). The practice of field ecology: Insights for science education. *Research in Science Education*, 37(2), 171-187. // g1, B, ECOLOGY.
- Boyes, E., Stanisstreet, M. (1993). The 'Greenhouse Effect': children's perceptions of causes, consequences and cures. *International Journal of Science Education*, 15(5), 531-552. // g6, STS, ATMOS, HUMINDATM, GREENHEF.
- Boyes, E., Stanisstreet, M., Papantoniou, V. S. (1999). The ideas of Greek high school students' about "ozone layer". *Science Education*, 83(6), 724-737. // g6, STS, ATMOS, HUMINDATM, OZON.
- Boyes, E., Chukran, D., & Stanisstreet, M. (1993). How Do High School Students Perceive Global Climatic Change: What Are Its Manifestations? What Are Its Origins? What Corrective Action Can Be Taken? *Journal of Science Education and Technology*, 2(4), 541-557. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Boyes, E., Myers, G., Skamp, K., Stanisstreet, M., & Yeung, S. (2007). Air Quality: A Comparison of Students' Conceptions and Attitudes across the Continents. *Compare: A Journal of Comparative Education*, 37(4), 425-445. // g6, ATMOS, HUMINDATM, AIRPOL.
- Boyes, E., & Stanisstreet, M. (1997). Children's models of understanding of two major global environmental issues (Ozone Layer and Greenhouse Effect). *Research in Science & Technological Education*, 15(1). // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON.
- Boyes, E., & Stanisstreet, M. (1998). High School Students' perceptions of how major global environmental effects might cause skin cancer. *Journal of Environmental Education*, 29(2). // g6, ATMOS, HUMINDATM, GREENHEF, OZON.
- Boyes, E., & Stanistreet, M. (1992). Students' perceptions of global warming. *International Journal of Environmental Studies*, 42, 287-300. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Boyes, E., & Stanistreet, M. (1997). The Environmental Impact of Cars: children's ideas and reasoning. *Environmental Education Research*, 3(3), 269-282. // g6, ATMOS, HUMINDATM, GREENHEF, OZON, AIRPOL.
- Boyes, E., Stanistreet, M., & Yongling, Z. (2008). Combating global warming: the ideas of high school students in the growing economy of South East China. *International Journal of Environmental Studies*, 65(2), 239-251. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, AIRPOL.

- Brewer, W. F. (2008). Naive theories of observational astronomy: Review, analysis, and theoretical implications. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 155-204). New York: Routledge. // g1, CC, g5, g6, g7, P, AS, ES, ASTRO.
- Broadstock, M. J. (1993). Children's understanding of earth systems phenomena in Taiwan. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, g7, P, AS, ASTRO, SEASON, ATMOS, WEATHER, HYDROS, RIVERS.
- Brody, M., Tomkiewicz, W., Graves, J. (2002). Park visitors' understandings, values and beliefs related to their experience at Midway Geyser Basin, Yellowstone National Park, USA. *International Journal of Science Education*, 24(11), 1119-1141. // g6, ES, INFORMAL, METHODS.
- Brody, M. J. (1990). Fourth, eighth and eleventh grade students' understanding of pollution. *Paper presented at the annual meeting of the National Association of Research in Science Teaching, Atlanta*. // g6, STS, ATMOS, HUMINDATM, AIRPOL.
- Bronwen, D., Stanistreet, M., & Boyes, E. (2004). How can we best reduce global warming? School student's ideas and misconceptions. *International Journal of Environmental Studies*, 61(2), 211-222. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Brown, M. E. (1992). An ecological perspective on research with computers in Science Education. *Research in Science Education*, 22, 63-71. // g1, CON, MMEDIA.
- Buck, P. (1985). "Astronomische" Methoden bei Begriffsbildungsuntersuchungen. In H. Mikelskis (Ed.), *Zur Didaktik der Physik und Chemie. Vortraege auf der Tagung fuer Physik/Chemie 1984* (pp. 254-256). Alsbach: Leuchtturm. // g5.
- Bulunuz, N. (2009). Understanding of Earth and Space Science Concepts: Strategies for Concept-Building in Elementary Teacher Preparation *School Science and Mathematics*, 109(5), 276-289. // g8, g9, ASTRO, SEASON, MOON, ATMOS, ELEMCLIM, LITHOS, GEOL, ROCKS, TECT, EARTHQUA, PEDOS.
- Byrne, T. (2001). Tilt, rock and roll. Understanding the day/night cycle. *Australian Science Teachers Journal*, 47(1), 12-20. // g6, P, AS, ASTRO, ROTEARTH.
- Caillot, M., Chartrain, J.-L. (1999). Conceptual change and student diversity: The case of volcanism at the elementary school. In M. Komorek, Behrendt, H., Dahncke, H., Duit, R., Graeber, W., Kross, A. (Ed.), *Research in Science Education - Past, Present, and Future Vol.2* (pp. 381-383). Kiel: IPN Kiel. // g7, LITHOS, TECT, VOLC.
- Caravita, S., Hallden, O. (1994). Re-framing the problem of conceptual change. *Learning and Instruction*, 4, 89-111. // g1, g6, B.
- Carter, L. (2004). Thinking differently about cultural diversity: Using postcolonial theory to (re)read science education. *Science Education*, 88(6), 819-836. // g1, OTHERS.
- Castano, C. (2008). Socio-scientific discussions as a way to improve the comprehension of science and the understanding of the interrelation between species and the environment. *Research in Science Education*, 38(5), 565-587. // g7, B, ECOLOGY, STS, CON, HUMGEO.
- Catling, S. (2001). English Primary Schoolchildren's Definitions of Geography. *International Research in Geographical and Environmental Education*, 10(4), 363-378. // g6, g7, CTL, OTHERS.
- Chambers, B. (1998). Children's Ideas about the Environment. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography* (pp. 30-31). Sheffield: The Geographical Association. // g6, ATMOS, HUMINDATM, GREENHEF.
- Chang, C.-Y. (2001). Comparing the impacts of a problem-based computer-assisted instruction and the direct-interactive teaching method on student science achievement. *Journal of Science Education and Technology*, 10(2), 147-153. // g7, ES, LPRO, MMEDIA, PROSOL.
- Chang, C.-Y., Weng, Y.-H. (2002). An exploratory study on students' problem-solving ability in earth science. *International Journal of Science Education*, 24(5), 441-452. // g6, ES, GC, PROSOL.
- Chang, C.-Y. (2003). Teaching earth sciences: should we implement teacher-directed or student-controlled CAI in the secondary classroom? *International Journal of Science Education*, 25(4), 427-438. // g7, ES, LPRO, MMEDIA.
- Chang, C.-Y., Tsai, C.-C. (2005). The interplay between different forms of CAI and students' preferences of learning environment in the secondary science class. *Science Education*, 89(5), 707-724. // g7, ES, MMEDIA, OTHERS.
- Chang, C.-Y., & Barufaldi, J. P. (1999). The use of a problem-solving-based instructional model in initiating change in students' achievement and alternative frameworks. *International Journal of Science Education*, 21(4), 373-388. // g1, AFR, CC, PROSOL.

- Chang, J.-Y. (1999). Teachers college students' conceptions about evaporation, condensation, and boiling. *Science Education*, 83(5), 511-526. // g6,P,T,CHSTATE, ATMOS, ELEMCLIM, HYDROS, HYDCYC.
- Chartrain, J.-L., Caillot, M. (2001). Conceptual change and student diversity: The case of volcanism at primary school. In H. Behrendt, Dahncke, H. , Duit, R. , Graeber, W. , Komorek, M. , Kross, A. (Ed.), *Research in Science Education - Past, Present, and Future* (pp. 265-270). Dordrecht, The Netherlands: Kluwer Academic Publishers. // g7, ES, LITHOS, TECT, VOLC.
- Chi, M. T. H. (2008). Three types of conceptual change: Belief revision, mental model transformation, and categorical shift. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 61-82). New York: Routledge. // g1, CC, COSC, MM.
- Chinn, C. A., & Brewer, W. F. (2001). Models of Data: A Theory of How People Evaluate Data. *Cognition and Instruction*, 19(3), 323-393. // g1, MN, LITHOS, GEOL.
- Christidou, I. (1995). An exploration of children's models and their use of cognitive strategies in regard to the greenhouse effect and the ozone layer depletion. In D. Psillos (Ed.), *European Research in Science Education II* (pp. 224-234). Thessaloniki: Art of Text S. A. // g6, STS, ATMOS, HUMINDATM, GREENHEF, OZON.
- Christidou, V., Koulaïdis, V. (1996). Children's models of the ozone layer and ozone depletion. *Research in Science Education*, 26(4), 421-436. // g6, STS, ATMOS, HUMINDATM, GREENHEF.
- Cin, M., & Yazici, H. (2002). The Influence of Direct Experience on Children's Ideas about the Formation of the Natural Scenery. *International Research in Geographical and Environmental Education*, 11(1), 5-14. // g6, HYDROS, RIVERS, LAKES, OCEANS, LAND.
- Clark, D. B., Slotta, J. D. (2000). Evaluating media-enhancement and source authority on the internet: The knowledge integration environment. *International Journal of Science Education*, 22(8), 859-872. // g7, ES, LITHOS, GEOL.
- Clark, D. B., Reynolds, S., Lemanowski, V., Stiles, T., Yasar, S., Protor, S., . . . Corkis, J. (2008). University students' conceptualization and interpretation of topographic maps. *International Journal of Science Education*, 30(3), 377-408. // g7, ES, CARTO.
- Clary, R., & Wandersee, J. (2007). A mixed analysis of the effects of an integrative geobiological study of petrified wood in introductory college geology classrooms. *Journal of Research in Science Teaching*, 44(8), 1011 -1035. // g7, ES, LITHOS, GEOLTIME, FOSSILS, EVOL.
- Cobern, W. (1990). Understanding the world as others do. *Newsletter (No. 13) of the SIG "Subject Matter Knowledge and Conceptual Change" of the American Educational Research Association*. // g1, WORLDVIEW.
- Cobern, W. (1995). Belief and knowledge: unnecessary conflict in the science classroom. *Proceedings. Third international history, philosophy, and scienceteaching conference*, 222-232. // g1, CON, WORLDVIEW.
- Cobern, W. (1995). Science education as an exercise in foreign affairs. *Science & Education*, 4(3), 287-302. // g1, CC, CON, WORLDVIEW.
- Cobern, W. (1996). Constructivism and non-western Science Education research. *International Journal of Science Education*, 18(3), 295-310. // g1, CON, WORLDVIEW.
- Cobern, W. (1996). Worldview theory and conceptual change in Science Education. *Science Education*, 80(5), 579-610. // g2, CC, WORLDVIEW.
- Cobern, W. (1998). *Socio-cultural perspectives on science education*. Dordrecht: Kluwer Academic Publishers. // g1, g4, CON, GEN, WORLDVIEW.
- Cobern, W. W. (1989). World view theory and science education research: Fundamental epistemological structure as a critical factor in science learning and attitude development. *National Association for Research in Science Teaching*, 1-55. // g1, WORLDVIEW.
- Cobern, W. W., Ellington, J. E. , Schores, D. M. (1990). A logico-structural, worldview analysis of the interrelationship between science interest, gender, and concept of nature. *National Association for Research in Science Teaching*, 1-9. // g1, WORLDVIEW.
- Cobern, W. W. (1991) World view theory and science education research. *Narst Monograph: Vol. 3*. Manhattan: National Association for Research in Science Teaching. // g1, g2, g5, CON, WORLDVIEW.
- Cobern, W. W. (1992). Science Education and the external perspective on science. In S. Hills (Ed.), *The history and philosophy of science in Science Education. Proceedings of the international conference on the history and philosophy of science and science teaching. Volume I* (pp. 175-209). Kingston, Ontario: The Faculty of Education, Queens University. // g1, g3, CC, WORLDVIEW.

- Coburn, W. W. (1993). College students' conceptualizations of nature: An interpretive world view analysis. *Journal of Research in Science Teaching*, 30(8), 935-951. // g6, GC, CSC, WORLDVIEW.
- Coburn, W. W., Aikenhead, G. S. (1998). Cultural aspects of learning science. In B. J. Fraser, Tobin, K. G. (Ed.), *International handbook of Science Education, Part 1* (pp. 39-52). Dordrecht, Netherlands: Kluwer Academic Press. // g1, SCON, WORLDVIEW.
- Coburn, W. W., Loving, C.C. (2001). Defining "science" in a multicultural world: Implications for science education. *Science Education*, 85(1), 50-67. // g1, CSC, WORLDVIEW.
- Cohen, M. R., Kagan, M. H. . (1979). Where does the old moon go ? *The Science Teacher*, 46(8), 22-23. // g6, ASTRO, MOON.
- Comins, N. F. (1993). Sources of misconceptions in astronomy. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g3, g6, P, AS, ASTRO.
- Cordero, E. (2000). Misconceptions in Australian students' understanding of Ozone depletion. In R. T. Cross, Fensham, P. T. (Ed.), *Science and the Citizen* (pp. 85-97). Melbourne: Arena Publications. // g6, STS, ATMOS, HUMINDATM, OZON.
- Cox-Petersen, A. M., Marsh, D. D., Kisiel, J., Melber, L. M. (2003). Investigation of guided school tours, student learning, and science reform recommendations at a museum of natural history. *Journal of Research in Science Teaching*, 40(2), 200-218. // g7, INFORMAL, METHODS.
- Dahl, J., Anderson, S. W., & Libarkin, J. C. (2005). Digging into Earth Science: Alternative conceptions held by K-12 teachers. *Journal of Geoscience Education*, 6(2). // g8, LITHOS, GEOLTIME, TECT, VOLC.
- Dahlberg, S. (2001). Using Climate Change as a teaching tool. *Canadian Journal of Environmental Education*, 6(Spring), 9-17. // g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Dal, B. (2006). The Origin and Extent of Student's Understandings: The Effect of Various Kinds of Factors in Conceptual Understanding in Volcanism. *Electronic Journal of Science Education*, 11(1), 38-59. // g6, g7, g8, LITHOS, TECT, VOLC.
- Dal, B. (2007). How do we help students build beliefs that allow them to avoid critical learning barriers and develop a deep understanding of geology? *Eurasia Journal of Mathematics, Science and Technology Education*, 3(4), 251-269. // g6, ES, LITHOS, GEOL.
- de Vecchi, G. (1986). Comment on voit l'espace quand on est un enfant qui a les pieds sur terre. In A. Giordan, Martinand, J. L. (Ed.), *Education scientifique et vie quotidienne* (pp. 421-425). Paris: Instaprint. // g6, P, AS, ASTRO.
- Delgado, F. A., Rovira, P. G. (2001). Designing activities to teach "fossils". A social interaction. In D. Psillos, Kariotoglou, P. , Tselfes, V. , Bisdikian, G. , Fassoulopoulos, G. , Hatzikraniotis, E. , Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 1* (pp. 276-278). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g8, CTL, FOSSIL, LITHOS, FOSSILS.
- Demastes, S., Good, R. , Peebles, P. (1995). Students' conceptual ecologies and the process of conceptual change in evolution. *Science Education*, 79(6), 637-666. // g6, B, EARTHSYS, LITHOS, EVOL.
- Devine-Wright, P., Devine-Wright, H., & Flemming, P. (2004). Situational influences upon children's beliefs about global warming and energy. *Environmental Education Research*, 10(4), 493-506. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Diakidoy, I.-A., Kendeou, P. (2001). Facilitating conceptual change in astronomy: a comparison of the effectiveness of two instructional approaches. *Learning and Instruction*, 11(1), 1-20. // g7, CC, P, AS, ASTRO, ROTHEARTH.
- Dibar Ure, M. C., Colinviaux, D. (1989). Developing adults' views on the phenomenon of change of physical state in water. *International Journal of Science Education*, 11(2), 153-160. // g2, g6, P, M.
- Dickerson, D., Callahan, T. J., Van Sickle, M., & Hay, G. (2005). Students' Conceptions of Scale Regarding Groundwater. *Journal of Geoscience Education*, 53(4), 374-380. // g6, g7, HYDROS, GROUNDW.
- Dickerson, D., & Dawkins, K. (2004). Eighth Grade Students' Understandings of Groundwater. *Journal of Geoscience Education*, 52(2), 178-181. // g6, g7, HYDROS, GROUNDW.
- Dierking, L. D., Ellenbogen, K. M., & Falk, J. (2004). In principle, in practice: Perspectives on a decade of museum learning research (1994-2004). *Science Education*, 88(supplement 1), S1-S3. // g1, INFORMAL, METHODS.
- Dillon, J., Rickinson, M., Sanders, D., & Teamey, K. (2005). On food, farming and land management: Towards a research agenda to reconnect urban and rural lives. *International Journal of Science Education*, 27(11), 1359-1374. // g1, g7, STS, B, ECOLOGY.

- Dimopoulos, K., & Koulaidis, V. (2003). Science and technology education for citizenship: The potential role for the press. *Science Education*, 87(2), 241-256. // g1, STS, ASTRO, ATMOS, LITHOS, BIOS.
- Dittmann, S. (2009) Bodenversalzung. Fachliche Vorstellungen und Schülervorstellungen zu einem geographischen Themenklassiker. *Oldenburger Vordrucke: Vol. 584*. Oldenburg: Didaktisches Zentrum. // g6, PEDOS.
- Dodick, J., Orion, N. (2003). Cognitive factors affecting student understanding of geologic time. *Journal of Research in Science Teaching*, 40(4), 415-442. // g6, ES, LITHOS, GEOLTIME.
- Dodick, J., & Orion, N. (2003). Measuring student understanding of geological time. *Science Education*, 87(5), 708-731. // g6, ES, LITHOS, GEOLTIME.
- Doménech, J., Gil-Pérez, D., Gras-Martí, A., Guisasola, J., Martínez-Torregrosa, J., Salinas, J., & al., e. (2007). Teaching of energy issues: A debate proposal for a global reorientation. *Science & Education*, 16(1), 43-46. // g1, g7, P, EN.
- Dove, J. (1996). Student Teacher Understanding of the Greenhouse Effect, Ozone Layer Depletion and Acid Rain. *Environmental Education Research*, 2(1), 89-100. // g8, HUMINDATM, GREENHEF, OZON, ATMOS, CLIM, CLIMCHANGE.
- Dove, J. (1997). Student ideas about weathering and erosion. *International Journal of Science Education*, 19(8), 971-980. // g6, ATMOS, WEATHER, LITHOS, GEOMOR, WEATHERING, EROSED.
- Dove, J. (1998). Alternative conceptions about the weather. *School Science Review*, 79(289), 65-69. // g6, ATMOS, WEATHER.
- Dove, J. (1999). *Theory into Practice - Immaculate Misconceptions*. Sheffield: The Geographical Association. // g6, g7, CON, LITHOS, GEOL, ROCKS, GEOMOR, WEATHERING, EROSED, HYDROS, RIVERS, KRYOS, ATMOS, HUMINDATM, GREENHEF, OZON, AIRPOL, METHODS.
- Dove, J. (2002). Does the man in the moon ever sleep? An analysis of student answers about simple astronomical events: a case study. *International Journal of Science Education*, 24(8), 823-834. // g6, P, AS, ASTRO, MOON.
- Dove, J. E., Everett, L. A. , Preece, P. F. (1999). Exploring a hydrological concept through children's drawings. *International Journal of Science Education*, 21(6), 485-498. // g5, g6, HYDROS, RIVERS.
- Drieling, K. (2005). Boden als Unterrichtsthema - eine Pilotstudie mit Studienanfängern des Geographie-Lehramts. *Geographie und ihre Didaktik*, 33(4), 192-210. // g6, PEDOS.
- Drieling, K. (2006). Schoolgirls' and schoolboys' alternative ideas of soil and soil degradation. . In S. Hlawatsch, G. Obermaier & U. Martin (Eds.), *Geoscience Education: Understanding System Earth. Schriftenreihe der Deutschen Gesellschaft für Geowissenschaften*. (Vol. 48, pp. 143). // g6, PEDOS.
- Drieling, K. (2008). Erde oder Boden, Horizonte oder Schichten? Alltagsvorstellungen zum Aufbau des Bodens. *Geographie heute*, 29(265), 34-39. // g6, g7, PEDOS.
- Duit, R. (1986). Energievorstellungen. *Naturwissenschaften im Unterricht - Physik/Chemie*, 34(13), 7-9. // g1, OHTERS.
- Duit, R. (1986). Wärmeevorstellungen. *Naturwissenschaften im Unterricht - Physik/Chemie*, 34(13), 30-33. // g1, OHTERS.
- Duit, R. (1989). Vorstellung und Experiment - Von der eingeschränkten Überzeugungskraft experimenteller Beobachtungen. *Naturwissenschaften im Unterricht - Physik/Chemie*, 37(48), 319-321. // g1, OHTERS, LAB.
- Duit, R. (1993). Alltagsvorstellungen berücksichtigen! *Praxis der Naturwissenschaften Physik*, 6(42), 7-11. // g1, OHTERS.
- Duit, R. (1993). Schülervorstellungen - von Lerndefiziten zu neuen Unterrichtsansätzen. *Naturwissenschaften im Unterricht - Physik*, 4(16), 16-23. // g7, OTHERS.
- Duit, R. (2008). Zur Rolle von Schülervorstellungen im Unterricht. *Geographie heute*, 29(265), 2-7. // g1, CON, AUSUBEL.
- Duit, R., & Treagust, D. F. (2003). Conceptual change: a powerful framework for improving science teaching and learning. *International Journal of Science Education*, 25(6), 671-688. // g1, CC.
- Duit, R., Treagust, D. F., & Widodo, A. (2008). Teaching science for conceptual change: Theory and practice. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 629-646). New York: Routledge. // g1, CC, g8, CTL, gp.
- Dupre, F., Noce, G. , Vicentini-Missoni, M. (1984). Die Gestalt der Erde und die Schwerkraft: Common-Sense Wissen von Erwachsenen. *physica didactica*, 11, 3-21. // g6, P, M, AS, ASTRO, SHAPEEARTH.

- Edelson, D. C. (2001). Learning-for-use: A framework for the design of technology-supported inquiry activities. *Journal of Research in Science Teaching*, 38(3), 355-385. // g7, ES, MMEDIA.
- Ehrlén, K. (2008). Children's Understanding of Globes as a Model of the Earth: A problem of contextualizing. *International Journal of Science Education*, 30(2), 221-238. // g1, MN, WORLDVIEW.
- Ekborg, M. (2001). How student teachers use scientific conceptions to discuss a complex environmental issue. In D. Psillos, Kariotoglou, P. , Tselfes, V. , Bisdikian, G. , Fassoulopoulos, G. , Hatzikraniotis, E. , Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 727-729). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, STS, OTHERS.
- Ellenbogen, K. M., Luke, J. J., & Dierking, L. D. (2004). Family learning research in museums: An emerging disciplinary matrix? *Science Education*, 88(supplement), S48-S58. // g1, INFORMAL, METHODS.
- Eloranta, V. (1994). Development of student teachers' environmental awareness in teacher education. In M. Ahtee, Pehkonen, E. (Ed.), *Constructivist viewpoints for school teaching and learning in mathematics and science* (pp. 75-80). Helsinki: Department of Teacher Education, University of Helsinki. // g7, g8, B, STS, OTHERS.
- Elshof, L. (2004). *Teachers confront climate change: Personal worldviews and transformational change*. Paper presented at the NARST Conference 2004, VANCOUVER. // g8, STS, ATMOS, CLIM, WORLDVIEW.
- Englebrecht, A. C., Mintzes, J. J., Brown, L. M., & Kelso, P. R. (2005). Probing Understanding in Physical Geology Using Concept Maps and Clinical Interviews. *Journal of Geoscience Education*, 53(3), 263-270. // g5.
- Ergazaki, M., & Zogza, V. (2008). Exploring lake ecology in a computer-supported learning environment. *Journal of Biological Education*, 42(2), 90-94. // g7, B, ECOLOGY, MMEDIA.
- Eyres, M., & Garner, W. (1998). Children's Ideas about Landscapes. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography* (pp. 36-37). Sheffield: The Geographical Association. // g6, EARTHYSYS, SYSPROP, LITHOS, LAND.
- Felzmann, D. (2010). Wenn Gletscher und Schülervorstellungen in Bewegung geraten. Analyse der Vorstellungsentwicklung zum Thema "Gletscherbewegung" in einem Vermittlungsexperiment. In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 87-122). Berlin: Logos. // g6, g7, KRYOS, GLAC.
- Finegold, M., Pundak, D. (1990). Students' conceptual frameworks in astronomy. *The Australian Science Teachers Journal*, 36(2), 76-83. // g6, P, AS, ASTRO, ROTHEARTH, STARS.
- Fischer, H. (1997). Die Vorstellungen von Grundschuelern zum Planetensystem. In H. Behrendt (Ed.), *Zur Didaktik der Physik und Chemie. Probleme und Perspektiven* (pp. 194-196). Alsbach: Leuchtturm-Verlag. // g6, P, AS, O, ASTRO.
- Fisher, B. W. (1998). There's a hole in my greenhouse effect. *School Science Review*, 79(288), 93-99. // g6, ATMOS, HUMINDATM, GREENHEF, OZON.
- Ford, D. J. (2003). Sixth Graders' Conceptions of Rocks in their Local Environments. *Journal of Geoscience Education*, 51(4), 373-377. // g6, g7, LITHOS, GEOL, ROCKS.
- Ford, D. J. (2005). The challenges of observing geologically: Third graders' descriptions of rock and mineral properties. *Science Education*, 89(2), 276-295. // g6, ES, LITHOS, GEOL, ROCKS, MINRES.
- Fortner, R. W. (2001). Climate Change in School: Where Does It Fit and How Ready Are We? *Canadian Journal of Environmental Education*, 6(Spring), 18-31. // g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Francis, C., Boyes, E. , Qualter, A. , Stanisstreet, M. (1993). Ideas of elementary students about reducing the "Greenhouse effect". *Science Education*, 77(4), 375-392. // g6, STS, ATMOS, HUMINDATM, GREENHEF.
- Fridrich, C. (2009). Alltagsvorstellungen von Schüler/inne/n thematisieren und umstrukturieren - gezeigt am Beispiel natürlicher Erdölvorkommen. *GW-Unterricht*(114), 17-24. // g6, g7, LITHOS, GEOL, MINRES.
- Fridrich, C. (2009). Zur Nachhaltigkeit der Umstrukturierung von Alltagsvorstellungen - oder: Bilder von "Erdölseen" bei Erwachsenen. *GW-Unterricht*(115), 19-25. // g7, LITHOS, GEOL, MINRES.
- Galangau-Querat, F. (1990). Les representations de la theorie de l'evolution. In A. Giordan, Martinand, J. L. , Souchon, C. (Ed.), *Actes JIES XII* (pp. 309-314). Chamonix: Centre Jean Franco. // g6, B, LITHOS, EVOL.

- Galili, I., Lehavi, Y. (2003). The importance of weightlessness and tides in teaching gravitation. In D. Psillos, Kariotoglou, P., Tselfes, V., Hatzikraniotis, E., Fassoulopoulos, G., Kallery, M. (Ed.), *Science education research in the knowledge-based society* (pp. 231-239). Dordrecht, The Netherlands: Kluwer Academic Publishers. // g6, g8, CSC, P, M, GRAV, MOON.
- Gapp, S., & Schleicher, Y. (2010). Alltagsvorstellungen von Grundschulkindern: Erhebungsmethoden und Ergebnisse, dargestellt anhand der Thematik "Schalenbau der Erde". In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 33-54). Berlin: Logos. // g5, g6, LITHOS, EARTHINT.
- Gautier, C., Deutsch, K., & Rebich, S. (2006). Misconceptions about the Greenhouse Effect. *Journal of Geoscience Education*, 54(4), 386-395. // g6, LPRO, CC, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Gautier, C., & Solomon, R. (2005). A Preliminary Study of Students' Asking Quantitative Scientific Questions for Inquiry-Based Climate Model Experiments. *Journal of Geoscience Education*, 53(4), 432-443. // g7, ATMOS, CLIM, CLIMCHANGE.
- Gil, M. J., Martinez, B. (1999). The oceans: Are they an inexhaustible mine of resources? - The use of multimedia to investigate ecological concepts. In M. Komorek, Behrendt, H., Dahncke, H., Duit, R., Graeber, W., Kross, A. (Ed.), *Research in Science Education - Past, Present, and Future Vol.2* (pp. 510-512). Kiel: IPN Kiel. // g5, g6, B, EARTHSYS, GEOECO, HYDROS, OCEANS.
- Gobert, J. D., Clement, J. J. (1999). Effects of student-generated diagrams versus student-generated summaries on conceptual understanding of causal and dynamic knowledge in plate tectonics. *Journal of Research in Science Teaching*, 36(1), 39-54. // g7, LITHOS, TECT, PLATEC.
- Gobert, J. D. (2000). A typology of casual models for plate tectonics: Inferential power and barriers to understanding. *International Journal of Science Education*, 22(9), 937-978. // g6, ES, LITHOS, TECT, PLATEC.
- Gobert, J. D. (2005). The Effects of Different learning Tasks on Model-building in Plate Tectonics: Diagramming Versus Explaining. *Journal of Geoscience Education*, 53(4), 444-455. // g6, g7, MODEL, LPRO, LITHOS, TECT, PLATEC.
- Golledge, R., M. Marsh, et. al. (2008). Matching Geospatial Concepts with Geographic Educational Needs *Geographical Research*, 46(1), 85-98. // g1, PERCSPACE, OTHERS.
- Gowda, R., Fox, J., & Magelky, R. (1997). Students' Understanding of Climate Change: Insights for Scientists and Educators. *Bulletin of the American Meteorological Society*, 78(10), 2232-2240. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON.
- Greaves, E., Stanisstreet, M., Boyes, E., Williams, T. (1993). Children's ideas about rainforests. *Journal of Biological Education*, 27(3), 189-194. // g6, B, STS, EARTHSYS, GEOECO.
- Gropengießer, H. (2007). Theorie des erfahrungsbasierten Verstehens. In D. Krüger & H. Vogt (Eds.), *Theorien in der biologiedidaktischen Forschung*. Berlin Heidelberg: Springer-Verlag. // g1, COSC, .
- Groves, F. H., & Pugh, A. F. (1999). Elementary Pre-Service Teacher Perceptions of the Greenhouse Effect. *Journal of Science Education and Technology*, 8(1), 75-81. // g8, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Hahn, D., Brem, S. K., & Semken, S. (2005). Exploring the Social, Moral, and Temporal Qualities of Pre-Service Teachers' Narratives of Evolution. *Journal of Geoscience Education*, 53(4), 456-461. // g8, OTHERS, B, EVOL.
- Haidar, A. (1997). Arab prospective science teachers' world view: Presuppositions towards nature. *International Journal of Science Education*, 19(9), 1093-1109. // g8, CSC, GEN, WORLDVIEW.
- Hallden, O., Hansson, G., Skoog, G. (1993). Evolutionary reasoning in answers to two questions used to measure the development of understanding evolutionary theory. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, B, LITHOS, EVOL.
- Hamann, S. (Ed.). (2004). *Schülervorstellungen zur Landwirtschaft im Kontext einer Bildung für nachhaltige Entwicklung (Diss.)*. Ludwigsburg: Pädagogische Hochschule Ludwigsburg. // g6, HUMGEO.
- Hammann, M., Hoi Phan, T. T., Ehmer, M., & Grimm, T. (2008). Assessing pupils' skills in experimentation. *Journal of Biological Education*, 42(2), 66-72. // g7, LAB, INQUIRY, B.
- Hanson, L., & Redfors, A. (2006). Swedish upper secondary students' view of the origin and development of the universe. *Research in Science Education*, 36(4), 355-379. // g6, P, AS, CSC, ES, ASTRO, STARS.

- Happs, J. C. (1981). Soils. *Working paper of the Science Education Research Unit, University of Waikato, NZ.* // g6, PEDOS.
- Happs, J. C. (1982). Classifying rocks and minerals. *New Zealand Science Teacher*, 34, 20-25. // g6, LITHOS, GEOL, ROCKS, MINRES.
- Happs, J. C. (1982). Glaciers. *Working paper of the Science Education Research Unit, University of Waikato, NZ.* // g6, KRYOS, GLAC.
- Happs, J. C. (1982). Mountains. *Working paper of the Science Education Research Unit, University of Waikato, NZ.* // g6, LITHOS, GEOLTIME, TECT, VOLC, OROGEN, PLATEC, LAND.
- Happs, J. C. (1982). Some aspects of student understanding of soil. *The Australian Science Teachers Journal*, 28(3), 25-31. // g6, PEDOS.
- Happs, J. C. (1982). Some aspects of student understanding of two New Zealand landforms. *New Zealand Science Teacher*, 32, 4-9. // g6, LITHOS, LAND.
- Happs, J. C. (1982). Some aspects of students understanding of rocks and minerals. *Working paper of the Science Education Research Unit, University of Waikato, NZ.* // g6, LITHOS, GEOL, ROCKS, MINRES.
- Happs, J. C. (1983). Using socio-cognitive conflict to establish an understanding of the scientific meaning of rock. *Research in Science Education*, 13, 61-71. // g6, g7, CSC, ES, LITHOS, GEOL, ROCKS.
- Happs, J. C. (1984). Harnessing alternative frameworks in teacher training: An example from the earth sciences. *Research in Science Education*, 14, 167-172. // g6, g7, CSC, ES.
- Happs, J. C. (1984). Soil genesis and development: Views held by New Zealand students. *The Journal of Geography*, 177-180. // g6,B, PEDOS.
- Happs, J. C. (1985). Regression in learning outcomes: Some examples from the earth sciences. *European Journal of Science Education*, 7, 431-443. // g6, g7, CSC, LPRO, ES, LITHOS, GEOL, ROCKS.
- Harwood, D. (1998). Children's Understanding of Nested Hierarchies. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography* (pp. 12-13). Sheffield: The Geographical Association. // g6, PERCSPACE, CARTO.
- Harwood, D., & Rawlings, K. (2001). Assessing Young Children's Freehand Sketch Maps of the World. *International Research in Geographical and Environmental Education*, 10(1), 20-45. // g6, g7, LPRO, PERCSPACE, CARTO.
- Häußler, P., Bündler, W., Duit, R., & Mayer, J. (1998). Welche Perspektiven eröffnet die Forschung zu vorunterrichtlichen Vorstellungen und zum Lernprozeß? *Naturwissenschaftsdidaktische Forschung - Perspektiven für die Unterrichtspraxis* (pp. 169-219). Kiel: IPN. // g1.
- Hemmer, M., Rahner, M., & Schuler, S. (2011). Naturrisiken im Geographieunterricht - ausgewählte Ergebnisse empirischer Studien zur Schülerperspektive, didaktische Konsequenzen und Forschungsperspektiven. *Geographie und ihre Didaktik*, 39(1), 1-24. // g1, g6, EARTHYSYS, GEOECO, ATMOS, STORM, LITHOS, EARTHQUA, HUMGEO.
- Henze, I., Driel van, J. H., & Verloop, N. (2008). Development of experienced science teachers' pedagogical content knowledge of models of the solar system and the universe. *International Journal of Science Education*, 30(10), 1321-1342. // g8, CTL, PCK, CSC, P, AS, MODEL, ES, ASTRO.
- Hewitt, G. (1991). River quality investigations, part 2: physical, chemical, and microbial determinands of water quality. *Journal of Biological Education*, 25(3), 201-208. // g6,B,EN, HYDROS, RIVERS.
- Hildebrandt, K. (2006). *Die Wirkung systemischer Darstellungsformen und multiperspektivischer Wissensrepräsentationen auf das Verständnis des globalen Kohlenstoffkreislaufs*. Christian-Albrechts-Universität, Kiel. // g6, EARTHYSYS, SYSPROP, CYCLE, ATMOS, HUMINDATM, GREENHEF, BIOS.
- Hildebrandt, K., & Bayrhuber, H. (2003). Students' conceptions about System Earth – System thinking and multi-perspective learning in the carbon cycle context. In J. Lewis, A. Magro & L. Simonneaux (Eds.), *Biology Education for the real world / Student - Teacher - Citizen. Proceedings of the IV.th ERIDOB Conference* (pp. 285 - 292). Toulouse-Auzeville: Ecole nationale de formation agronomique (enfa). // g6, EARTHYSYS, SYSPROP, CYCLE, ATMOS, HUMINDATM, GREENHEF, BIOS.
- Hillman, M., Stanistreet, M., & Boyes, E. (1996). Enhancing Understanding in Student Teachers: the case of auto-pollution. *Journal of Education for Teaching*, 22(3), 311-325. // g8, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.

- Horn, M., & Schweizer, K. (2010). Der Umgang mit Alltagsvorstellungen zu geographischen Begriffen. Welchen Einfluss haben personale Faktoren von Lehramtsstudierenden der Geographie auf den Prozess der Konzeptveränderungen? In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 189-211). Berlin: Logos. // g1, g9, OTHERS.
- Höttecke, D. (2001). Die Vorstellungen von Schülern und Schülerinnen von der "Natur der Naturwissenschaften". *Zeitschrift für Didaktik der Naturwissenschaften*, 7, 7-23. // g6, OTHERS.
- Höttecke, D., & Rieß, F. (2007). Rekonstruktion der Vorstellungen von Physikstudierenden über die Natur der Naturwissenschaften - eine explorative Studie. *Physik und Didaktik in Schule und Hochschule*, 1(6), 1-14. // g8, CSC.
- Hoz, R., Tomer, Y., Tamir, P. (1990). The relations between disciplinary and pedagogical knowledge and the length of teaching experience of biology and geography teachers. *Journal of Research in Science Teaching*, 27(10), 973-985. // g8, CTL, CSC.
- Hoz, R., Bowmann, D., Chacham, T. (1997). Psychometric and edumetric validity of dimensions of geomorphological knowledge which are tapped by concept mapping. *Journal of Research in Science Teaching*, 34(9), 925-947. // g5, g6, LITHOS, GEOMOR.
- Hsu, Y.-S., Thomas, R.A. (2002). The impacts of a web-aided instructional simulation on science learning. *International Journal of Science Education*, 24(09), 955-979. // g7, CC, MMEDIA, PROSOL, ES, ATMOS, WEATHER.
- Hsu, Y.-S. (2007). Learning about seasons in a technologically enhanced environment: The impact of teacher-guided and student-centered instructional approaches on the process of students' conceptual change. *Science Education*, 92(2), 320-344. // g7, AS, ES, ASTRO, SEASON, CC.
- Hsu, Y.-S., Wu, H.-K., & Hwang, F.-K. (2008). Fostering high school students' conceptual understandings about seasons: The design of a technology-enhanced learning environment. *Research in Science Education*, 38(2), 127-148. // g7, P, AS, MMEDIA, ES, ASTRO, SEASON.
- Hume, J. D. (1978). An Understanding of Geologic Time. *Journal of geological education*, 26, 141-143. // g6, LITHOS, GEOLTIME.
- Jakobsson, A., Mäkitalo, Å., & Säljö, R. (2009). Conceptions of knowledge in research on students' understanding of the greenhouse effect: Methodological positions and their consequences for representations of knowing. *Science Education*, 93(6), 978-995. doi: 10.1002/sce.20341 // g5, g6, ATMOS, HUMINDATM, GREENHEF.
- Jeffries, H., Stanistreet, M., & Boyes, E. (2001). Knowledge about the 'Greenhouse Effect': have college students improved? *Research in Science & Technological Education*, 19(2), 206-221. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Jegede, O. J., Akinsola Okebukola, P. (1991). The relationship between African traditional cosmology and students' acquisition of a science process skill. *International Journal of Science Education*, 13(1), 37-47. // g6, CSC, INDIGENOUS, WORLDVIEW.
- Jonassen, D. (2008). Model building for conceptual change. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 676-693). New York: Routledge. // g1, CC, MODEL.
- Jones, B. L., Lynch, P. P., Reesink, C. (1987). Children's conceptions of the earth, sun and moon. *International Journal of Science Education*, 9(1), 43-53. // g6, P, AS, GEN, ASTRO, MOON.
- Jones, B. L., Lynch, P. P., Reesink, C. (1989). Children's understanding of the notions of solid and liquid in relation to some common substances. *International Journal of Science Education*, 11(4), 417-427. // g6, g7, P, M, LITHOS, MINRES.
- Jones, M. G., Tretter, T., Taylor, A., & Oppewal, T. (2008). Experienced and novice teachers' concepts of spatial scale. *International Journal of Science Education*, 30(3), 409-429. // g8, GC, EXNOV, PERCSPACE.
- Jones, S. (1998). The Interpretation of Geographical Photographs by 11 - and 14-Year-old Students. *International Research in Geographical and Environmental Education*, 7(2), 122-139. // g6, LITHOS, GEOMOR, LAND, COASTS, OTHERS.
- Kali, Y., Orion, N., Eylon, B.-S. (2003). Effect of knowledge integration activities on students' perception of the Earth's crust as a cyclic system. *Journal of Research in Science Teaching*, 40(6), 545-565. // g7, ES, EARTHSYS, SYSPROP, LITHOS, ROCKS.

- Kallery, M. (2001). Science and pseudo-science in the early-years classroom: The educators' attitudes to astronomy and astrology. In D. Psillos, Kariotoglou, P. , Tselfes, V. , Bisdikian, G. , Fassouloupoulos, G. , Hatzikraniotis, E. , Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 456-458). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g8, CSC, P, AS.
- Kang, N.-H. (2007). Elementary teachers' epistemological and ontological understanding of teaching for conceptual learning. *Journal of Research in Science Teaching, 44*(9), 1292-1317. // g1, g8, g9.
- Kattmann, U. (1993). Das Lernen von Namen, Begriffen und Konzepten - Grundlagen biologischer Terminologie am Beispiel "Zellenlehre". *MNU, 46*(5), 275-285. // g4, B, BIOS.
- Kattmann, U., Duit, R. (1996). Das Modell der didaktischen Rekonstruktion. In H. Behrendt (Ed.), *Zur Didaktik der Physik und Chemie: Probleme und Perspektiven* (pp. 122-124). Alsbach/Bergstrasse: Leuchtturm-Verlag. // g1, CC, CON.
- Kattmann, U., Schmitt, A. (1996). Elementares Ordnen: Wie Schueler Tiere klassifizieren. *Zeitschrift fuer Didaktik der Naturwissenschaften, 2*(2), 21-38. // g4, g6, B, BIODIV, BIOS.
- Kattmann, U., Gropengiesser, H. . (1996). Modellierung der didaktischen Rekonstruktion. In R. Duit, Rhoeneck, C. von (Ed.), *Lernen in den Naturwissenschaften* (pp. 180-204). Kiel: IPN, Kiel. // g1, CON, g6, B.
- Kattmann, U., Fischbeck, M. , Sander, E. (1996). Von Systematik nur eine Spur: Wie Schueler Tiere ordnen. *Unterricht Biologie, 20*(218), 50-52. // g4, g6, B, BIODIV, BIOS.
- Kattmann, U., Schmitt, A. (1996) Wie Schueler Tiere ordnen: Typologie oder implizite Theorie? , *Oldenburger Vordrucke: Vol. 315*. Oldenburg, Germany: Universitaet Oldenburg. // g4, g6 ,B, BIODIV, BIOS.
- Kattmann, U., Duit, R. , Gropengiesser, H. , Komorek, M. (1997). Das Modell der Didaktischen Rekonstruktion - Ein Rahmen fuer naturwissenschaftsdidaktische Forschung und Entwicklung. *Zeitschrift fuer Didaktik der Naturwissenschaften, 3*(3), 3-18. // g1, CC, CON,.
- Kattmann, U., Duit, R. , Gropengiesser, H. (1998). The model of educational reconstruction - bringing together issues of scientific clarification and students' conceptions. In H. Bayrhuber, Brinkman, F. (Ed.), *What - Why - How? Research in Didaktik of Biology* (pp. 253-262). Kiel: IPN - Materialien. // g1, CC, CON.
- Kattmann, U. (1999). Warum und mit welcher Wirkung klassifizieren Wissenschaftler Menschen? In H. Kaupen-Haas, Saller, C. (Ed.), *Wissenschaftlicher Rassismus* (pp. 65-83). Frankfurt (Main), Germany: Campus Verlag. // g6, B, HUMAN.
- Kattmann, U. (2001). Aquatics, Flyers, Creepers and Terrestrials - students' conceptions of animal classification. *Journal of Biological Education, 35*(3), 141-148. // g4, g6, B, BIODIV, BIOS.
- Kattmann, U. (2005). Lernen mit anthropomorphen Vorstellungen? - Ergebnisse von Untersuchungen zur Didaktischen Rekonstruktion in der Biologie. *Zeitschrift fuer Didaktik der Natruwissenschaften, 11*. // g1, ANTHRO, CC.
- Kattmann, U. (2007). Didaktische Rekonstruktion - eine praktische Theorie. In D. Krüger & H. Vogt (Eds.), *Theorien in der biologiedidaktischen Forschung - Ein Handbuch für Lehramtsstudenten und Doktoranden*. Berlin Heidelberg: Springer Verlag. // g1.
- Kaufmann, H. (2001). Wasser - ein natuerlicher Stoff? Ergebnisse einer Befragung in den Jahrgangsstufen 9 und 10. *Chimica didactica, 27*(1), 9-25. // g6, C, HYDROS.
- Keating, T., Barnett, M., Barab, S. A., Hay, K. E. (2002). The virtual solar system project: Developing conceptual understanding of astronomical concepts through building three-dimensional computational models. *Journal of Science Education and Technology, 11*(3), 261-275. // g7, P, AT, MMEDIA, ASTRO.
- Keil, F. C., & Newman, G. E. (2008). Two tales of conceptual change: What changes and what remains the same. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 83-101). New York: Routledge. // g1, CC.
- Kelly, G., Chen, C. , Prothero, W. (2000). The epistimological framing of a discipline: Writing science in University Oceanography. *Journal of Research in Science Teaching, 37*(7), 691-718. // g1,SCON,g7,ES,CSC,WRITING,MMEDIA, HYDROS, OCEANS.
- Kelly, G. J., Takao, A. (2002). Epistemic levels in argument: An analysis of university oceanography students' use of evidence in writing. *Science Education, 86*(3), 314-342. // g1, DISCOURSE, ARGUMENTATION, g7, HYDROS, OCEANS.
- Kerr, K., Beggs, J., & Murphy, C. (2006). Comparing children's and student teachers' ideas about science concepts. *Irish Educational Studies, 25*(3), 289-302. // g6, g8, CSC.

- Keselman, A. (2003). Supporting inquiry learning by promoting normative understanding of multivariable causality. *Journal of Research in Science Teaching*, 40(9), 898-921. // g7, ES, GC.
- Khalid, T. (2003). Pre-service High School Teachers' Perceptions of Three Environmental Phenomena. *Environmental Education Research*, 9(1), 35-50. // g8, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, .
- Khishfe, R. (2008). The development of seventh graders' views of nature of science. *Journal of Research in Science Teaching*, 45(4), 470-496. // g7, CSC, INQUIRY.
- Kikas, E. (1998). The impact of teaching on students' definitions and explanations of astronomical phenomena. *Learning and Instruction*, 8(5), 439-454. // g6, P, AS, ASTRO.
- Kilburn, R. (1993). The effect of astronomy teaching experience on the astronomy interests and conceptions of elementary school teachers. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g8, P, AS, ASTRO.
- Kilinc, A., Stanisstreet, M., & Boyes, E. (2008). Turkish Students' Ideas about Global Warming. *International Journal of Environmental & Science Education*, 3(2), 89-98. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Kim, C. J., Barufaldi, J. P. (1990). Students' intuitive ideas about "Water in the atmosphere": A cross age study. *Paper presented at the annual meeting of the National Association for Research in Science Teaching, Atlanta, Georgia*. // g6, P, M, HYDROS, ATMOS.
- Kim, J. (1997). Children's theory of race: A question of interpretation. *Cognition*, 64(3), 345-348. // g6, B, OTHERS.
- King, C. (2000). The Earth's mantle is solid: Teachers' misconceptions about the Earth and plate tectonics. *School Science Review*, 82(298), 57-64. // g8, ES, LITHOS, EARTHINT, TECT, PLATEC.
- Klein, C. A. (1982). Children's concepts of the earth and the sun: A cross cultural study. *Science Education*, 65(1), 95-107. // g6, P, AS, ASTRO.
- Klonari, A., Dalaka, A., & Petanidou, T. (2011). How evident is the apparent? Students' and teachers' perceptions of the terraced landscape. *International Research in Geographical and Environmental Education*, 20(1), 5 - 20. // g6, g7, LITHOS, LAND, HUMGEO.
- Koerner, H.-D. (1995). Die Bedeutung bildhafter Vorstellungen fuer das Lernen von naturwissenschaftlichem Unterricht. In H. Behrendt (Ed.), *Zur Didaktik der Physik und Chemie - Probleme und Perspektiven - Vortraege auf der Tagung fuer Didaktik der Physik / Chemie in Dresden, September 1995* (pp. 60-69). Alsbach: Leuchtturm-Verlag. // g1, g7, C, CTL.
- Koulaidis, V., Christidou, I. (1993). Children's misconceptions and cognitive strategies regarding the understanding of the ozone layer depletion. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, P, ANA, ATMOS, HUMINDATM, OZON.
- Koulaidis, V., Christidou, V. (1999). Models of students' thinking concerning the greenhouse effect and teaching implications. *Science Education*, 83(5), 559-576. // g6, STS, ATMOS, HUMINDATM, GREENHEF.
- Krause, H. (1964). Von der Luft und dem Feuer. *Westermanns Paedagogische Beitrage*, 16, 10-19. // g6, g7, C, P, ATMOS, ELEMCLIM.
- Krause, H. (1966). Die Verbrennung der Kohle. *Westermanns Paedagogische Beitrage*, 18, 1-12. // g7, C, LITHOS, GEOL, MINRES.
- Krüger, D. (2007). Die Conceptual-Change-Theorie. In D. Krüger & H. Vogt (Eds.), *Theorien in der biologiedidaktischen Forschung - Ein Handbuch für Lehramtsstudenten und Doktoranden* (pp. 81-92). Berlin Heidelberg: Springer Verlag. // g1, CC.
- Kubli, F. (1983). Kosmosvorstellungen als Indikatoren fuer kindliche Denkprozesse. *physica didactica*, 10, 131-147. // g6, P, AS, ASTRO, MOON.
- Kubli, F. (1984). Kosmosvorstellungen von Kindern und die Astronomie im Unterricht. In U. Hameyer, Kapune, T. (Ed.), *Weltall und Weltbild* (pp. 75-96). Kiel: Schmidt & Klaunig. // g6, g7, P, AS, SHAPEEARTH.
- Kurdziel, J. P., & Libarkin, J. C. (2002). Research Methodologies in Science Education: Students' Ideas About the Nature of Science. *Journal of Geoscience Education*, 50(3), 322-329. // g6, CSC, LITHOS, GEOL.
- Kusnick, J. (2002). Growing pebbles and conceptual prisms - Understanding the source of student misconceptions about rock formation. *Journal of Geoscience Education*, 50(1), 31-39. // g6, LTHOS, GEOL, ROCKS.

- Lacin Simsek, C. (2007). Children's Ideas about Earthquakes. *Journal of Environmental and Science Education, 2*(1), 14-19. // g6, LITHOS, TECT, EARTHQUA.
- Lambrinos, N. (2001). World maps: A pupils approach. In D. Psillos, Kariotoglou, P. , Tselfes, V. , Bisdikian, G. , Fassouloupoulos, G. , Hatzikraniotis, E. , Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 505-507). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6,ES, PERCSPACE, CARTO.
- Lanciano, N. (1989). Aides didactiques en astronomie. In A. Giordan, Martinand, J. L. , Souchon, C. (Ed.), *Actes JIES XI* (pp. 395-400). Chamonix: Centre Jean Franco. // g6, P, AS, ASTRO, MOON.
- Lanciano, N. (1990). Tra luce e ombra: aspetti di geometria e astronomia. *L'insegnamento della Matematica e delle Scienze Integrate, 13*(3,5,7,9). // g7, P, AS, ASTRO.
- Lanciano, N. (1994). Aspects of teaching learning geometry by means of astronomy. In N. M. Malara, Rico, L. (Ed.), *Proceedings of the first Italian-Spanish research symposium in mathematics education* (pp. 43-49). Modena: Mathematics Department, University of Modena. // g6, P, AS, ASTRO.
- Lanciano, N. (1994). Conceptual obstacle in astronomy: Spatial vision. *L'educazione Matematica, 1*(1), 5-20. // g6, P, AS, ASTRO.
- Lane, R. (2008). Students' Alternative Conceptions in Geography. *Geographical Education, 21*, 43-52. //
- Larsson, Å., & Halldén, O. (2010). A structural view on the emergence of a conception: Conceptual change as radical reconstruction of contexts. *Science Education, 94*(4), 640-664. doi: 10.1002/sc.20377 //
- Leach, J. T., & Scott, P. H. (2008). Teaching for conceptual understanding: An approach drawing on individual and sociocultural perspectives. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 647-675). New York: Routledge. // g1, CC, SCON, PIAGET, VYGOTSKY, DISCOURSE, g7.
- Leather, D. A. (1987). Views of the nature and origin of earthquakes and oil held by eleven to. *Geology teaching : journal of the Association of Teachers of Geology, 12*(3), 102-108. // g6, LITHOS, GEOL, MINRES, TECT, EARTHQUA.
- Lederman, N. G. (2007). Nature of science: past, present, and future. In S. K. Abell & N. G. Lederman (Eds.), *Handbook of research on science education* (pp. 831-879): Lawrence Erlbaum Associates. // g1, CSC, g6, g7, g8.
- Lee, H., & Sungah, B. (2008). Issues in Implementing a structured problem-based learning strategy in a volcano unit: a case study. *International Journal of Science and Mathematics Education, 6*(4), 655-676. // g7, g8, PROSOL, LITHOS, TECT, VOLC.
- Lee, O. (1999). Science Knowledge, World Views, and Information Sources in Social and Cultural Contexts: Making Sense after a Natural Disaster. *American Educational Research Journal, 36*(2), 187-219. // g6, ATMOS, STORM, WORLDVIEW.
- Lee, O., Lester, B. T., Ma, L., Lambert, J., & Jean-Baptiste, M. (2007). Conceptions of the Greenhouse Effect and Global Warming among Elementary Students from Diverse Languages and Cultures. *Journal of Geoscience Education, 55*(2), 117-125. // g6, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Leighton, J. P., & Bisanz, G. L. (2003). Children's and adults' knowledge and models of reasoning about the ozone layer and its depletion. *International Journal of Science Education, 25*(1), 117-139. // g6, ATMOS, HUMINDATM, OZON.
- Lemanowski, V. (2004). *The hidden earth part three: Group work and its effect on geo-visualization learning*. Paper presented at the NARST Conference 2004, VANCOUVER. // g7, ES, MMEDIA.
- Lemmer, M., Smit, J. J. A. , Vreken, N. J. (1999). Students' perceptions of time. In M. Komorek, Behrendt, H. , Dahncke, H. , Duit, R. , Graeber, W. , Kross, A. (Ed.), *Research in Science Education - Past, Present, and Future Vol.1* (pp. 98-100). Kiel: IPN Kiel. // g6, GC, GEN, P, M, LITHOS, GEOLTIME.
- Lenzen, M. (2001). The Role of Equity and Lifestyles in Education about Climate Change: Experiences from a Large-scale Teacher Development Program. *Canadian Journal of Environmental Education, 6*(Spring), 32-51. // g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Lenzen, M., Dey, C., & Murray, J. (2002). A Personal Approach to Teaching about Climate Change. *Australian Journal of Environmental Education, 18*, 35-45. // g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Lenzen, M., & Smith, S. (2000). Teaching Responsibility for Climate Change: Three Neglected Issues. *Australian Journal of Environmental Education, 15/16*, 65-75. // g1, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Lethmate, J. (2007). "Didaktische Rekonstruktion" als Forschungsrahmen der Geographiedidaktik. *Geographische Rundschau, 59*(7/8), 54-59. // g1, PEDOS, BIOS.

- Libarkin, J. C. (2005). Conceptions, Cognition, and Change: Student Thinking about the Earth (Editorial). *Journal of Geoscience Education*. // g6, g7, LITHOS, FOSSILS, TECT, EARTHQUA, PLATEC.
- Libarkin, J. C. (2006). College student conceptions of geological phenomena and their importance in classroom instruction. *Planet*, 17, 6-9. // g1, ASTRO, SHAPEEARTH, LITHOS, GEOLTIME, TECT, VOLC.
- Libarkin, J. C., & Anderson, S. W. (2005). Assessment of Learning in Entry-Level Geoscience Courses: Results from the Geoscience Concept Inventory. *Journal of Geoscience Education*, 53(4), 394-401. // g7, LPRO, OTHERS.
- Libarkin, J. C., & Anderson, S. W. (2006). Science concept inventory development in higher education: A mixed-methods approach in the geosciences. *Journal of Research in Science Teaching*, in prep. // g5.
- Libarkin, J. C., Anderson, S. W., Dahl Science, J., Beilfuss, M., & Boone, W. (2005). Qualitative Analysis of College Students' Ideas about the Earth: Interviews and Open-Ended Questionnaires. *Journal of Geoscience Education*, 53(1), 17-26. // g6, CC, LITHOS, EARTHINT, GEOLTIME, TECT, EARTHQUA.
- Libarkin, J. C., Beilfuss, M., & Kurdziel, J. P. (2003). Research Methodologies in Science Education: Mental Models and Cognition in Education. *Journal of Geoscience Education*, 51(1), 121-126. // g6, CSC, MN, ASTRO, SHAPEEARTH, LITHOS, TECT, PLATEC.
- Libarkin, J. C., & Kurdziel, J. P. (2001). Research Methodologies in Science Education: Assessing Students' Alternative Conceptions. *Journal of Geoscience Education*, 49(4), 378-383. // g7, LPRO, METHODS.
- Libarkin, J. C., & Kurdziel, J. P. (2006). Ontology and the Teaching of Earth System Science. *Journal of Geoscience Education*, 54(3), 408-413. // g6, g7, KRYOS, GLAC, LITHOS, FOSSILS, TECT.
- Lightman, A. P., Sadler, P. M. (1988). The earth is round ? Who are you kidding ? *Science and Children*, 25(5), 24-26. // g6,P,AS, ASTRO, SHAPEEARTH.
- Lillo, J. (1994). An Analysis of the annotated drawings of the Internal Structure of the Earth made by Students aged 10-15 from Primary and Secondary Schools in Spain. *Teaching Earth Sciences*, 19(3), 83-87. // g6, LITHOS, EARTHINT, TECT, VOLC.
- Lindemann-Matthies, P. (2005). 'Loveable' mammals and 'lifeless' plants: How children's interest in common local organisms can be enhanced through observation of nature. *International Journal of Science Education*, 27(6), 655-677. // g6, LPRO, AFF, B, BIODIV, BIOS.
- Linn, M. C. (2008). Teaching for conceptual change: Distinguish or extinguish ideas. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 694-722). New York: Routledge. // g1, CC, g7, MMEDIA.
- Liu, S.-C. (2005) The alternative models of the universe. A cross-cultural study on students' and historical ideas about the heavens and the Earth. *Beiträge zur didaktischen Rekonstruktion: Vol. 8*. Oldenburg: Didaktisches Zentrum der Carl von Ossietzky Universität. // g1, CON, g3, g7, P, AS, ASTRO.
- Liu, S.-C. (2005). Models of "The heavens and the earth": An investigation of German and Taiwanese students' alternative conceptions of the universe. *International Journal of Science and Mathematics Education*, 3(2), 295-325. // g6, P, AS, ASTRO.
- Liu, S.-Y., & Lederman, N. G. (2007). Exploring prospective teachers' worldviews and conceptions of nature of science. *International Journal of Science Education*, 29(10), 1281-1308. // g8, CSC, WORLDVIEW.
- Lombardi, D., & Sinatra, G. (2010). College Students' Perceptions About the Plausibility of Human-Induced Climate Change. *Research in Science Education*, 1-17. doi: 10.1007/s11165-010-9196-z //
- Lundie, A. (1995). Developing explanations - Children's ideas about night and day. In D. Psillos (Ed.), *European Research in Science Education II* (pp. 275-281). Thessaloniki: Art of Text S. A. // g6, P, AS, ASTRO, ROTHEARTH.
- Mackintosh, M. (1999). Children's Views in Physical Geography. *International Research in Geographical and Environmental Education*, 8(1), 69-72. // g6, CSC, OTHERS.
- Magnusson, S., Templin, M., & Boyle, R. (1997). Dynamic science assessment: A new approach for investigating conceptual change. *Journal of the Learning Sciences*, 6(1), 91-142. // g7, P, E, CC.
- Mali, G. B., Howe, A. C. (1979). Development of earth and gravity concepts among Nepali children. *Science Education*, 63(5), 685-691. // g6,P,AS, ASTRO.
- Mant, J., Summers, M. (1993). Some primary-school teachers' understanding of the earth's place in the universe. *Research Papers in Education*, 8(1), 101-129. // g8,P,AS, ASTRO.

- Maria, K. (1993). The development of earth concepts. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, g7, P, AS, ASTRO.
- Marinopoulos, D., Stavridou, H. (2001). The acid rain formation and its consequences to the people and the environment: Primary students' conceptions of the 5th and 6th. In D. Psillos, Kariotoglou, P. , Tselfes, V. , Bisdikian, G. , Fassoulopoulos, G. , Hatzikraniotis, E. , Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 736-738). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, STS, ATMOS, HUMINDATM, AIRPOL.
- Marohn, A. (2008). "Choice2learn" - eine Konzeption zur Exploration und Veränderung von Lernvorstellungen im Naturwissenschaftlichen Unterricht. *Zeitschrift für Didaktik der Naturwissenschaften*, 14, 57-83. // g7, CON, CC.
- Marohn, A. (2008). Schülervorstellungen zum Lösen und Sieden - auf der Suche nach "elementaren" Vorstellungen. *Der mathematische und naturwissenschaftliche Unterricht*, 61(8), 451-457. // g6, C, OTHERS.
- Marques, L., & Thompson, D. (1997). Portuguese Students' Understanding at Ages 10-11 and 14-15 of the Origin and Nature of the Earth and the Development of Life. *Research in Science & Technological Education*, 15(1), 29-51. // g6, ASTRO, LITHOS, FOSSILS.
- Marton, F., & Pang, M. F. (2008). The idea of phenomenography and the pedagogy of conceptual change. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 533-559). New York: Routledge. // g1, CC, PHEN.
- Mason, L., & Santi, M. (1998). Discussing the Greenhouse Effect: children's collaborative discourse reasoning and conceptual change. *Environmental Education Research*, 4(1), 67-85. // g7, CC, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- May, T. (1998). Children's Ideas about Rivers. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography* (pp. 38-39). Sheffield: The Geographical Association. // g6, HYDROS, RIVERS.
- McConnell, D. A., Steer, D. N., Owens, K. D., & Knight, C. C. (2005). How Students Think: Implications for Learning in Introductory Geoscience Courses. *Journal of Geoscience Education*, 53(4), 462-470. // g6, g7, GC.
- Meloefski, R. (2007). Vom Alltagsbegriff zum Fachbegriff. Über die Notwendigkeit im (Chemie-)Unterricht Vorstellungen zu entwickeln. *Der mathematische und naturwissenschaftliche Unterricht*, 60(4), 223-229. // g4.
- Menzel, S., Bögeholz, S. (2006). Vorstellungen und Argumentationsstrukturen von Schüler(inne)n der elften Jahrgangsstufe zur Biodiversität, deren Gefährdung und Erhaltung. *Zeitschrift für Didaktik der Naturwissenschaften*, 12, 199-217. // g6, OTHERS.
- Mercer, N. (2008). Changing our minds: a commentary on "Conceptual change: a discussion of theoretical, methodological and practical challenges for science education". *Cultural Studies of Science Education*, 3, 351-362. // g1, CC, SCON.
- Meyer, C. (2007). Subjective Theories as a Basis of Professional Development: How Far is ESD Included? In S. Reinfried, Y. Schleicher & A. Rempfler (Eds.), *Geographical Views on Education for Sustainable Development* (Vol. 42, pp. 144-150). Luzern: Selbstverlag des Hochschulverbandes für Geographie und ihre Didaktik e.V. (HGD). // g8, OTHERS.
- Michail, S., Stamou, A. G., & Stamou, G. P. (2006). Greek Primary School Teachers' Understanding of Current Environmental Issues: An Exploration of Their Environmental Knowledge and Images of Nature. *Wiley InterScience*. Retrieved from www.interscience.wiley.com doi:DOI 10.1002/sce // g8, ATMOS, HUMINDATM, GREENHEF, OZON, AIRPOL.
- Milne, C., Kirch, S., Jhumki Basu, S., Leou, M., & Fraser-Abder, P. (2008). Understanding conceptual change: connecting and questioning. *Cultural Studies of Science Education*, 3, 417-434. // g1, CC, SCON.
- Miyake, N. (2008). Conceptual change through collaboration. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 453-478). New York: Routledge. // g1, CC, SCCN, g7.
- Mori, I., Kitagawa, O. , Tadang, N. (1974). The effect of language on a child's forming of spatio-temporal concept: On comparing Japanese and Thai children. *Science Education*, 58, 523-529. // g4, P, M, SPEED, OTHERS.
- Mulholland, J., & Ginns, I. S. (2008). College MOON project Australia: Preservice teachers learning about the moon's phases. *Research in Science Education*, 38(3), 385-399. // g8, P, AS, ES, ASTRO, MOON.

- Muller, D. A., & Sharma, M. D. (2007). Raising cognitive load with linear multimedia to promote conceptual change. *Science Education*, 92(2), 278-296. // g1, COSC, CON, CC, g7, P, M, FORCE, MMEDIA.
- Müller, M. (2009) Meteoriteneinschläge auf der Erde. Fachliche Konzepte, Schülerperspektiven und didaktische Umsetzung. *Geographiedidaktische Forschungen: Vol. 43*. Weingarten: HGD. // g6, ASTRO, LITHOS, LAND.
- Murphy, P. K., & Alexander, P. A. (2008). The role of knowledge, beliefs, and interest in the conceptual change process: A synthesis and meta-analysis of the research. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 583-616). New York: Routledge. // g1, CC, AFF, g6, g7.
- Muthukrishna, N., Carnine, D., Grossen, B., & Miller, S. (1993). Children's Alternative Frameworks: Should They Be Directly Addressed in Science Instruction? *Journal of Research in Science Teaching*, 30(3), 233-248. // g6, g7, LITHOS, TECT, OROGEN, ASTRO, SEASON
- Myers, G., Boyes, E., & Stanisstreet, M. (1999). Something in the Air: School Students' Ideas about Air Pollution. *International Research in Geographical and Environmental Education*, 8(2), 108-119. // g6, GEN, ATMOS, HUMINDATM, AIRPOL.
- Nagel, M. C. (2004). Lend Them An Ear: The Significance of Listening to Children's Experiences of Environmental Education. *International Research in Geographical and Environmental Education*, 13(2), 115-127. // g6, OTHERS.
- Nay, U. (1977). Fachspezifische Nomenklatur als Beitrag zur Entfremdung zwischen Kind und Umwelt. In H. Dahncke (Ed.), *Zur Didaktik der Physik und Chemie* (pp. 122-124). Hannover: Schroedel. // g4.
- Ndaruga, A. M., & Irwin, P. R. (2003). Cultural Perceptions of Wetlands by Primary School Teachers in Kenya. *International Research in Geographical and Environmental Education*, 12(3), 219-230. // g8, GEN, HYDROS.
- Nelson, B. D., Aron, R. H., & Francel, M. A. (1992). Clarification of Selected Misconceptions in Physical Geography. *Journal of Geography*, 91(2), 76-80. // g6, ATMOS, ELEMCLIM, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, HYDROS, OCEANS, LITHOS, TECT, VOLC.
- Nersessian, N. J. (2008). Mental modeling in conceptual change. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 391-416). New York: Routledge. // g1, CC, MM, DISCOURSE.
- Niebert, K. (2009). Der Kohlenstoffkreislauf im Klimawandel. *Unterricht Biologie*(349), 34-40. // g6, g7, EARTHSYS, CYCLE, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Niebert, K. (2010) Den Klimawandel verstehen. Eine didaktische Rekonstruktion der globalen Erwärmung *Vol. 31. Beiträge zur Didaktischen Rekonstruktion*. Oldenburg: Didaktisches Zentrum, Universität Oldenburg. // g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Nugent, G., Kunz, G., Levy, R., Harwood, D., & Carlson, D. (2008). The impact of a field-based, inquiry-focused model of instruction on preservice teachers' science learning and attitudes. *Electronic Journal of Science Education*, 12(2), 1-18. // g8, ES, METHODS, CTL, INQUIRY.
- Nussbaum, J., Novak, J. D. (1976). An assessment of children's concepts of the earth utilizing structured interviews. *Science Education*, 60(4), 535-550. // g6, CSC, P, AS, ASTRO, SHAPEEARTH.
- Nussbaum, J., Novak J. D. (1978). Interviews zur Beurteilung der Vorstellung von Kindern ueber die Erde. *physica didactica*, 5, 33-51. // g6, P, AS, ASTRO.
- Nussbaum, J. (1979). Children's conception of the earth as a cosmic body: A cross-age study. *Science Education*, 63, 83-93. // g6, P, AS, ASTRO.
- Nussbaum, J., Sharodini-Dagan, N. (1983). Changes in second grade children's preconceptions about the earth as a cosmic body resulting from a short series of audio-tutorial lessons. *Science Education*, 67, 99-114. // g6, g7, P, AS, ASTRO.
- Nussbaum, J. (1985). The earth as a cosmic body. In R. Driver, Guesne, E., Tiberghien, A. (Ed.), *Children's ideas in science* (pp. 170-192). Milton Keynes: Open University Press. // g6, g7, P, AS, ASTRO.
- Nussbaum, J. (1986). Students perceptions of astronomical concepts. In J. J. Hunt (Ed.), *GIREP conference 1986: Cosmos - an educational challenge. Proceedings of a conference held in Copenhagen, Denmark* (pp. 87-97). Noordwijk, Netherlands: European Space Agency Publications Division. // g6, LPRO, CSC, P, AS, SHAPEEARTH.
- Obermaier, G., & Schrüfer, G. (2009). Personal concepts on "Hunger in Africa". *International Research in Geographical and Environmental Education*, 18(4), 245-251. // g6, HUMGEO.

- Ogan-Bekiroglu, F. (2007). Effects of model-based teaching on pre-service physics teachers' conceptions of the moon, moon phases and other lunar phenomems. *International Journal of Science Education*, 29(5), 555-594. // g8, P, AS, MODEL, ES, ASTRO, MOON.
- Oguz, A. (2005). *Surveying American and Turkish Middle School students' existing knowledge of earthquakes by using a systemic network*. The Ohio State University, Ohio. // g6, LITHOS, TECT, EARTHQUA.
- Orion, N., Dubowski, Y. , Dodik, J. (2000). The educational potential of multimedia authoring as a part of the earth science curriculum - a case study. *Journal of Research in Science Teaching*, 37(10), 1121-1153. // g7, MMEDIA, ES, LITHOS, TECT, EARTHQUA.
- Orion, N., & Ault, J. C. R. (2007). Learning earth science. In S. K. Abell & N. G. Lederman (Eds.), *Handbook of research on science education* (pp. 653-687): Lawrence Erlbaum Associates. // g1, g6, g7, ES, OTHERS.
- Orion, N., & Kali, Y. (2005). The Effect of an Earth-Science Learning Program on Students' Scientific Thinking Skills. *Journal of Geoscience Education*, 53(4), 387-393. // g7, LPRO, GEN, LITHOS, GEOL, ROCKS.
- Osborne, J. (1991). Approaches to the teaching of AT16 - the earth in space: issues, problems and resources. *School Science Review*, 72(260), 7-15. // g7, P, AS, ASTRO, LITHOS, GEOL, MINRES.
- Osborne, J., Wadsworth, P. , Black, P. , Meadows, J. (1994). *The earth in space*. Liverpool: Liverpool University Press. // g6, g7, P, AS, ASTRO.
- Ossimitz, G. (2000). *Teaching System Dynamics and Systems Thinking in Austria and Germany*. Paper presented at the System Dynamics Conference, Bergen. // g1, EARTHYSYS, SYSPROP.
- Österlind, K. (2005). Concept formation in environmental education: 14-year olds' work on the intensified greenhouse effect and the depletion of the ozone layer. *International Journal of Science Education*, 27(8), 891-908. // g6, g7, B, ECOLOGY, STS, LPRO, ATMOS, HUMINDATM, GREENHEF, OZON.
- Özdemir, G., & Clark, D. B. (2007). An overview of conceptual change theories. *Eurasia Journal of Mathematics, Science and Technology Education*, 3(4), 351-361. // g1, CC.
- Palmer, J. (1998). Environmental Cognition in Young Children. In S. Scoffham (Ed.), *Primary Sources - Research findings in primary geography*. Sheffield: The Geographical Association. // g6, LITHOS, LAND, GLALAND.
- Palmer, J. A. (1993). From Santa Claus to sustainability: Emergent understanding of concepts and issues in environmental science. *International Journal of Science Education*, 15(5), 487-495. // g6, STS, OTHERS.
- Papadimitriou, V. (2004). Prospective Primary Teachers' Understanding of Climate Change, Greenhouse Effect, and Ozone Layer Depletion. *Journal of Science Education and Technology*, 13(2), 299-307. // g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON.
- Papadimitriou, V., & Londridou, P. (2001). A Cross-Age Study of Pupils' Conceptions Concerning the Movement of Air Masses in the Troposphere. In N. Valanides (Ed.), *Science and Technology Education: Preparing Future Citizens. Proceedings of the 1st IOSTE Symposium in Southern Europe. Vol 1* (pp. 358-368). Paralimni: University of Cyprus. // g6, ATMOS, ELEMCLIM.
- Papadouris, N., Constantinou, C., & Kyratsi, T. (2008). Students' use of the energy model to account for changes in physical systems. *Journal of Research in Science Teaching*, 45(4), 444-469. // g6, E.
- Parker, J., Heywood, D. (1998). The earth and beyond: Developing primary teachers' understanding of basic astronomical events. *International Journal of Science Education*, 20(5), 503-520. // g8, P, AS, ASTRO.
- Pedemonte, G. M., Bezzi, A. (1989). Geology and society in education: A multi-faceted problem calling for broader research prospects. *Paper presented by Gruppo di Ricerca per l'Educazione Geologica, Universita di Genova, Italia*. // g1, LITHOS, GEOL.
- Pena, B. M., Quiles, M. J. P. (2001). The importance of images in astronomy education. *International Journal of Science Education*, 23(11), 1125-1135. // g6, g7, P, AS, ASTRO.
- Pendrill, A.-M. (2008). How do we know, that the Earth spins around its axis? *Physics Education*, 43(2), 158-164. // g7, P, M, ES, ASTRO, ROTEARTH.
- Pereira, M. P., Pestana, M. E. M. (1991). Pupils' representations of models of water. *International Journal of Science Education*, 13(3), 313-319. // g6, P, AT, C, HYDROS.

- Peterson, S., Tytler, R. (2001). Young children's growing understanding of evaporation: Insights from a longitudinal study. In D. Psillos, Kariotoglou, P., Tselfes, V., Bisdikian, G., Fassouloupoulos, G., Hatzikraniotis, E., Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 1* (pp. 92-95). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, P, T, CHSTATE, ATMOS, ELEMCLIM, HYDROS, HYDCYC.
- Philips, W. C. (1991). Earth science misconceptions. *The Science Teacher*, 58(2), 21-23. // g6, ASTRO, LITHOS, ATMOS, HYDROS, KRYOS.
- Pinto, R., Surinach, Santiago. (2000). *Physics Teacher Education Beyond*. // g6, g7, P, AS, M.
- Preece, P. F. (1985). Childrens' ideas about the earth and gravity. In P. F. M. Preece, Clish, D. (Ed.), *The teaching of astronomy. Perspectives 16* (pp. 67-73). Exeter: University of Exeter, School of Education. // g6, P, AS, ASTRO.
- Priemer, B. (2006). Deutschsprachige Verfahren der Erfassung von epistemologischen Überzeugungen. *Zeitschrift für Didaktik der Naturwissenschaften*, 12, 159-175. // g1, OHTERS.
- Proverbio, E., Lai, S. (1989). Spontaneous models and the formalization of the concepts of weather and time at the elementary school level. *International Journal of Science Education*, 11(1), 113-123. // g5, g6, P, ATMOS, WEATHER.
- Pruneau, D., Liboiron, L., Vrain, É., Gravel, H., Bourque, W., & Langis, J. (2001). People's Ideas about Climate Change: A Source of Inspiration for the Creation of Educational Programs. *Canadian Journal of Environmental Education*, 6(Spring), 121-138. // g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Pui-ming Yeung, S., Stanisstreet, M., & Boyes, E. (2004). Air Pollution: The Knowledge and Attitudes of Secondary School Students in Hong Kong *International Research in Geographical and Environmental Education*, 13(1), 21-37. // g6, ATMOS, HUMINDATM, AIRPOL.
- Punter, P., Ochando-Pardo, M., & Garcia, J. (2011). Spanish Secondary School Students' Notions on the Causes and Consequences of Climate Change. *International Journal of Science Education*, 33(3), 447 - 464. //
- Pyle, E. (2008). A model of inquiry for teaching earth science. *Electronic Journal of Science Education*, 12(2). // g7, ES, LITHOS, GEOL, INQUIRY.
- Queiroz, G., Krapas, S. (1993). From the precession of the equinoxes to the gyroscope dynamics: A path through the history. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g3.
- Raia, F. (2005). Students' Understanding of Complex Dynamic Systems. *Journal of Geoscience Education*, 53(3), 297-308. // g6, GC, EARTHSYS, SYSPROP.
- Ralya, L. L., Ralya, L. L. (1940). Some significant concepts and beliefs in astronomy and geology of entering college freshmen and the relation of these to general scholastic aptitude. *School Science and Mathematics*, 40, 727-734. // g6, P, AS, LITHOS, GEOL.
- Rapp, D. N., Culpepper, S. A., Kirkby, K., & Morin, P. (2007). Fostering Students' Comprehension of Topographic Maps. *Journal of Geoscience Education*, 55(1), 5-16. // g6, CARTO.
- Rebich, S., & Gautier, C. (2005). Concept Mapping to Reveal Prior Knowledge and Conceptual Change in a Mock Summit Course on Global Climate Change. *Journal of Geoscience Education*, 53(4), 355-365. // g6, g7, CC, ATMOS, CLIM, CLIMCHANGE.
- Rehm, M. (2006). Allgemeine naturwissenschaftliche Bildung - Entwicklung eines vom Begriff „Verstehen“ ausgehenden Kompetenzmodells. *Zeitschrift für Didaktik der Naturwissenschaften*, 12, 23-44. // g1, C.
- Reinfried, S. (2004). *Can We Achieve Scientific Literacy in Geography Without Understanding Learners' Mental Models?* Paper presented at the IGU-CGE Symposium Expanding Horizons in a Shrinking World 13.-15. August 2004, Glasgow. // g8, HYDROS, GROUNDW.
- Reinfried, S. (2004). Do Curriculum reforms Affect Classroom Teaching in Geography? The case study of Switzerland. *International Research in Geographical and Environmental Education*, 13(3), 239-250. // g1, OTHERS.
- Reinfried, S. (2005). Wie kommt Grundwasser in der Natur vor? – Ein Beitrag zur Praxisforschung über physisch-geographische Alltagsvorstellungen von Studierenden. *Geographie und ihre Didaktik*, 33(3), 133-156. // g6, HYDROS, GROUNDW.
- Reinfried, S. (2006). Alltagsvorstellungen – und wie man sie verändern kann. Das Beispiel Grundwasser. *Geographie heute*, 27(243), 38 - 42. // g1, g6, g7, HYDROS, GROUNDW.

- Reinfried, S. (2006). Conceptual Change in Physical Geography and Environmental Sciences Through Mental Model Building – The Example of Groundwater. *International Research in Geographical and Environmental Education*, 15(1), 41-61. // g7, CC, MN, HYDROS, GROUNDW.
- Reinfried, S. (2006). Grundwasser – begrenzt aber lebensnotwendig. Hintergrundinformationen zum Beitrag „Alltagsvorstellungen – und wie man sie verändern kann“. *Geographie heute*, 27(244). Retrieved from // HYDROS, GROUNDW.
- Reinfried, S. (2007). Alltagsvorstellungen und Lernen im Fach Geographie. *Geographie und Schule*, 29(168), 19-28. // g1, CC, CON, g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, AIRPOL, PEDOS, HYDROS, GROUNDW.
- Reinfried, S. (2007). Welche Unterrichtsstrategien verändern geographische Alltagsvorstellungen nachweislich? Eine empirische Studie zum Conceptual Change am Beispiel subjektiver Theorien über Grundwasser. *Geographie und ihre Didaktik*, 35(1). // g6, g7, GEN, LPRO, HYDROS, GROUNDW.
- Reinfried, S. (2008). Schülervorstellungen und Lernen von Geographie. *Geographie heute*, 29(265), 8-13. // g1, CC, CON.
- Reinfried, S. (2010). Lernen als Vorstellungsänderung: Aspekte der Vorstellungsforschung mit Bezügen zur Geographiedidaktik. In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 1-31). Berlin: Logos. // g1.
- Reinfried, S. (Ed.). (2010). *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion*. Berlin: Logos. // g1, g6, g7, g8.
- Reinfried, S., Aeschbacher, U., Huber, E., & Rottermann, B. (2010). Den Treibhauseffekt zeigen und erklären. In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 123-156). Berlin: Logos. // g7, ATMOS, HUMINDATM, GREENHEF.
- Reinfried, S., & Hug, F. (2008). Von Eisklumpen, Eismeeren und Strömen aus Eis - Gletscherbewegungen sichtbar machen und Schülervorstellungen verändern. *Geographie heute*, 29(265), 40-47. // g6, g7, KRYOS, GLAC.
- Reinfried, S., Rottermann, B., Aeschbacher, U., & Huber, E. (2010). Alltagsvorstellungen über den Treibhauseffekt und die globale Erwärmung verändern - eine Voraussetzung für Bildung für nachhaltige Entwicklung. *Schweizerische Zeitschrift für Bildungswissenschaften*, 32(2), 251-273. // g7, ATMOS, HUMINDATM, GREENHEF.
- Reinfried, S., Rottermann, B., Aeschbacher, U., & Huber, E. (2010). Wirksamkeit einer lernpsychologisch optimierten Lernumgebung auf die Veränderungen von Schülervorstellungen über den Treibhauseffekt und die globale Erwärmung – eine Pilotstudie. *Geographie und ihre Didaktik*, 38(4), 205-226. // g7, ATMOS, HUMINDATM, GREENHEF.
- Reinfried, S., & Schuler, S. (2009). Die Ludwigsburg-Luzerner Bibliographie zur Alltagsvorstellungsforschung in den Geowissenschaften - ein Projekt zur Erfassung der internationalen Forschungsliteratur. *Geographie und ihre Didaktik*(3), 120-135. // g1.
- Reinfried, S., Schuler, S., Aeschbacher, U., & Huber, E. (2008). Der Treibhauseffekt - Folge eines Lochs in der Atmosphäre? Wie sich Schüler ihre Vorstellungen bewusst machen und sie verändern können. *Geographie heute*, 29(265), 24-33. // g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Rempfler, A. (2009). Systemkompetenz: Forschungsstand und Forschungsfragen. *Geographie und ihre Didaktik*, 37(2), 58-79. // g1, OTHERS.
- Rempfler, A. (2010). Fachliche und systemische Alltagsvorstellungen von Schülerinnen und Schülern zum Thema Lawinen. In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 55-85). Berlin: Logos. // g6, SYSPROP, OTHERS.
- Riemeier, T. (2005) Biologie verstehen: Die Zelltheorie. *Beiträge zur Didaktischen Rekonstruktion: Vol. 7*. Didaktisches Zentrum Carl von Ossietzky Universität Oldenburg. // g6, CC, CON, OTHERS.
- Riemeier, T. (2007). Moderater Konstruktivismus. In D. Krüger & H. Vogt (Eds.), *Theorien in der biologiedidaktischen Forschung - Ein Handbuch für Lehramtsstudenten und Doktoranden* (pp. 69-79). Berlin Heidelberg: Springer Verlag. // g1, CON.
- Riggs, E. M. (2005). Field-based education and indigenous knowledge: Essential components of geoscience education for native American communities. *Science Education*, 89(2), 296-313. // g6, ES, METHODS.

- Ritter, M., & Reinfried, S. (2008). Wie entsteht eine Karstlandschaft? - Schülervorstellungen von Dolinen weiterentwickeln. *Geographie heute*, 29(265), 14-19. // g6, g7, LITHOS, LAND, KARST.
- Roald, I., Mikalsen, O. (2001). Configuration and dynamics of the Earth-Sun-Moon system: An investigation into conceptions of deaf and hearing pupils. *International Journal of Science Education*, 23(4), 423-440. // g6, P, AS, ASTRO, SEASON, ROTTEARTH.
- Robertson, M., Walford, R., & Fox, A. (2003). Landscape Meanings and Personal Identities: Some Perspectives of East Anglian Children. *International Research in Geographical and Environmental Education*, 12(1), 32-48. // g6, LITHOS, LAND.
- Robottom, I., Hart, P. (1993). Towards a meta-research agenda in science and environmental education. *International Journal of Science Education*, 15(5), 591-605. // g5, OTHERS.
- Rollnick, M., Rutherford, M. (1990). African primary school teachers - what ideas do they hold on air and air pressure? *International Journal of Science Education*, 12(1), 101-113. // g8,P,M, ATMOS, ELEMCLIM.
- Rondonuwu, F. S., Dulfer, G. H. (1992). Students' conceptions of water waves. *Journal of Science and Mathematics Education in South East Asia*, 15(1), 63-67. // g6,P,M, HYDROS, OCEANS.
- Ross, K. E. K., & Shuell, T. J. (1993). Children's beliefs about earthquakes. *Science Education*, 77(2), 191-205. // g6, LITHOS, TECT, EARTHQUA.
- Roth, W., Tobin, K. (1996). Staging Aristotle and natural observation against Galileo and (stacked) scientific experiment or physics lectures as rhetorical events. *Journal of Research in Science Teaching*, 33(2), 135-157. // g5, g7, g8, P, M.
- Roth, W.-M. (2008). The nature of scientific conceptions: A discursive psychological perspective. *Educational Research Review*, 3(1), 30-50. // g1, SCON, DISCOURSE, CC.
- Roth, W. M. (1995). What happens to a rock when you throw it in the water? Doing high school physics the physicists' way. In D. R. Lavoie (Ed.), *Toward a cognitive-science perspective for scientific problem solving* (pp. 80-111). Manhattan, Kansas: NARST. // g1, g7, P.
- Rule, A. C. (2005). Elementary Students' Ideas Concerning Fossil Fuel Energy. *Journal of Geoscience Education*, 53(3), 309-318. // g6, LITHOS, FOSSILS.
- Rule, A. C. (2007). Preservice Elementary Teachers' Ideas about Clays. *Journal of Geoscience Education*, 55(4), 210-220. // g6, g7, PEDOS, LITHOS, MINRES.
- Russell, T., Harlen, W., Watt, D. (1989). Children's ideas about evaporation. *International Journal of Science Education*, 11, 566-576. // g6, P, M, ATMOS, ELEMCLIM, HYDROS, HYDCYC.
- Russell, T., Watt, D. (1990). *Evaporation and condensation*. Liverpool: Liverpool University Press. // g6, g7, P, T, ATMOS, ELEMCLIM, HYDROS, HYDCYC.
- Russell, T., Bell, D., Longden, K., McGuigan, L. (1993). *Rocks, soil and weather*. Liverpool: Liverpool University Press. // g6, g7, ATMOS, WEATHER, LITHOS, GEOL, ROCKS, PEDOS.
- Rye, J., Rubba, P., Wiesenmayer, R. (1997). An investigation of middle school students' alternative conceptions of global warming. *International Journal of Science Education*, 19(5), 527-551. // g6, STS, ATMOS, CLIM, CLIMCHANGE.
- Rye, J., Rubba, P. (1998). An exploration of the concept maps as an interview tool to facilitate the externalization of students' understandings about global atmospheric change. *Journal of Research in Science Teaching*, 35(5), 521-546. // g5, g6, C, STS, ATMOS, CLIM, CLIMCHANGE.
- Rye, J. A. (1998). Understanding the Role of Chlorofluorocarbons in Global Atmospheric Change. *Journal of Geoscience Education*, 46, 488-496. // g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Sadler, P. M. (1987). Misconceptions in astronomy. In J. Novak (Ed.), *Proceedings of the 2. Int. Seminar "Misconceptions and Educational Strategies in Science and Mathematics"*, Vol. III (pp. 422-425). Ithaca: Cornell University. // g6, g7, P, AS, ASTRO, MOON, ROTTEARTH.
- Salierno, C., Edelson, D., & Sherin, B. (2005). The Development of Student Conceptions of the Earth-Sun Relationship in an Inquiry-Based Curriculum. *Journal of Geoscience Education*, 53(4), 422-431. // g6, g7, LPRO, ASTRO.
- Schieder, M., Wiesner, H. (1996). Vorstellungen und Lernprozesse zum Themenbereich Wetter in der Primarstufe. In H. Behrendt (Ed.), *Zur Didaktik der Physik und Chemie: Probleme und Perspektiven* (pp. 167-169). Alsbach/Bergstrasse: Leuchtturm-Verlag. // g6, LPRO, ATMOS, WEATHER.
- Schilke, K. (1999). Lernvoraussetzungen von Kindern zum Thema Dinosaurier. *Zeitschrift fuer Didaktik der Naturwissenschaften*, 5(2), 3-14. // g6, g7, B, BIODIV, LITHOS, FOSSILS.

- Schleicher, Y. (2003). Mehr Bezug zur Wirklichkeit. Leben in Südostasien: Schülerinteressen, Schülervorstellungen und Online-Exkursionen. *Praxis Geographie*, 33(6), 11-13. // g6, g7, HUMGEO.
- Schmeinck, D. (2007). "Island Pictures" And "Situation Representations" – Children's Everyday Perceptions As A Challenge For Teaching Primary Geography In The 21st Century. In S. Reinfried, Y. Schleicher & A. Rempfler (Eds.), *Geographical Views on Education for Sustainable Development* (Vol. 42, pp. 151-157). Luzern: Selbstverlag des Hochschulverbandes für Geographie und ihre Didaktik e.V. (HGD). // g6, PERCSpace.
- Schmeinck, D. (2008). Mäander, Delta, Durchbruchstal - Alltagskonzepte von Schülern zu Fließgewässern. *Geographie heute*, 29(265), 20-23. // g6, g7, HYDROS, RIVERS, LITHOS, LAND, VALLEYS.
- Schmitz, A. (2006). *Interessen- und Wissensentwicklung bei Schülerinnen und Schülern der Sek II in außerschulischer Lernumgebung am Beispiel von NaT-Working „Meeresforschung“*. Christian-Albrecht-Universität Kiel. // g6, HYDROS, OCEANS, METHODS.
- Schnotz, W. (2006). Conceptual Change. In D. H. Rost (Ed.), *Handwörterbuch Pädagogische Psychologie* (pp. 77-82). Weinheim: Beltz Verlag. // g1, CC.
- Schoon, K. J. (1989). *Misconceptions in the Earth Sciences: A Cross-Age Study*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, San Francisco. // g6, ASTRO, SEASON, ROTEARHT, MOON, LITHOS, TECT, EARTHQUA, HYDROS, RIVERS.
- Schoon, K. J. (1993). The origin of earth and space science misconceptions: A survey of pre-service elementary teachers. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, P, AS, ASTRO.
- Schreiner, C., Henriksen, E. K., & Hansen, P. J. K. (2005). Climate education: Empowering today's youth to meet tomorrow's challenges. *Studies in Science Education*, 41, 3-50. // g1, g7, B, ECOLOGY, STS, ATMOS, CLIM.
- Schuler, S. (2002). Subjektives Wissen über globale Umweltprobleme. Eine Zusammenstellung von Forschungsergebnissen zum Thema globaler Klimawandel. In H. Seybold & W. Rieß (Eds.), *Bildung für eine nachhaltige Entwicklung in der Grundschule. Methodologische und konzeptionelle Ansätze* (pp. 145-158). Schwäbisch Gmünd: PH Schwäbisch Gmünd. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, AIRPOL.
- Schuler, S. (2003). Zur gesellschaftlichen Wahrnehmung des globalen Klimawandels. In D. Burger, M. Meurer & J. Vogt (Eds.), *Studien zur Geographie und Geoökologie* (pp. 133-144). Karlsruhe: Institut für Geographie und Geoökologie, Universität Karlsruhe. // g1, ATMOS, CLIM, CLIMCHANGE.
- Schuler, S. (2004). Alltagstheorien über den globalen Klimawandel. Eine empirische Untersuchung von Schülervorstellungen. *Praxis Geographie* 34(11), 42-43. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, AIRPOL.
- Schuler, S. (2004). Alltagstheorien von Schülerinnen und Schülern zum globalen Klimawandel. In E. Kross (Ed.), *Globales Lernen im Geographieunterricht – Erziehung zu einer nachhaltigen Entwicklung* (pp. 123-145). Nürnberg. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, AIRPOL.
- Schuler, S. (2005). Umweltwissen als Subjektive Theorie. Eine Untersuchung von Schülervorstellungen zum globalen Klimawandel. In M. Schrenk & W. Holl-Giese (Eds.), *Bildung für eine nachhaltige Entwicklung - Ergebnisse empirischer Untersuchungen* (pp. 97-112). Hamburg: Kovac. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, AIRPOL.
- Schuler, S. (2009). Schülervorstellungen zu Bedrohung und Verwundbarkeit durch den globalen Klimawandel. *Geographie und ihre Didaktik*, 37(1), 1-28. // g6, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.
- Schuler, S. (2009). Schülervorstellungen zu Bedrohung und Verwundbarkeit durch den globalen Klimawandel. *Geographie und ihre Didaktik*(1), 1-28. // g6, ATMOS, CLIM, CLIMCHANGE.
- Schuler, S. (2010). Wie entstehen Schülervorstellungen? - Erklärungsansätze und didaktische Konsequenzen am Beispiel des globalen Klimawandels. In S. Reinfried (Ed.), *Schülervorstellungen und geographisches Lernen. Aktuelle Conceptual-Change-Forschung und Stand der theoretischen Diskussion* (pp. 157-188). Berlin: Logos. // g1, g6, g7, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF.

- Schur, Y. (2001). Why can't Julie see the moon? Connections between observation of phenomena and science learning. In D. Psillos, Kariotoglou, P., Tselfes, V., Bisdikian, G., Fassoulopoulos, G., Hatzikraniotis, E., Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 618-620). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, P, AS, ASTRO, MOON.
- Sell, K. S., Herbert, B. E., Stuessy, C. L., & Schielack, J. (2006). Supporting Student Conceptual Model Development of Complex Earth System Through the Use of Multiple Representations and Inquiry. *Journal of Geoscience Education, 54*(3), 396-407. // g7, EARTHSYS, SYSPROP, HYDROS, OCEANS.
- Semken, S., & Butler Freeman, C. (2008). Sense of place in the practice and assessment of place-based science teaching. *Science Education, 92*(6), 1042-1057. // g7, ES, PERCSPACE, LITHOS, GEOL.
- Sharp, J. (1996). Children's astronomical beliefs: A preliminary study of year 6 children in south-west England. *International Journal of Science Education, 18*(6), 685-712. // g6, P, AS, ASTRO.
- Sharp, J. G., Bowker, R., Mooney, C. M., Grace, M., Jeans, R. (1999). Teaching and learning astronomy in primary schools. *School Science Review, 80*(292), 75-86. // g6, P, AS, ASTRO, MOON, ROTEARTH.
- Sharp, J. G., Mackintosh, M. A. P., & Seedhouse, P. (1995). Some comments on children's ideas about Earth structure, volcanoes, earthquakes and plates. *Teaching Earth Sciences, 20*(1), 28-30. // g6, LITHOS, EARTHINT, TECT, VOLC, EARTHQUA, CARTO.
- Shen, J., & Confrey, J. (2007). From conceptual change to transformative modeling: A case study of an elementary teacher in learning astronomy. *Science Education, 91*(6), 948-966. // g8, P, AS, MODEL, AFF, LPRO, CC, ES, ASTRO, MOON.
- Shen, J., & Confrey, J. (2007). From conceptual change to transformative modeling: A case study of an elementary teacher in learning astronomy. *Science Education, 91*(6), 948-966. doi: 10.1002/sce.20224 // g8, g9, ASTRO, MOON.
- Shepardson, D., Niyogi, D., Choi, S., & Charusombat, U. (2011). Students' conceptions about the greenhouse effect, global warming, and climate change. *Climatic Change, 104*(3), 481-507. doi: 10.1007/s10584-009-9786-9 //
- Shepardson, D. P., Harbor, J., & Wee, B. (2005). Water Towers, Pump Houses, and Mountain Streams: Students' Ideas about Watersheds. *Journal of Geoscience Education, 53*(4), 381-386. // g6, HYDROS, HYDCYC.
- Shepardson, D. P., Niyogi, D., Choi, S., & Charusombat, U. (2009). Seventh grade students' conceptions of global warming and climate change. *Environmental Education Research, 15*(5), 549 - 570. // g6, ATMOS, HUMINDATM, GREENHEF.
- Shepardson, D. P., Wee, B., Priddy, M., & Harbor, J. (2007). Students' mental models of the environment. *Journal of Research in Science Teaching, 44*(2), 327-348. // g6, B, ECOLOGY, ES, BIOS.
- Shepardson, D. P., Wee, B., Priddy, M., Schellenberger, L., & Harbor, J. (2007). What is a watershed? Implications of student conceptions for environmental science education and the national science education standards. *Science Education, 91*(4), 554-578. // g7, ES, ECOLOGY, HYDROS, HYDCYC, RIVERS.
- Shepardson, D. P., Wee, B., Priddy, M., Schellenberger, L., & Harbor, J. (2009). Water Transformation and Storage in the Mountains and at the Coast: Midwest students' disconnected conceptions of the hydrologic cycle. *International Journal of Science Education, 31*(11), 1447-1471. // g6, HYDROS, HYDCYC.
- Shipman, H. L., Brickhouse, N.W., Dagher, Z., Letts IV, W.J. (2001). Changes in student views of religion and science in a college astronomy course. *Science Education, 86*(4), 526-547. // g6, CTL, RELIGION.
- Sibley, D. F. (2005). Visual Abilities and Misconceptions About Plate Tectonics. *Journal of Geoscience Education, 53*(4), 471-477. // g6, LITHOS, TECT, PLATEC.
- Sibley, D. F., Anderson, C. W., Heidemann, M., Merrill, J. E., Parker, J. M., & Szymanski, D. W. (2007). Box Diagrams to Assess Students' Systems Thinking about the Rock, Water and Carbon Cycles. *Journal of Geoscience Education, 55*(2), 138-146. // g6, EARTHSYS, SYSPROP, CYCLE, LITHOS, GEOL, ROCKS, HYDROS, HYDCYC.
- Simonneaux, L., Albe, V., Ducamp, C., & Simonneaux, J. (2005). Do high-school students' perceptions of science change when addressed directly by researchers? *Eurasia Journal of Mathematics, Science and Technology Education, 1*(1), 21-40. // g7, CSC.

- Sinatra, G. M., & Mason, L. (2008). Beyond knowledge: Learner characteristics influencing conceptual change. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 560-582). New York: Routledge. // g1, CC, COSC, AFF, CTL.
- Siry, C., Horowitz, G., Otulaja, F. S., Gillespie, N., Shady, A., & Augustin, L. A. (2008). Conceptual change research and science education practice: a response from educators. *Cultural Studies of Science Education*, 3, 451-470. // g1, CC.
- Skamp, K. (1994). Determining misconceptions about astronomy. *Australian Science Teachers Journal*, 40(3), 63-67. // g6, P, AS, ASTRO.
- Skamp, K., Boyes, E., & Stanisstreet, M. (2004). Students' ideas and attitudes about air quality. *Research in Science Education*, 34(3), 313-342. // g6, STS, ATMOS, HUMINDATM, AIRPOL, GREENHEF.
- Smith, J. M., Edwards, P. M., & Raschke, J. (2006). Using Technology and Inquiry to Improve Student Understanding of Watershed Concepts. *Journal of Geography*, 105(6), 249-257. // g6, HYDROS, HYDCYC, RIVERS.
- Sneider, C., Pulos, S. M. (1983). Children's cosmographies: Understanding the earth's shape and gravity. *Science Education*, 67(2), 205-221. // g6, P, M, AS, ASTRO, SHAPEEARTH.
- Sneider, C., Pulos, S. M., Freenor, E., Porter, J., Templeton, B. (1986). Understanding the earth's shape and gravity. *Learning*, 14(6), 43-47. // g7,P,AS, ASTRO, SHAPEEARTH.
- Sneider, C., Ohadi, M. (1998). Unraveling students' misconceptions about the earth's shape and gravity. *Science Education*, 82(2), 265-284. // g7,P,AS, ASTRO, SHAPEEARTH.
- Sommer, C. (2002). Wie Grundschueler sich die Erde im Weltall vorstellen - eine Untersuchung von Schuelervorstellungen. *Zeitschrift fuer Didaktik der Naturwissenschaften*, 8, 69-84. // g6, P, AS, ASTRO, SHAPEEARTH.
- Sommer, C. (2005). *Untersuchung der Systemkompetenz von Grundschülern im Bereich Biologie*. Christian-Albrechts-Universität Kiel. // g6, EARTHYSYS, GEOECO.
- Spellman, G., Field, K., & Sinclair, J. (2003). An Investigation into UK Higher Education Students' Knowledge of Global Climatic Change. *International Research in Geographical and Environmental Education*, 12(1), 6-17. // g6, GEN, ATMOS, CLIM, CLIMCHANGE.
- Spiliotopoulou, V., Ioannidis, G. (1996). Primary teachers' cosmologies: The case of the 'universe'. In G. Welford, Osborne, J., Scott, P. (Ed.), *Research in Science Education in Europe* (pp. 337-350). London: The Falmer Press. // g8, P, AS, ASTRO.
- Spiropoulou, D., Kostopoulos, D., & Jacovides, C. P. (1999). Greek Children's Alternative Conceptions on Weather and Climate. *School Science Review*, 81(294 (Sep 1999)), 55-59. // g6, ATMOS, ELEMCLIM, CLIM, WEATHER.
- Stavridou, H., Marinopoulos, D. (2001). Water and air pollution: Primary students' conceptions about "Itineraries" and interactions of substances. *Chemistry Education: Research and Practice in Education*, 2(1), 31-41. // g7,C,STS, ATMOS, HUMINDATM, AIRPOL, HYDROS.
- Stavy, R., Babai, R., Tsamir, P., Tirosh, D., Lin, F., & McRobbie, C. (2006). Are intuitive rules universal? *International Journal of Science and Mathematics Education*(4), 417-436. // g1, OTHERS.
- Steer, D. N., Knight, C. C., Owens, K. D., & McConnell, D. A. (2005). Challenging Students Ideas About Earth's Interior Structure Using a Model-based, Conceptual Change Approach in a Large Class Setting. *Journal of Geoscience Education*, 53(4), 415-421. // g6, g7, CC, LITHOS, EARTHINT.
- Stepans, J. I., Kuehn, C. (1985). Children's conceptions of weather. *Science and Children*, 22(9), 44-47. // g6, ATMOS, WEATHER.
- Strommen, E. (1995). Lions and tigers and bears, oh my! Children's conceptions of forests and their inhabitants. *Journal of Research in Science Teaching*, 32(7), 683-698. // g6, B, BIODIV.
- Summers, M., Mant, J. (1995). A survey of British primary school teachers' understanding of the earth's place in the universe. *Educational Research*, 37(1), 3-19. // g8,P,AS, ASTRO.
- Summers, M., Kruger, C., Childs, A., & Mant, J. (2000). Primary School Teachers' Understanding of Environmental Issues: an interview study. *Environmental Education Research*, 6(4), 293-312. // g8, EARTHYSYS, CYCLE, ATMOS, CLIM, CLIMCHANGE, HUMINDATM, GREENHEF, OZON, BIOS.
- Symington, D., Biddulph, F., Happs, J. C., Osborne, R. (1982). Learning in Science Project (Primary): Primary school pupils' ideas about rocks. *Working Paper (No.107) of the Science Education Research Unit, University of Waikato, Hamilton N. Z.* // g6, LITHOS, GEOL, ROCKS.
- Taiwo, A. A., Ray, H., Motswiri, M. J., Masene, R. (1999). Perceptions of the water cycle among primary school children in Botswana. *International Journal of Science Education*, 21(4), 413-430. // g6, HYDROS, HYDCYC.

- Thagard, P. (2008). Conceptual change in the history of science: Life, mind, and disease. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 374-387). New York: Routledge. // g3.
- Treagust, D. F., Smith, C. L. (1986). Secondary students understanding of the solar system: implication for curriculum revision. In J. J. Hunt (Ed.), *GIREP conference 1986: Cosmos - an educational challenge. Proceedings of a conference held in Copenhagen, Denmark* (pp. 363-368). Noordwijk, Netherlands: European Space Agency Publications Division. // g6,P,AS, ASTRO.
- Treagust, D. F., Smith, C. L. (1989). Secondary students' understanding of gravity and the motion of planets. *School Science and Mathematics*, 89(5), 380-391. // g6, P, AS, ASTRO.
- Treagust, D. F., & Duit, R. (2008). Conceptual change: a discussion of theoretical, methodological and practical challenges of science education. *Cultural Studies of Science Education*, 3(2), 297-328. // g1, CC.
- Trend, R. (1998). An investigation into understanding of geological time among 10- and 11-year-old children. *International Journal of Science Education*, 20(8), 973-988. // g6, LITHOS, GEOLTIME.
- Trend, R. (2000). Conceptions of geological time among primary teacher trainees, with reference to their engagement with geoscience, history, and science. *International Journal of Science Education*, 22(5), 539-555. // g6, ES, LITHOS, GEOLTIME, GEOL.
- Trend, R. (2004). *How Important is Deep Time?* Paper presented at the Joint Geosciences Assembly (JGA) - Land Use and Environment Changes: Regional and Global Perspectives, Lung-Tan Hsiang, Tao-Yuan Hsien, Taiwan. www.cgu.org.tw/2004jga/dach/paper/07/07-O-01.doc // g6, g8, LITHOS, GEOLTIME.
- Trend, R., Everett, L., & Dove, J. (2000). Interpreting Primary Children's Representations of Mountains and Mountainous Landscapes and Environments. *Research in Science & Technological Education*, 18(1), 85-112. // g6, LITHOS, TECT, OROGEN, LAND.
- Trend, R. D. (2001). Deep time framework: A preliminary study of U.K. primary teachers' conceptions of geological time and perceptions of geoscience. *Journal of Research in Science Education*, 38(2), 191-221. // g6, g7, ES, LITHOS, GEOLTIME, GEOL.
- Trumper, R. (2001). Assessing students' basic astronomy conceptions from Junior High School through university. In D. Psillos, Kariotoglou, P. , Tselfes, V. , Bisdikian, G. , Fassoulopoulos, G. , Hatzikraniotis, E. , Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 668-670). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, P, AS, ASTRO.
- Trumper, R. (2001). Assessing students' basic astronomy conceptions from Junior High School through University. *Australian Science Teachers' Journal*, 47(1), 21-31. // g6, g7, CON, P, AS, ASTRO.
- Trumper, R. (2001). A cross-age study of junior high school students' conceptions of basic astronomy concepts. *International Journal of Science Education*, 23(11), 1111-1123. // g6, P, AS, ASTRO.
- Trumper, R. (2001). University students' conceptions of basic astronomy concepts. In R. Pinto, Surinach, S. (Ed.), *Physics Teacher Education Beyond 2000* (pp. 217-220). Paris: Elsevier. // g6, P, AS, ASTRO.
- Trundle, K. C., Atwood, R. K. , Christopher, J. E. (2002). Preservice elementary teachers' conceptions of moon phases before and after instruction. *Journal of Research in Science Teaching*, 39(7), 633-657. // g7, P, AS, ASTRO, MOON.
- Trundle, K. C., Atwood, R. K., & Christopher, J. E. (2007). Fourth-grade elementary students' conceptions of standards-based lunar concepts. *International Journal of Science Education*, 29(5), 595-616. // g7, P, AS, ES, ASTRO, MOON.
- Trundle, K. C., Atwood, R. K., & Christopher, J. E. (2007). A longitudinal study of conceptual change: Preservice elementary teachers' conceptions of moon phases. *Journal of Research in Science Teaching*, 44(2), 303-326. // g7, g8, P, AS, ES, ASTRO, MOON, CC.
- Truscott, J. B., Boyle, A., Burkill, S., Libarkin, J., & Lonsdale, J. (2006). The concept of time: can it be fully realised and taught? *Planet*(17), 21-23. // g6, g7, LITHOS, GEOLTIME.
- Tsai, C.-C. (2001). Ideas about earthquakes after experiencing a natural disaster in Taiwan: An analysis of students' worldviews. *International Journal of Science Education*, 23(10), 1007-1016. // g6, ES, CSC, LITHOS, TECT, EARTHQUA, WORLDVIEW.
- Tsai, C.-C., & Chang, C.-Y. (2005). Lasting effects of instruction guided by the conflict map: Experimental study of learning about the cause of the seasons. *Journal of Research in Science Teaching*, 42(10), 1089-1111. // g7, P, AS, ASTRO, SEASON.

- Tunnicliffe, S., Lucas, A., Osborne, J. (1997). School visits to zoos and museums: A missed educational opportunity. *International Journal of Science Education*, 19(9), 1039-1056. // g5, g6, B, METHODS.
- Tunnicliffe, S. D. (2000). Conversation of family and primary school groups at robotic dinosaur exhibits in a museum: What do they talk about? *International Journal of Science Education*, 22(7), 739-754. // g6, B, BIODIV, METHODS.
- Tylor, L. (2009). Children constructing Japan: material practices and relational learning. *Children's Geographies*, 7(2), 173-189. doi: 10.1080/14733280902798886 // g6, PERCSPACE, HUMGEO.
- Tytler, R., & Prain, V. (2007). Representation and Learning about Evaporation. In R. Pintó & D. Couse (Eds.), *Contributions from Science Education Research* (pp. 237-248): Springer. // g6, PIAGET, HYDROS.
- Tytler, R., Prain, V., & Peterson, S. (2007). Representational Issues in Students Learning About Evaporation. *Research in Science Education*, 37(3), 313-331. doi: 10.1007/s11165-006-9028-3 // g6, ATMOS, ELEMCLIM.
- Vicentini-Missoni, M. (1981). Earth and gravity: Comparison between adult's and children's knowledge. In W. Jung, P. Fundt, H., Rhoeneck, C. von (Ed.), *Proceedings of the international workshop on "Problems Concerning Students' Representation of Physics and Chemistry Knowledge"* (pp. 234-253). Ludwigsburg: Paedagogische Hochschule. // g6, P, AS, ASTRO.
- Viglietta, M. L. (1986). Earth, sky and motion. Some questions to identify pupils ideas. In J. J. Hunt (Ed.), *GIREP conference 1986: Cosmos - an educational challenge. Proceedings of a conference held in Copenhagen, Denmark* (pp. 369-370). Noordwijk, Netherlands: European Space Agency Publications Division. // g6, P, AS, ASTRO.
- Viiri, J. (1999). Tides in textbooks, expert teachers' ideas and students' understanding. In M. Komorek, Behrendt, H., Dahncke, H., Duit, R., Graeber, W., Kross, A. (Ed.), *Research in Science Education - Past, Present, and Future Vol. 1* (pp. 116-118). Kiel: IPN Kiel. // g6, g7, g8, ASTRO, HYDROS, OCEANS.
- Viiri, J., Saari, H. (2004). Research-based teaching unit on the tides. *International Journal of Science Education*, 26(4), 463-481. // g7, LPRO, P, M, ASTRO, HYDROS, OCEANS.
- Vilches, A., Gil-Prerez, D., Edwards, M. (2001). Science teachers' perceptions of the current situation of planetary emergency. In D. Psillos, Kariotoglou, P., Tselfes, V., Bisdikian, G., Fassoulopoulos, G., Hatzikraniotis, E., Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 683-685). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g8, STS, ASTRO.
- Vilches, A., Gil-Pérez, D., Edwards, M., Praia, J. (2003). Science teachers' perceptions of the current situation of planetary emergency. In D. Psillos, Kariotoglou, P., Tselfes, V., Hatzikraniotis, E., Fassoulopoulos, G., Kallery, M. (Ed.), *Science education research in the knowledge-based society* (pp. 425-432). Dordrecht, The Netherlands: Kluwer Academic Publishers. // g8, ASTRO.
- Vosniadou, S., Brewer, W. F. (1989). *Mental models of the earth: A study of conceptual change in childhood*. University of Illinois: Center for the Study of Reading. // g6, g7, P, AS, ASTRO, SHAPEEARTH.
- Vosniadou, S. (1991). Conceptual development in astronomy. In S. M. Glynn, Yeany, R. H., Britton, B. K. (Ed.), *The psychology of learning science* (pp. 149-177). Hillsdale: Lawrence Erlbaum Associates. // g6, LPRO, P, AS, ASTRO, ROT EARTH, SHAPEEARTH.
- Vosniadou, S. (1991). Designing curricula for conceptual restructuring: Lessons from the study of knowledge acquisition in astronomy. *Journal of Curriculum Studies*, 23(3), 219-237. // g6, g7, P, AS, ASTRO, ROT EARTH, SHAPEEARTH.
- Vosniadou, S. (1992). Fostering conceptual change: The role of computer-based environments. In E. De Corte, Linn, M. C., Mandl, H., Verschaffel, L. (Ed.), *Computer-based learning environments and problem solving* (pp. 149-162). Berlin, Heidelberg: Springer Verlag. // g6, g7, MMEDIA, CC, P, AS, ASTRO, ROT EARTH, SHAPEEARTH.
- Vosniadou, S., Brewer, W. F. (1992). Mental models of the earth: a study of conceptual change in childhood. *Cognitive Psychology*, 24, 535-585. // g3, g6, P, AS, ASTRO, SHAPEEARTH.
- Vosniadou, S. (1992). Modelling the learner: Lessons from the study of knowledge reorganization in astronomy. In A. Tiberghien, Mandl, H. (Ed.), *Intelligent learning environments and knowledge acquisition in physics* (pp. 101-110). Berlin, Heidelberg: Springer Verlag. // g6, g7, CC, P, AS, ROT EARTH, SHAPEEARTH.
- Vosniadou, S., Skopeliti, I., Ikospentaki, K. (2005). Reconsidering the role of artifacts in reasoning: Children's understanding of the globe as a model of the earth. *Learning and Instruction*, 15, 333-351. // g7, P, AS, ASTRO, SHAPEEARTH, CARTO.

- Vosniadou, S. (2007). Conceptual Change and Education. *Human Development*, 50, 47-54. // g1, CC.
- Vosniadou, S., Vamvakoussi, X., & Skopeliti, I. (2008). The framework theory approach to the problem of conceptual change. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 3-34). New York: Routledge. // g1, CC, MM, COSC.
- Vosniadou, S. g. (2008). Conceptual change research: An introduction. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. xiii-xxviii). New York: Routledge // g1, CC.
- Wallin, A., Hagman, M., Olander, C. (2001). Teaching and learning about the biological evolution: Comparing individual interviews and small group methods for investigating students' conceptual understanding. In D. Psillos, Kariotoglou, P., Tselfes, V., Bisdikian, G., Fassouloupoulos, G., Hatzikraniotis, E., Kallery, M. (Ed.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge Based Society, Vol. 2* (pp. 689-691). Thessaloniki, Greece: Aristotle University of Thessaloniki. // g6, g5, B, EVOLUTION.
- Wals, A. E.-J. (1992). Young adolescents' perceptions of environmental issues: Implications for environmental education in urban settings. *Environmental Education*, 8, 45-58. // g6, B, STS, OTHERS.
- Wals, A. E. J. (1994). *Pollution stinks - Young adolescents' perceptions of nature and environmental issues with implications for education in urban settings*. De Lier: Academic Book Center. // g6, g7, B, STS, HUMINDATM, AIRPOL.
- Walshe, N. (2008). Understanding students' conceptions of sustainability. *Environmental Education Research*, 14(5), 537-558. // g5, g6, HUMGEO, OTHERS.
- Wandersee, J. H., Mintzes, J. J., Novak, J. D. (1994). Research on alternative conceptions in science. In D. Gabel (Ed.), *Handbook of research on science teaching and learning* (pp. 177-210). New York: Macmillan. // g1, g5.
- Watts, M., Bentley, D. (1994). Humanizing and feminizing school science: Reviving anthropomorphic and animistic thinking in constructivist Science Education. *International Journal of Science Education*, 16(1), 83-97. // g1, ANTHRO, ANIM, CON, GEN.
- Webb, I., Morrison, I. (2000). The consistency of primary children's conceptions about the Earth and its gravity. *School Science Review*, 81(296), 99-104. // g6, P, AS, GRAV, ASTRO.
- Westra, R. (2005). Systems thinking in ecology education: Modelling ecosystems. In H. E. Fischer (Ed.), *Developing standards in research on science education* (pp. 235-240). London: Taylor & Francis Group. // g7, B, ECOLOGY, EARTHSYS, GEOECO.
- White, R. T., & Gunstone, R. F. (2008). The conceptual change approach and the teaching of science. In S. Vosniadou (Ed.), *International handbook of research on conceptual change* (pp. 619-628). New York: Routledge. // g1, CC, g7.
- Wiegand, P. (1998). Children's Free Recall Sketch Maps of the World on a Spherical Surface. *International Research in Geographical and Environmental Education*, 7(1), 67-83. // g6, PERCSPACE, CARTO.
- Wiesner, H., Stengl, D. (1984). Vorstellungen von Schülern der Primarstufe zu Temperatur und Wärme. *Sachunterricht und Mathematik in der Primarstufe*, 12, 445-452. // g6, OTHERS.
- Wilde, M., Urhahne, D., Klautke, S. (2003). Unterricht im Naturkundemuseum: Untersuchung über das "richtige" Maß an Instruktion. *Zeitschrift für Didaktik der Naturwissenschaften*, 9, 125-134. // g1, CON, g7, B, INFORMAL, METHODS.
- Winnenburg, W. (1993). Sommer und Winter - Schueler erforschen das Phaenomen Jahreszeiten. In H. Behrendt (Ed.), *Zur Didaktik der Physik und Chemie* (pp. 99-101). Alsbach: Leuchtturm. // g7, P, AS, ASTRO, SEASON.
- Wolze, W., Walgenbach, W. (1992). Naturwissenschaftliche Bildung als System-Bildung. In P. Haeussler (Ed.), *Physikunterricht und Menschenbildung* (pp. 163-186). Kiel: IPN. // g1
- Wustmann, K., & Schleicher, Y. (2009). Möglichkeiten der empirischen Unterrichtsforschung in der Lehramtsausbildung. Das Beispiel geographischer Alltagsvorstellungen von Grundschulkindern *Geographie und ihre Didaktik*, 37(2), 80-96. // g6, g9, LITHOS, TECT, GEOMOR, LAND.
- Wustmann, K., & Schleicher, Y. (2009). Möglichkeiten empirischer Unterrichtsforschung in der Lehramtsausbildung: Das Beispiel geographischer Alltagsvorstellungen zur Entstehung des Bodensees. *Geographie und ihre Didaktik*, 37(2), 80-96. // g6, g7, MN, CC, HYDROS, LAKES.
- Yuenyong, C., Jones, A., & Yutakom, N. (2008). A comparison of Thailand and New Zealand students' ideas about energy related to technological and societal issues. *International Journal of Science and Mathematics Education*, 6(2), 293-311. // g6, P, EN, STS, OTHERS.

- Yuenyong, C., Jones, A., & Yutakom, N. (2008). A comparison of Thailand and New Zealand students' ideas about energy related to technological and societal issues. *International Journal of Science and Mathematics Education*(4), 293-311. // g6, OTHERS.
- Zaim-Ildrissi, K., Desautels, J. , Larochelle, M. (1993). "The map is the territory!" The viewpoints of biology students on the theory of evolution. *The Alberta Journal of Educational Research*, 39(1), 59-72. // g6, B, EVOLUTION, BIOS.
- Zee, E. v., Wild, J. , Flanagan, P. (1993). Relation between teacher and student questioning during conversations about the moon. In J. Novak (Ed.), *Proceedings of the Third International Seminar on Misconceptions and Educational Strategies in Science and Mathematics*. Ithaca, New York: Cornell University (distributed electronically). // g6, P, AS, ASTRO, MOON.
- Zeilik, M., Schau, C. , Mattern, N. (1998). Misconceptions and their change in university-level astronomy courses. *The Physics Teacher*, 36(2), 104-107. // g6, g7, LPRO, P, AS, ASTRO, MOON.
- Zeilik, M., Bisard, W. (1999/2000). Conceptual change in introductory-level astronomy courses: Tracking misconceptions to reveal which - and how much - concepts change. *Journal of College Science Teaching*, 29(4), 229-232. // g6, CC, P, AS, ASTRO, MOON, SEASON.