# References


Ainley, J., Pratt, D., & Hansen, A. (2006). Connecting Engagement and Focus in Pedagogic Task Design. *British Educational Research Journal*, *32*(1), 23–38. https://doi.org/10.1080/01411920500401971

Alrø, H., & Skovsmose, O. (2003). *Dialogue and Learning in Mathematics Education: Intention, Reflection, Critique*. Dordrecht: Kluwer.

Aridor, K., & Ben-Zvi, D. (2017). The Co-Emergence of Aggregate and Modelling Reasoning. *Statistics Education Research Journal*, *16*(2), 38–63.

Arnold, P., Confrey, J., Jones, R. S., Lee, H. S., & Pfannkuch, M. (2018). Statistics Learning Trajectories. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 295–326). Cham: Springer.

ASA, GAISE College Report ASA Revision Committee. (2016). *Guidelines for Assessment and Instruction in Statistics Education College Report 2016*. Retrieved from http://www.amstat.org/education/gaise

Bakker, A. (2004). *Design Research in Statistics Education: On Symbolizing and Computer Tools*. Utrecht: CD-β Press.

Bakker, A., & Derry, J. (2011). Lessons from Inferentialism for Statistics Education. *Mathematical Thinking and Learning*, *13*(1-2), 5–26.

Bakker, A., & Gravemeijer, K. P. E. (2004). Learning to Reason About Distribution. In D. Ben-Zvi & J. Garfield (Eds.), *The Challenge of Developing Statistical Literacy, Reasoning and Thinking* (pp. 147–168). Dordrecht: Springer. doi:10.1007/1-4020-2278-6_7

Bakker, A., & Gravemeijer, K. P. E. (2006). An Historical Phenomenology of Mean and Median. *Educational Studies in Mathematics*, *62*(2), 149–168. https://doi.org/10.1007/s10649-006-7099-8

Barwell, R. (2013). The mathematical formatting of climate change: Critical mathematics education and post-normal science. *Research in Mathematics Education*, *15*(1), 1–16. doi:10.1080/14794802.2012.756633

Barzel, B., Prediger, S., Hußmann, S., & Leuders, T. (Eds.). (2017). *Mathewerkstatt*. Berlin: Cornelsen.

Ben-Zvi, D. (2004). Reasoning about variability in comparing distributions. *Statistics Education Research Journal*, *3*(2), 42–63.

Ben-Zvi, D., & Arcavi, A. (2001). Junior high school students' construction of global views of data and data representation. *Educational Studies in Mathematics*, *45*(1/3), 35–65. https://doi.org/10.1023/A:1013809201228

Ben-Zvi, D., Bakker, A., & Makar, K. (2015). Learning to reason from samples. *Educational Studies in Mathematics*, *88*(3), 291–303. https://doi.org/10.1007/s10649-015-9593-3

Ben-Zvi, D., & Makar, K. (Eds.). (2016). *The Teaching and Learning of Statistics: International Perspectives*. Cham: Springer.

Ben-Zvi, D., Gravemeijer, K., & Ainley, J. (2018). Design of Statistics Learning Environments. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 473–502). Cham: Springer.




C. Büscher, *Mathematical Literacy on Statistical Measures*,
Dortmunder Beiträge zur Entwicklung und Erforschung des
Mathematikunterrichts 37, https://doi.org/10.1007/978-3-658-23069-2

Biehler, R., Ben-Zvi, D., Bakker, A., & Makar, K. (2013). Technology for Enhancing Statistical Reasoning at the School Level. In M. A. Clements, A. J. Bishop, C. Keitel, J. Kilpatrick, & F. K. Leung (Eds.), *Springer International Handbooks of Education: Vol. 27. Third International Handbook of Mathematics Education* (pp. 643–689). New York, NY: Springer. doi:10.1007/978-1-4614-4684-2_21

Bishop, A. J. (1988). Mathematics education in its cultural context. *Educational Studies in Mathematics*, *19*(2), 179–191. https://doi.org/10.1007/BF00751231

Bohnsack, R. (2008). The Interpretation of Pictures and the Documentary Method. *Forum Qualitative Social Sciences*, *9*(3). https://doi.org/10.17169/fqs-9.3.1171

Brown, A. L. (1992). Design Experiments: Theoretical and Methodological Challenges in Creating Complex Interventions in Classroom Settings. *Journal of the Learning Sciences*, *2*(2), 141–178. https://doi.org/10.1207/s15327809jls0202_2

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated Cognition and the Culture of Learning. *Educational Researcher*, *18*(1), 32–42.

Burrill, G., & Biehler, R. (2011). Fundamental Statistical Ideas in the School Curriculum and in Training Teachers. In C. Batanero, G. Burrill, & C. Reading (Eds.), *Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education. A Joint ICMI/ IASE Study: The 18th ICMI Study*. Dordrecht: Springer.

Büscher, C. (2015). Was ist normal? – Individuelle Konzepte von Normalität als Fundament für den Vorstellungsaufbau in der Statistik. In F. Caluori, h. Linneweber-Lammerskitten, & C. Streit (Eds.), *Beiträge zum Mathematikunterricht 2015* (pp. 224–227). Münster: WTM.

Büscher, C. (2017). Common Patterns of Thought and Statistics: Accessing Variability Through the Typical. In T. Dooley & G. Gueudet (Eds.), *Proceedings of the Tenth Congress of the European Society for Research in Mathematics Education* (pp. 716–723). Dublin: DCU Institute of Education and ERME.

Büscher, C. (2018, in press). Students' Development of Measures. In G. Burrill & D. Ben-Zvi (Eds.), *Teaching and Learning Statistics: International Perspectives (Volume II)*. Dordrecht: Springer.

Büscher, C. (submitted). *Clumps or Chunks? - Contextual Relevance of Students' Features of the Data*. Paper submitted for presentation at the 42nd Annual Meeting of the International Group for the Psychology of Mathematics Education, Umea, Sweden.

Büscher, C., & Schnell, S. (2017). Students' Emergent Modelling of Statistical Measures - A Case Study. *Statistics Education Research Journal*, *16*(2), 144–162.

Büscher, C., & Prediger, S. (submitted). Students' reflection processes on and about statistical measures: A design research study on potential contributions to mathematical literacy. *Journal für Mathematik-Didaktik*.

Callingham, R., & Watson, J. (2017). The Development of Statistical Literacy at School. *Statistics Education Research Journal*, *16*(1), 181–201.

Common Core Standards Initiative (CCSSI). (2018, January). Mathematics standards. Retrieved from http://www.corestandards.com/Math/

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, *13*(1), 3–21. https://doi.org/10.1007/BF00988593

Chovanetz, C., & Schneider, E. (2008). Einer für alle, alle für einen - Reflektieren über Konzepte und Ideen der Beschreibenden Statistik. *PM - Praxis der Mathematik in der Schule*, *50*(20), 12–18.

Cobb, G. W., & Moore, D. S. (1997). Mathematics, Statistics, and Teaching. *The American Mathematical Monthly*, *104*(9), 801. https://doi.org/10.2307/2975286

Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design Experiments in Educational Research. *Educational Researcher*, *32*(1), 9–13.

de Lange, J. (1997). Using and Applying Mathematics in Education. In A. J. Bishop, K. Clements, C. Keitel, J. Kilpatrick, & C. Laborde (Eds.), *International Handbook of Mathematics Education* (pp. 49–97). Dordrecht: Springer. https://doi.org/10.1007/978-94-009-1465-0_3

del Mas, R. C. (2004). A Comparison of Mathematical and Statistical Reasoning. In D. Ben-Zvi & J. Garfield (Eds.), *The Challenge of Developing Statistical Literacy, Reasoning and Thinking* (pp. 79–95). Dordrecht: Springer. https://doi.org/10.1007/1-4020-2278-6_4

diSessa, A., & Cobb, P. (2004). Ontological Innovation and the Role of Theory in Design Experiments. *The Journal of the Learning Sciences*, *13*(1), 77–103.

Duit, R., Gropengießer, H., Kattmann, U., Komorek, M., & Parchmann, I. (2012). The Model of Educational Reconstruction – a Framework for Improving Teaching and Learning Science1. In D. Jorde & J. Dillon (Eds.), *Science Education Research and Practice in Europe* (pp. 13–37). Rotterdam: Sense.

Engel, J. (2017). Statistical Literacy for Active Citizenship: A Call for Data Science Education. *Statistics Education Research Journal*, *16*(2), 44–49.

Fetterer, F., Knowles, K., Meier, W., & Savoie, M. (2002, updated daily). *Sea ice index, version 1: Arctic sea ice extent*. NSIDC: National Snow and Ice Data Center. http://dx.doi.org/10.7265/N5QJ7F7W

Feyerabend, P. (1978). *Science in a free society*. London: NLB.

Fischbein, E. (1999). Intuitions and Schemata in Mathematical Reasoning. *Educational Studies in Mathematics*, *38*(1/3), 11–50. https://doi.org/10.1023/A:1003488222875

Fischer, R. (1986). Zum Verhältnis von Mathematik und Kommunikation. *mathematica didactica*, *9*(3/4), 119–131.

Fischer, R. (1988). Didactics, Mathematics, and Communication. *For the Learning of Mathematics*, *8*(2), 20–30.

Fischer, R. (1993a). Mathematics as a means and as a system. In S. P. Restivo, J. P. van Bendegem, & R. Fischer (Eds.), *SUNY series in science, technology, and society. Math worlds. Philosophical and social studies of mathematics and mathematics education.* Albany: State University of New York Press

Fischer, R. (1993b). Mathematics and Social Change. In S. P. Restivo, J. P. van Bendegem, & R. Fischer (Eds.), *SUNY series in science, technology, and society. Math worlds. Philosophical and social studies of mathematics and mathematics education.* Albany: State University of New York Press.

Fischer, R. (2001). Höhere Allgemeinbildung. In R. Aulke (Ed.), *Franz-Fischer-Jahrbücher: Vol. 6. Situation - Ursprung der Bildung*. Norderstedt: Fischer.

Fischer, R. (2013). Entscheidungs-Bildung und Mathematik. In M. Rathgeb, M. Helmerich, R. Krömer, K. Lengnink, & G. Nickel (Eds.), *Mathematik im Prozess. Philosophische, Historische und Didaktische Perspektiven* (pp. 335–345). Dordrecht: Springer. https://doi.org/10.1007/978-3-658-02274-7_24

Fischer, R., & Malle, G. (2004). *Mensch und Mathematik: Eine Einführung in didaktisches Denken und Handeln*. München: Profil.

Freudenthal, H. (1973). *Mathematics as an educational task*. Dordrecht: Reidel.

Freudenthal, H. (1983a). *Didactical Phenomenology of Mathematical Structures*. Dordrecht: Reidel.

Freudenthal, H. (1983b). Wie entwickelt sich reflexives Denken? *Neue Sammlung*, *23*(5), 485–497.

Freudenthal, H. (1991). *Revisiting Mathematics Education: China Lectures*. Dordrecht: Kluwer.

Frischemeier, D. (2017). *Statistisch denken und forschen lernen mit der Software TinkerPlots*. Wiesbaden: Springer Spektrum.

Gal, I. (2002). Adults' Statistical Literacy: Meanings, Components, Responsibilities. *International Statistical Review*, *70*(1), 1–25.

Garfield, J., Le, L., Zieffler, A., & Ben-Zvi, D. (2015). Developing students' reasoning about samples and sampling variability as a path to expert statistical thinking. *Educational Studies in Mathematics*, *88*(3), 327–342. https://doi.org/10.1007/s10649-014-9541-7

Glade, M. (2014). *Individuelle Prozesse der fortschreitenden Schematisierung*. Wiesbaden: Springer Spektrum.

Glade, M., & Prediger, S. (2017). Students' individual schematization pathways – empirical reconstructions for the case of part-of-part determination for fractions. *Educational Studies in Mathematics*, *94*(2), 185–203.

Gould, R. (2004). Variability: One statistician's view. *Statistics Education Research Journal*, *3*(2), 7–16.

Gravemeijer, K. (1999). How Emergent Models May Foster the Constitution of Formal Mathematics. *Mathematical Thinking and Learning*, *1*(2), 155–177. https://doi.org/10.1207/s15327833mtl0102_4

Gravemeijer, K., & Cobb, P. (2006). Design Research from the Learning Design Perspective. In J. van den Akker, K. Gravemeijer, S. McKenney, & N. M. Nieveen (Eds.), *Educational Design Research: The design, development and evaluation of programs, processes and products* (pp. 45–85). London: Routledge.

Greeno, J. G. (1998). The Situativity of Knowing, Learning, and Research. *American Psychologist*, *53*(1), 5–26.

Hardy, G. H. (2005). *A Mathematician's Apology*. Alberta: University of Alberta Mathematical Sciences Society. Retrieved from http://www.math.ualberta.ca/mss/

Harradine, A., & Konold, C. (2006). How Representational Medium Affects the Data Displays Students Make. In A. J. Rossman & B. Chance (Eds.), *Working cooperatively in statistics education: Proceedings of the 7th International Conference on the Teaching of Statistics. [CD-ROM]*. Voorburg: International Association for Statistical Education.

Heymann, H. W. (2010). *Why teach mathematics? A focus on general education*. Dordrecht: Kluwer.

Hußmann, S., Thiele, J., Hinz, R., Prediger, S., & Ralle, B. (2013). Gegenstandsorientierte Unterrichtsdesigns entwickeln und erforschen. Fachdidaktische Entwicklungsforschung im Dortmunder Modell. In M. Komorek & S. Prediger (Eds.), *Fachdidaktische Forschungen: Vol. 5. Der lange Weg zum Unterrichtsdesign: Zur Begründung und Umsetzung fachdidaktischer Forschungs- und Entwicklungsprogramme* (pp. 25–42). Münster: Waxmann.

Hußmann, S., & Prediger, S. (2016). Specifying and Structuring Mathematical Topics. *Journal für Mathematik-Didaktik*, *37*(S1), 33–67. https://doi.org/10.1007/s13138-016-0102-8

Jablonka, E., & Gellert, U. (2007). Mathematisation - Demathematisation. In U. Gellert & E. Jablonka (Eds.), *Mathematisation and demathematisation. Social, philosophical and educational ramifications* (pp. 1–18). Rotterdam: Sense.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, *47*(2), 263. https://doi.org/10.2307/1914185

Kattmann, U., & Gropengießer, H. (1996). Modelliierung der didaktischen Rekonstruktion. In R. Duit & C. v. Rhöneck (Eds.), *IPN: Vol. 151. Lernen in den Naturwissenschaften. Beiträge zu einem Workshop an der Pädagogischen Hochschule Ludwigsburg* (pp. 180–204). Kiel: Institut für die Pädagogik der Naturwissenschaften an der Universität Kiel.

Kattmann, U., Duit, R., Gropengießer, H., & Komorek, M. (1997). Das Modell der Didaktischen Rekonstruktion - ein Rahmen für naturwissenschaftsdidaktische Forschung und Entwicklung. *Zeitschrift für Didaktik der Naturwissenschaften*, *3*(3), 3–18.

Klieme, E., Avenarius, H., Blum, W., Döbrich, P., Gruber, H., Prenzel, M.,. . . Vollmer, H. J. (2007). *Zur Entwicklung nationaler Bildungsstandards*. Bonn, Berlin: Bundesministerium für Bildung und Forschung (BMBF).

Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland (KMK). (2004). *Bildungsstandards im Fach Mathematik für den Mittleren Schulabschluss*. München: Kluwer.

Konold, C., & Pollatsek, A. (2002). Data Analysis as the Search for Signals in Noisy Processes. *Journal for Research in Mathematics Education, 33(4)*, 259. https://doi.org/10.2307/749741

Konold, C., Robinson, A., Khalil, K., Pollatsek, A., Well, A., Wing, R., & Mayr, S. (2002). Students' Use of Modal Clumps to Summarize Data. In B. Phillips (Ed.), *Proceedings of the Sixth International Conference on Teaching Statistics: Developing a statistically literate society. [CD-ROM]*. Voorburg, The Netherlands: International Statistical Institute.

Konold, C., & Miller, C. D. (2011). *Tinkerplots: Dynamic Data exploration*. Emeryville, CA: Key Curriculum Press.

Konold, C., Higgins, T., Russell, S. J., & Khalil, K. (2015). Data seen through Different Lenses. *Educational Studies in Mathematics, 88(3)*, 305–325. https://doi.org/10.1007/s10649-013-9529-8

Kröpfl, B. (2007). *Höhere mathematische Allgemeinbildung am Beispiel von Funktionen*. München, Wien: Profil.

Kröpfl, B., Peschek, W., & Schneider, E. (2000). Stochastik in der Schule: Globale Ideen, lokale Bedeutungen, zentrale Tätigkeiten. *mathematica didactica*, *23*(2), 25–27.

Jungwirth, H., & Krummheuer, G. (Eds.). (2006). *Der Blick nach innen: Aspekte der alltäglichen Lebenswelt Mathematikunterricht*. Münster: Waxmann.

Lakatos, I. (1976). *Proofs and refutations: The logic of mathematical discovery*. Cambridge: Cambridge University Press.

Leavy, A. M., & Middleton, J. A. (2011). Elementary and middle grade students' constructions of typicality. *The Journal of Mathematical Behavior*, *30*(3), 235–254.

Lehrer, R., & English, L. D. (2018). Introducing Children to Modeling Variability. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 229–260). Cham: Springer.

Lengnink, K. (2010). Vorstellungen bilden: Zwischen Lebenswelt und Mathematik. In T. Leuders, L. Hefendehl-Hebeker, & H.-G. Weigand (Eds.), *Mathemagische Momente* (pp. 120–129). Berlin: Cornelsen.

Lengnink, K. (2013). Prozesse beim Mathematiklernen initiieren und begleiten - vom Wert des Intersubjektiven. In M. Rathgeb, M. Helmerich, R. Krömer, K. Lengnink, & G. Nickel (Eds.), *Mathematik im Prozess: Philosophische, Historische und Didaktische Perspektiven* (pp. 211–223). Dordrecht: Springer.

Lengnink, K., & Peschek, W. (2001). Das Verhältnis von Alltagsdenken und mathematischem Denken als Inhalt mathematischer Bildung. In K. Lengnink, S. Prediger, & F. Siebel (Eds.), *Darmstädter Schriften zur allgemeinen Wissenschaft: Vol. 2. Mathematik und Mensch. Sichtweisen der allgemeinen Mathematik* (pp. 65–82). Mühltal: Verlag Allgemeine Wissenschaft.

Mac Lane, S. (1986). *Mathematics Form and Function*. New York, NY: Springer

Makar, K. (2014). Young children's explorations of average through informal inferential reasoning. *Educational Studies in Mathematics*, *86*(1), 61–78. New York, NY: Springer.

Makar, K. (2016). Developing Young Children's Emergent Inferential Practices in Statistics. *Mathematical Thinking and Learning*, *18*(1), 1–24.

Makar, K., & Confrey, J. (2003). Clumps, chunks, and spread out: Secondary preservice teachers' reasoning about variation. In C. Lee (Ed.), *Proceedings of the Third International Research Forum on Statistical Reasoning, Thinking, and Literacy (SRTL-3).*

Makar, K., & Confrey, J. (2005). Variation talk: Articulating meaning in statistics. *Statistics Education Research Journal*, *4*(1), 27–54.

Makar, K., & Rubin, A. (2009). A Framework for Thinking about Informal Statistical Inference. *Statistics Education Research Journal*, *8*(1), 82–105.

Makar, K., Bakker, A., & Ben-Zvi, D. (2011). The Reasoning Behind Informal Statistical Inference. *Mathematical Thinking and Learning*, *13*(1-2), 152–173.

Makar, K., & Rubin, A. (2018). Learning About Statistical Inference. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 261–294). Cham: Springer.

Mayring, P. (2000). Qualitative content analysis. *Forum Qualitative Social Sciences*, *1*(2). Retrieved from http://www.qualitative-research.net/index.php/fqs/issue/view/28

Mokros, J., & Russell, S. J. (1995). Children's Concepts of Average and Representativeness. *Journal for Research in Mathematics Education*, *26*(1), 20. https://doi.org/10.2307/749226

Moore, D. (1990). Uncertainty. In L. A. Steen (Ed.), *On the Shoulders of Giants: New Approaches to Numeracy* (pp. 95–137).

Niss, M., & Jablonka, E. (2014). Mathematical Literacy. In S. Lerman (Ed.), *Encyclopedia of Mathematics Education* (pp. 391–396). Dordrecht: Springer. https://doi.org/10.1007/978-94-007-4978-8_100

Noss, R., & Hoyles, C. (1992). Looking back and looking forward. In C. Hoyles & R. Noss (Eds.), *Learning mathematics and Logo* (pp. 431–468). Cambridge, Mass.: The MIT Press.

Noss, R., Healy, L., & Hoyles, C. (1996). The Construction of Mathematical Meanings: Connecting the Visual with the Symbolic. *Educational Studies in Mathematics*, *33*(2), 203–233. https://doi.org/10.1023/A:1002943821419

Noss, R., Hoyles, C., & Pozzi, S. (2002). Abstraction in Expertise: A Study of Nurses' Conceptions of Concentration. *Journal for Research in Mathematics Education*, *33*(3), 204. https://doi.org/10.2307/749725

Organisation for Economic Cooperation and Development (OECD) (2017). PISA 2015 Mathematics Framework. In *PISA 2015 Assessment and Analytical Framework: Science, Reading, Mathematic and Financial Literacy*. Paris: OECD.

Paparistodemou, E., & Meletiou-Mavrotheris, M. (2008). Developing young students' informal inference skills in data analysis. *Statistics Education Research Journal*, *7*(2), 83–106.

Peschek, W., Prediger, S., & Schneider, E. (2008). Reflektieren und Reflexionswissen im Mathematikunterricht. *PM - Praxis der Mathematik in der Schule*, *50*(20), 1–6.

Petocz, P., Reid, A., & Gal, I. (2018). Statistics Education Research. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 71–99). Cham: Springer.

Pfannkuch, M. (2011). The Role of Context in Developing Informal Statistical Inferential Reasoning: A Classroom Study. *Mathematical Thinking and Learning*, *13*(1-2), 27–46.

Pfannkuch, M., Arnold, P., & Wild, C. J. (2015). What I See is not Quite the Way it Really is: Students' Emergent Reasoning about Sampling Variability. *Educ Stud Math*, *88*, 343–360.

Pfannkuch, M., Budgett, S., & Arnold, P. (2015). Experiment-to-causation inference: Understanding causality in a probabilistic setting. In A. Zieffler & E. Fry (Eds.), *Reasoning about uncertainty: Learning and teaching informal inferential reasoning* (pp. 95–127). Minneapolis, Minnesota: Catalyst.

Plomp, T., & Nieveen, N. (Eds.). (2013). *Educational Design Research - Part A: An Introduction*. Enschede: SLO.

Polya, G. (1945). *How to Solve It: A New Aspect of Mathematical Method*. *Princeton science library*. Princeton: Princeton University Press.

Porter, T. M. (1995). *Trust in numbers: The pursuit of objectivity in science and public life*. Princeton, N.J.: Princeton University Press.

Pratt, D., & Noss, R. (2002). The Microevolution of Mathematical Knowledge: The Case of Randomness. *Journal of the Learning Sciences*, *11*(4), 453–488. https://doi.org/10.1207/S15327809JLS1104_2

Pratt, D., & Noss, R. (2010). Designing for Mathematical Abstraction. *International Journal of Computers for Mathematical Learning*, *15*(2), 81–97.

Pratt, D., & Kazak, S. (2018). Research on Uncertainty. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 193–227). Cham: Springer.

Prediger, S. (2004). *Mathematiklernen als interkulturelles Lernen. Mathematikphilosophische, deskriptive, und präskriptive Betrachtungen* (Habilitationsschrift). Universität Klagenfurt.

Prediger, S. (2005a). „Auch will ich Lernprozesse beobachten, um besser Mathematik zu verstehen.“ - Didaktische Rekonstruktion als mathematikdidaktischer Forschungsansatz zur Restrukturierung von Mathematik. *mathematica didactica*, *28*(2), 23–47.

Prediger, S. (2005b). Developing reflectiveness in mathematics classrooms— An aim to be reached in several ways. *ZDM*, *37*(3), 250–257.

Prediger, S. (2008). Do You Want Me to Do It with Probability or with My Normal Thinking? Horizontal and Vertical Views on the Formation of Stochastic Conceptions. *IEJME-Mathematics Education*, *3*(3), 126–154.

Prediger, S. (2015). Theorien und Theoriebildung in didiaktischer Forschung und Entwicklung. In R. Bruder, L. Hefendehl-Hebeker, B. Schmidt-Thieme, & H.-G. Weigand (Eds.), *Handbuch der Mathematikdidaktik.* Berlin: Springer.

Prediger, S., Link, M., Hinz, R., Hußmann, S., Thiele, J., & Ralle, B. (2012). Lehr-Lernprozesse initiieren und erforschen–fachdidaktische Entwicklungsforschung im Dortmunder Modell. *Mathematischer und Naturwissenschaftlicher Unterricht*, *65*(8), 452–457.

Prediger, S., & Zwetzschler, L. (2013). Topic-specific Design Research with a Focus on Learning Processes: The Case of Understanding Algebraic Equivalence in Grade 8. In T. Plomp & N. Nieveen (Eds.), *Educational Design Research – Part A: An Introduction* (pp. 409–423). Enschede: SLO.

Prediger, S., & Schnell, S. (2014). Investigating the Dynamics of Stochastic Learning Processes: A Didactical Research Perspective, Its Methodological and Theoretical Framework, Illustrated for the Case of the Short Term–Long Term Distinction. In E. J. Chernoff & B. Sriraman (Eds.), *Advances in mathematics education. Probabilistic thinking: Presenting plural perspectives* (pp. 533–558). Dordrecht: Springer.

Prediger, S., Gravemeijer, K., & Confrey, J. (2015). Design Research with a Focus on Learning Processes: An Overview on Achievements and Challenges. *ZDM*, *47*(6), 877–891. https://doi.org/10.1007/s11858-015-0722-3

Prediger, S., Schnell, S., & Rösike, K.-A. (2016). Design Research with a focus on content-specific professionalization processes: The case of noticing students' potentials. In S. Zehetmeier, B. Rösken-Winter, D. Potari, & M. Ribeiro (Eds.), *Proceedings of the Third ERME Topic Conference on Mathematics Teaching, Resources and Teacher Professional Development* (pp. 96–105). Berlin: Humboldt-Universität zu Berlin / HAL.

Prediger, S., Leuders, T., & Rösken-Winter, B. (2017). Drei-Tetraeder-Modell der gegenstandsbezogenen Professionalisierungsforschung: Fachspezifische Verknüpfung von Design und Forschung. *Jahrbuch der allgemeinen Didaktik*, *2017*, 159–177.

Prediger, S., & Zindel, C. (2017). School Academic Language Demands for Understanding Functional Relationships: A Design Research Project on the Role of Language in Reading and Learning. *EURASIA Journal of Mathematics, Science and Technology Education*, *13*(7b), 4157–4188.

Quetelet, L.-A.-J. (1994). A Treatise on Man and the Development of His Faculties. *Obesity Research*, *2*(1), 72–85. https://doi.org/10.1002/j.1550-8528.1994.tb00047.x

Reading, C., & Shaughnessy, J. M. (2004). Reasoning About Variation. In D. Ben-Zvi & J. Garfield (Eds.), *The Challenge of Developing Statistical Literacy, Reasoning and Thinking* (pp. 201–226). Dordrecht: Springer. https://doi.org/10.1007/1-4020-2278-6_9

Riemeier, T., & Gropengießer, H. (2008). On the Roots of Difficulties in Learning about Cell Division: Process-based analysis of students' conceptual development in teaching experiments. *International Journal of Science Education*, *30*(7), 923–939.

Schnell, S. (2013). *Muster und Variabilität erkunden: Konstruktionsprozesse kontextspezifischer Vorstellungen zum Phänomen Zufall*. Zugl.: Dortmund, Technisch Univ., Dissertation, 2013. *Dortmunder Beiträge zur Entwicklung und Erforschung des Mathematikunterrichts: Vol. 14*. Wiesbaden: Springer Spektrum.

Schnell, S., & Büscher, C. (2015). Individual Concepts of Students Comparing Distribution. In K. Krainer & N. Vondrová (Eds.), *Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education* (pp. 754–760). Prague, Czech Republic: Charles University in Prague, Faculty of Education and ERME.

Schumacher, S. (2017). *Lehrerprofessionswissen im Kontext beschreibender Statistik*. Wiesbaden: Springer Spektrum.

Sfard, A. (2008). *Thinking as Communicating*. Cambridge: Cambridge University Press.

Shaugnessy, M. J. (2007). Research on Statistics Learning and Reasoning. In F. K. Lester (Ed.), *Second handbook of research on mathematics teaching and learning* (pp. 957–1009). Charlotte, NC: Information Age.

Skovsmose, O. (1994). *Towards a Philosophy of Critical Mathematics Education*. *Mathematics education library: Vol. 15*. Dordrecht: Kluwer.

Skovsmose, O. (1998). Linking Mathematics Education and Democracy: Citizenship, Mathematical Archaeology, Mathemacy and Deliberative Interaction. *Zentralblatt für Didaktik der Mathematik (ZDM)*, *30*(6), 195–203.

Skovsmose, O. (2005). Travelling through education: Uncertainty, mathematics, responsibility. Rotterdam: Sense.

Skovsmose, O. (2012). Symbolic Power, Robotting, and Surveilling. *Educational Studies in Mathematics*, *80*(1-2), 119–132.

Stroeve, J., & Shuman, C. (2004). *Historical Arctic and Antarctic Surface Observational Data*, Version 1. NSIDC: National Snow and Ice Data Center. https://doi.org/10.5067/4din375awfio

Tukey, J. W. (1977). *Exploratory data analysis*. *Addison-Wesley series in behavioral science*. Reading, Mass.: Addison-Wesley.

van den Akker, J. (1999). Principles and Methods of Development Research. In J. van den Akker, R. M. Branch, K. Gustafson, N. Nieveen, & T. Plomp (Eds.), *Design Approaches and Tools in Education and Training* (pp. 1–14). Dordrecht: Springer.

van den Akker, J. J. H., Gravemeijer, K., McKenny, S., & Nieven, N. (Eds.). (2011). *Educational design research*. London: Routledge.

van den Heuvel-Panhuizen, M. (2003). The Didactical Use of Models in Realistic Mathematics Education: An Example from a Longitudinal Trajectory on Percentage. *Educ Stud Math*, *54*, 9–35.

van den Heuvel-Panhuizen, M. (2001). Realistic mathematics education in the Netherlands. In J. Anghileri (Ed.), *Principles and practices in arithmetic teaching. Innovative approaches for the primary classroom* (pp. 49–63). Buckingham: Open University Press.

Vergnaud, G. (1996). The Theory of Conceptual Fields. In L. P. Steffe (Ed.), *Theories of mathematical learning* (pp. 219–239). Mahwah, N.J.: Erlbaum.

Vergnaud, G. (1998). A Comprehensive Theory of Representation for Mathematics Education. *Journal of Mathematical Behavior*, *17*(2), 167–181.

Vergnaud, G. (2009). The Theory of Conceptual Fields. *Human Development*, *52*, 83–94.

Wagenschein, M. (2010). *Verstehen lehren: Genetisch, sokratisch, exemplarisch* (5. Aufl.). *Beltz-Taschenbuch: Vol. 22*. Weinheim: Beltz.

Watson, J. M. (2007). The Role of Cognitive Conflict in Developing Students' Understanding of Average. *Educational Studies in Mathematics*, *65*(1), 21–47.

Watson, J., Fitzallen, N., Fielding-Wells, J., & Madden, S. (2018). The Practice of Statistics. In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 105–137). Cham: Springer.

White, P., & Gorard, S. (2017). Against inferential statistics: How and why current statistics teaching gets it wrong. *Statistics Education Research Journal*, *16*(1), 55–65.

Wild, C. J. (2006). The concept of distribution. *Statistics Education Research Journal*, *5*(2), 10–26.

Wild, C. J., & Pfannkuch, M. (1999). Statistical Thinking in Empirical Enquiry. *International Statistical Review*, *67*(3), 223–248.

Wild, C. J., Utts, J. M., & Horton, N. J. (2018). What is Statistics? In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 5–36). Cham: Springer.

Wille, R. (1981). Versuche der Restrukturierung von Mathematik am Beispiel der Grundvorlesung „Lineare Algebra“. In B. Artmann (Ed.), *Beiträge zum Mathematikunterricht* (pp. 102-112). Hannover: Schroedel.

Wille, R. (1988). Allgemeine Wissenschaft als Wissenschaft für die Allgemeinheit. In H. Böhme & H.-J. Gamm (Eds.), *Verantwortung in der Wissenschaft* (pp. 159-176). Darmstadt: Technische Hochschule. Reprint in Conceptus – Zeitschrift für Philosophie, 60 (1989), 117-128.

Wille, R. (1995). „Allgemeine Mathematik“ als Bildungskonzept für die Schule. In R. Biehler (Ed.), *Mathematik allgemeinbildend unterrichten. Impulse für Lehrerbildung und Schule* (2nd ed., Vol. 21, pp. 41–55). Köln: Aulis.

Wille, R. (2000). Bildung und Mathematik. *Mathematische Semesterberichte*, *47*, 11–25.

Wille, R. (2008). Generalistic mathematics as mathematics for the general public. In G. Dorfer (Ed.), *Contributions to general algebra: Vol. 18. Proceedings of the 73th Workshop on General Algebra. "73. Arbeitstagung Allgemeine Algebra" ; 22nd Conference of Young Algebraists, Alps-Adriatic-University of Klagenfurt, February 1 - 4, 2007* (pp. 211–225). Klagenfurt: Heyn.

Winter, H. (1981). Der didaktische Stellenwert des Sachrechnens im Mathematikunterricht der Grund- und Hauptschule. *Paed. Welt*, *35*(11), 666–674.

Winter, H. (1996). Mathematikunterricht und Allgemeinbildung. *Mitteilungen der Deutschen Mathematiker-Vereinigung*, *4*(2), 35-41. https://doi.org/10.1515/dmvm-1996-0214

Wittgenstein, L. (1953/2008). *Philosophische Untersuchungen*. Frankfurt am Main: Suhrkamp.

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, *17*(2), 89–100. https://doi.org/10.1111/j.1469-7610.1976.tb00381.x

Zieffler, A., Garfield, J., Delmas, R., & Reading, C. (2008). A framework to support research on informal inferential reasoning. *Statistics Education Research Journal*, *7*(2), 40–58.

Zieffler, A., Garfield, J., & Fry, E. (2018). What is Statistics Education? In D. Ben-Zvi, K. Makar, & J. Garfield (Eds.), *International Handbook of Research in Statistics Education* (pp. 37–70). Cham: Springer.

Ziliak, S. T., & McCloskey, D. N. (2009). *The cult of statistical significance: How the standard error costs us jobs, justice, and lives*. Ann Arbor, Mich.: Univ. of Michigan Press.

Zwetzschler, L. (2015). *Gleichwertigkeit von Termen*. Wiesbaden: Springer Spektrum.