

BIBLIOGRAPHY

- Aberdein, A. (2005). The uses of argument in mathematics. *Argumentation*, 19, 287–301.
- Ainsworth, S. (2008). The educational value of multiple-representations when learning complex scientific concepts. In J. K. Gilbert, M. Reiner, & M. Nakhleh (Eds.), *Visualization: Theory and practice in science education* (pp. 191–208). New York: Springer.
- Ainsworth, S., & Burcham, S. (2007). The impact of text coherence on learning by self-explanation. *Learning and Instruction*, 17, 286–303.
- Alcock, L. (2010). Mathematicians' perspectives on the teaching and learning of proof. In F. Hitt, D. Holton, & P. W. Thompson (Eds.), *Research in Collegiate Mathematics Education VII* (pp. 63–92). Washington DC: MAA.
- Alcock, L. (2013a). *How to study as a mathematics major*. Oxford: Oxford University Press.
- Alcock, L. (2013b). *How to study for a mathematics degree*. Oxford: Oxford University Press.
- Alcock, L., Attridge, N., Kenny, S., & Inglis, M. (2014). Achievement and behaviour in undergraduate mathematics: Personality is a better predictor than gender. *Research in Mathematics Education*, 16, 1–17.
- Alcock, L., & Inglis, M. (2008). Doctoral students' use of examples in evaluating and proving conjectures. *Educational Studies in Mathematics*, 69, 111–29.
- Alcock, L., & Inglis, M. (2010). Representation systems and undergraduate proof production: A comment on Weber. *Journal of Mathematical Behavior*, 28, 209–11.
- Alcock, L., & Simpson, A. (2001). The Warwick analysis project: Practice and theory. In D. Holton (Ed.), *The teaching and learning of mathematics at the undergraduate level* (pp. 99–112). Dordrecht: Kluwer.
- Alcock, L., & Simpson, A. (2002). Definitions: Dealing with categories mathematically. *For the Learning of Mathematics*, 22(2), 28–34.

- Alcock, L., & Simpson, A. (2004). Convergence of sequences and series: Interactions between visual reasoning and the learner's beliefs about their own role. *Educational Studies in Mathematics*, 57, 1–32.
- Alcock, L., & Simpson, A. (2005). Convergence of sequences and series 2: Interactions between nonvisual reasoning and the learner's beliefs about their own role. *Educational Studies in Mathematics*, 58, 77–100.
- Alcock, L., & Simpson, A. (2011). Classification and concept consistency. *Canadian Journal of Science, Mathematics and Technology Education*, 11, 91–106.
- Alcock, L., & Weber, K. (2005). Proof validation in real analysis: Inferring and checking warrants. *Journal of Mathematical Behavior*, 24, 125–34.
- Alcock, L., & Weber, K. (2010). Referential and syntactic approaches to proving: Case studies from a transition-to-proof course. In F. Hitt, D. Holton, & P. W. Thompson (Eds.), *Research in Collegiate Mathematics Education VII* (pp. 93–114). Washington, DC: MAA.
- Almeida, D. (1995). Mathematics undergraduates' perceptions of proof. *Teaching Mathematics and its Applications*, 14, 171–7.
- Antonini, S. (2011). Generating examples: Focus on processes. *ZDM: The International Journal on Mathematics Education*, 43, 205–17.
- Arcavi, A. (2003). The role of visual representations in the learning of mathematics. *Educational Studies in Mathematics*, 52, 215–41.
- Artigue, M. (1991). Analysis. In D. O. Tall (Ed.), *Advanced mathematical thinking* (pp. 167–98). Dordrecht: Kluwer.
- Attridge, N., & Inglis, M. (2013). Advanced mathematical study and the development of conditional reasoning skills. *PLoS ONE*, 8, e69399.
- Barbé, J., Bosch, M., Espinoza, L., & Gascón, J. (2005). Didactic restrictions on the teacher's practice: The case of limits of functions in Spanish high schools. *Educational Studies in Mathematics*, 59, 235–68.
- Bardelle, C., & Ferrari, P. L. (2011). Definitions and examples in elementary calculus: The case of monotonicity of functions. *ZDM: The International Journal on Mathematics Education*, 43, 233–46.
- Bergé, A. (2008). The completeness property of the set of real numbers in the transition from calculus to analysis. *Educational Studies in Mathematics*, 67, 217–35.
- Bergqvist, E. (2007). Types of reasoning required in university exams in mathematics. *Journal of Mathematical Behavior*, 26, 348–70.

- Bergsten, C. (2008). On the influence of theory on research in mathematics education: The case of teaching and learning limits of functions. *ZDM: The International Journal on Mathematics Education*, 40, 189–99.
- Bielaczyc, K., Pirolli, P. L., & Brown, A. L. (1995). Training in self-explanation and self-regulation strategies: Investigating the effects of knowledge acquisition activities on problem solving. *Cognition and Instruction*, 13, 221–52.
- Biza, I., Christou, C., & Zachariades, T. (2008). Student perspectives on the relationship between a curve and its tangent in the transition from Euclidean geometry to analysis. *Research in Mathematics Education*, 10, 53–70.
- Biza, I., & Zachariades, T. (2010). First year mathematics undergraduates' settled images of tangent line. *Journal of Mathematical Behavior*, 29, 218–29.
- Bremigan, E. G. (2005). An analysis of diagram modification and construction in students' solutions to applied calculus problems. *Journal for Research in Mathematics Education*, 36, 248–77.
- Brown, J. R. (1999). *Philosophy of mathematics: An introduction to the world of proofs and pictures*. New York: Routledge.
- Buchbinder, O., & Zaslavsky, O. (2011). Is this a coincidence? The role of examples in fostering a need for proof. *ZDM: The International Journal on Mathematics Education*, 43, 269–81.
- Burn, R. P. (1992). *Numbers and functions: Steps into analysis*. Cambridge: Cambridge University Press.
- Chater, N., Heit, E., & Oaksford, M. (2005). Reasoning. In K. Lamberts & R. Goldstone (Eds.), *Handbook of cognition* (pp. 297–320). London: Sage.
- Chi, M. T. H., Bassok, M., Lewis, M. W., Reimann, P., & Glaser, R. (1989). Self-explanations: How students study and use examples in learning to solve problems. *Cognitive Science*, 13, 145–82.
- Chi, M. T. H., de Leeuw, N., Chi, M.-H., & LaVancher, C. (1994). Eliciting self-explanations improves understanding. *Cognitive Science*, 18, 439–77.
- Conradie, J., & Frith, J. (2000). Comprehension tests in mathematics. *Educational Studies in Mathematics*, 42, 225–35.
- Copes, L. (1982). The Perry development scheme: A metaphor for learning and teaching mathematics. *For the Learning of Mathematics*, 3(1), 38–44.
- Cornu, B. (1991). Limits. In D. O. Tall (Ed.), *Advanced mathematical thinking* (pp. 153–66). Dordrecht: Kluwer.

- Cowen, C. (1991). Teaching and testing mathematics reading. *American Mathematical Monthly*, 98, 50–53.
- Crawford, K., Gordon, S., Nicholas, J., & Prosser, M. (1994). Conceptions of mathematics and how it is learned: The perspectives of students entering university. *Learning and Instruction*, 4, 331–45.
- Crawford, K., Gordon, S., Nicholas, J., & Prosser, M. (1998a). Qualitatively different experiences of learning mathematics at university. *Learning and Instruction*, 8, 455–68.
- Crawford, K., Gordon, S., Nicholas, J., & Prosser, M. (1998b). University mathematics students' conceptions of mathematics. *Studies in Higher Education*, 23, 87–94.
- Dahlberg, R. P., & Housman, D. L. (1997). Facilitating learning events through example generation. *Educational Studies in Mathematics*, 33, 283–99.
- Davis, R. B., & Vinner, S. (1986). The notion of limit: Some seemingly unavoidable misconception stages. *Journal of Mathematical Behavior*, 5, 281–303.
- Dawkins, P. C. (2014). How students interpret and enact inquiry-oriented defining practices in undergraduate real analysis. *Journal of Mathematical Behavior*, 33, 88–105.
- de Jong, T. (2010). Cognitive load theory, educational research, and instructional design: Some food for thought. *Instructional Science*, 38, 105–34.
- de Villiers, M. (1990). The role and function of proof in mathematics. *Pythagoras*, 24, 17–24.
- Deloostal-Jorrard, V. (2002). Implication and mathematical reasoning. In A. D. Cockburn & E. Nardi (Eds.), *Proceedings of the 26th International Conference on the Psychology of Mathematics Education* (Vol. 2, pp. 281–8). Norwich, UK: IGPME.
- Duah, F., Croft, T., & Inglis, M. (2014). Can peer-assisted learning be effective in undergraduate mathematics? *International Journal of Mathematical Education in Science and Technology*, 45, 552–65.
- Dubinsky, E., Elterman, F., & Gong, C. (1988). The student's construction of quantification. *For the Learning of Mathematics*, 8(2), 44–51.
- Durkin, K. (2011). The self-explanation effect when learning mathematics: A meta-analysis. Evanston, IL: Society for Research on Educational Effectiveness.

- Durrand-Guerrier, V. (2003). Which notion of implication is the right one? From logical considerations to a didactic perspective. *Educational Studies in Mathematics*, 53, 5–34.
- Edwards, A., & Alcock, L. (2010). How do undergraduate students navigate their example spaces? In *Proceedings of the 32nd conference on research in undergraduate mathematics education*. Raleigh, NC, USA.
- Edwards, B. S., & Ward, M. B. (2004). Surprises from mathematics education research: Student (mis)use of mathematical definitions. *American Mathematical Monthly*, 111, 411–24.
- Epp, S. (2003). The role of logic in teaching proof. *American Mathematical Monthly*, 110, 886–99.
- Even, R. (1993). Subject-matter knowledge and pedagogical content knowledge: Prospective secondary teachers and the function concept. *Journal for Research in Mathematics Education*, 24, 94–116.
- Fischbein, E. (1982). Intuition and proof. *For the Learning of Mathematics*, 3(2), 9–18.
- Furinghetti, F., Morselli, F., & Antonini, S. (2011). To exist or not to exist: Example generation in real analysis. *ZDM: The International Journal on Mathematics Education*, 43, 219–32.
- Giaquinto, M. (2007). *Visual thinking in mathematics*. Oxford: Oxford University Press.
- Goulding, M., Hatch, G., & Rodd, M. (2003). Undergraduate mathematics experience: Its significance in secondary mathematics teacher preparation. *Journal of Mathematics Teacher Education*, 6, 361–93.
- Güçler, B. (2013). Examining the discourse on the limit concept in a beginning-level calculus classroom. *Educational Studies in Mathematics*, 82, 439–53.
- Gueudet, G. (2008). Investigating the secondary–tertiary transition. *Educational Studies in Mathematics*, 67, 237–54.
- Hadamard, J. (1945). *The psychology of invention in the mathematical field* (2nd ed.). New York: Dover Publications.
- Hardy, N. (2009). Students' perceptions of institutional practices: The case of limits of functions in college level calculus courses. *Educational Studies in Mathematics*, 72, 341–58.
- Harel, G., & Sowder, L. (1998). Students' proof schemes: Results from exploratory studies. In A. H. Schoenfeld, J. Kaput, & E. Dubinsky (Eds.),

- Research in collegiate mathematics III* (pp. 234–82). Providence, RI: American Mathematical Society.
- Hazzan, O., & Leron, U. (1996). Students' use and misuse of mathematical theorems: The case of Lagrange's theorem. *For the Learning of Mathematics*, 16(1), 23–6.
- Heinze, A. (2010). Mathematicians' individual criteria for accepting theorems and proofs: An empirical approach. In G. Hanna, H. N. Jahnke, & H. Pulte (Eds.), *Explanation and proof in mathematics* (pp. 101–11). New York: Springer.
- Hersh, R. (1993). Proving is convincing and explaining. *Educational Studies in Mathematics*, 24(4), 389–99.
- Hodds, M., Alcock, L., & Inglis, M. (2014). Self-explanation training improves proof comprehension. *Journal for Research in Mathematics Education*, 45, 62–101.
- Housman, D., & Porter, M. (2003). Proof schemes and learning strategies of above-average mathematics students. *Educational Studies in Mathematics*, 53, 139–58.
- Hoyles, C., & Küchemann, D. (2002). Students' understanding of logical implication. *Educational Studies in Mathematics*, 51, 193–23.
- Iannone, P., Inglis, M., Mejía-Ramos, J., Simpson, A., & Weber, K. (2011). Does generating examples aid proof production? *Educational Studies in Mathematics*, 77, 1–14.
- Inglis, M., & Alcock, L. (2012). Expert and novice approaches to reading mathematical proofs. *Journal for Research in Mathematics Education*, 43, 358–90.
- Inglis, M., & Alcock, L. (2013). Skimming: A response to Weber & Mejía-Ramos. *Journal for Research in Mathematics Education*, 44, 471–4.
- Inglis, M., & Mejía-Ramos, J.-P. (2009a). The effect of authority on the persuasiveness of mathematical arguments. *Cognition and Instruction*, 27, 25–50.
- Inglis, M., & Mejía-Ramos, J.-P. (2009b). On the persuasiveness of visual arguments in mathematics. *Foundations of Science*, 14, 97–110.
- Inglis, M., Mejía-Ramos, J.-P., Weber, K., & Alcock, L. (2013). On mathematicians' different standards when evaluating elementary proofs. *Topics in Cognitive Science*, 5, 270–82.
- Inglis, M., & Simpson, A. (2008). Conditional inference and advanced mathematical study. *Educational Studies in Mathematics*, 67, 187–204.

- Inglis, M., & Simpson, A. (2009). Conditional inference and advanced mathematical study: Further evidence. *Educational Studies in Mathematics*, 72, 185–98.
- Johnson-Laird, P. N., & Byrne, R. M. J. (1991). *Deduction*. Hove, UK: Erlbaum.
- Kember, D., & Leung, D. Y. P. (2006). Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. *Studies in Higher Education*, 29, 165–84.
- Ko, Y.-Y., & Knuth, E. (2009). Undergraduate mathematics majors' writing performance producing proofs and counterexamples about continuous functions. *Journal of Mathematical Behavior*, 28, 68–77.
- Lai, Y., & Weber, K. (2014). Factors mathematicians profess to consider when presenting pedagogical proofs. *Educational Studies in Mathematics*, 85, 93–108.
- Lai, Y., Weber, K., & Mejia-Ramos, J.-P. (2012). Mathematicians' perspectives on features of a good pedagogical proof. *Cognition and Instruction*, 30, 146–69.
- Lakatos, I. (1976). *Proofs and refutations*. Cambridge: Cambridge University Press.
- Larsen, S., & Zandieh, M. (2008). Proofs and refutations in the undergraduate mathematics classroom. *Educational Studies in Mathematics*, 67, 185–98.
- Lawless, C. (2000). Using learning activities in mathematics: Workload and study time. *Studies in Higher Education*, 25, 97–111.
- Leikin, R., & Wicki-Landman, G. (2000). On equivalent and non-equivalent definitions: Part 2. *For the Learning of Mathematics*, 20(2), 24–9.
- Leinhardt, G., Zaslavsky, O., & Stein, M. K. (1990). Functions, graphs, and graphing: Task, learning, and teaching. *Review of Educational Research*, 60, 1–64.
- Lin, F.-L., & Yang, K.-L. (2007). The reading comprehension of geometric proofs: The contribution of knowledge and reasoning. *International Journal of Science and Mathematics Education*, 5, 729–54.
- Lithner, J. (2003). Students' mathematical reasoning in university textbook exercises. *Educational Studies in Mathematics*, 52, 29–55.
- Lithner, J. (2008). A research framework for creative and imitative reasoning. *Educational Studies in Mathematics*, 67, 255–76.

- Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice. *Studies in Higher Education*, 27, 27–52.
- Mariotti, M. A. (2006). Proof and proving in mathematics education. In A. Gutiérrez & P. Boero (Eds.), *Handbook of research on the psychology of mathematics education: Past, present and future* (pp. 173–204). Rotterdam: Sense.
- Marton, F., & Säljö, R. (1976). On qualitative differences in learning 1. *British Journal of Educational Psychology*, 46, 4–11.
- Mason, J., Burton, L., & Stacey, K. (1982). *Thinking mathematically*. London: Addison-Wesley.
- Mason, J., & Pimm, D. (1984). Generic examples: Seeing the general in the particular. *Educational Studies in Mathematics*, 15, 277–89.
- Matthews, P., & Rittle-Johnson, B. (2009). In pursuit of knowledge: Comparing self-explanations, concepts, and procedures as pedagogical tools. *Journal of Experimental Child Psychology*, 104, 1–21.
- McNamara, D. S., Kintsch, E., Songer, N. B., & Kintsch, W. (1996). Are good texts always better? Interactions of text coherence, background knowledge, and levels of understanding in learning from text. *Cognition and Instruction*, 14, 1–43.
- Mejía-Ramos, J.-P., Fuller, E., Weber, K., Rhoads, K., & Samkoff, A. (2012). An assessment model for proof comprehension in undergraduate mathematics. *Educational Studies in Mathematics*, 79, 3–18.
- Mejía-Ramos, J.-P., & Weber, K. (2014). Why and how mathematicians read proofs: Further evidence from a survey study. *Educational Studies in Mathematics*, 85, 161–73.
- Michener, E. R. (1978). Understanding understanding mathematics. *Cognitive Science*, 2, 361–83.
- Mills, M. (2014). A framework for example usage in proof presentations. *Journal of Mathematical Behavior*, 33, 106–18.
- Monaghan, J. (1991). Problems with the language of limits. *For the Learning of Mathematics*, 11, 20–24.
- Moore, R. (1994). Making the transition to formal proof. *Educational Studies in Mathematics*, 27, 249–66.
- Muis, K. R. (2004). Personal epistemology and mathematics: A critical review and synthesis of research. *Review of Educational Research*, 74, 317–77.

- Nardi, E. (2008). *Amongst mathematicians: Teaching and learning mathematics at university level*. New York: Springer.
- Oehrtman, M. (2009). Collapsing dimensions, physical limitation, and other student metaphors for limit concepts. *Journal for Research in Mathematics Education*, 40, 396–426.
- Oehrtman, M., Swinyard, C., & Martin, J. (2014). Problems and solutions in students' reinvention of a definition for sequence convergence. *Journal of Mathematical Behavior*, 33, 131–48.
- Österholm, M. (2005). Characterizing reading comprehension of mathematical texts. *Educational Studies in Mathematics*, 63, 325–46.
- Peled, I., & Zaslavsky, O. (1997). Counter-examples that (only) prove and counter-examples that (also) explain. *Focus on Learning Problems in Mathematics*, 19, 49–61.
- Perkin, G., Croft, T., & Lawson, D. (2013). The extent of mathematics learning support in UK higher education—the 2012 survey. *Teaching Mathematics and its Applications*, 32, 165–72.
- Perry, W. G. (1970). *Forms of intellectual and ethical development in the college years: A scheme*. New York: Holt, Rinehart and Winston.
- Perry, W. G. (1988). Different worlds in the same classroom. In P. Ramsden (Ed.), *Improving learning: New perspectives* (pp. 145–61). London: Kogan Page.
- Pinto, M., & Tall, D. O. (2002). Building formal mathematics on visual imagery: A case study and a theory. *For the Learning of Mathematics*, 22, 2–10.
- Poincaré, H. (1905). *Science and hypothesis* London: Walter Scott Publishing.
- Pólya, G. (1957). *How to solve it: A new aspect of mathematical method*. Princeton, NJ: Princeton University Press.
- Presmeg, N. (2006). Research on visualization in learning and teaching mathematics. In A. Gutiérrez & P. Boero (Eds.), *Handbook of research on the psychology of mathematics education: Past, present and future* (pp. 205–35). Rotterdam: Sense.
- Przenioslo, M. (2005). Introducing the concept of convergence of a sequence in secondary school. *Educational Studies in Mathematics*, 60, 71–93.
- Raman, M. (2003). Key ideas: What are they and how can they help us understand how people view proof? *Educational Studies in Mathematics*, 52, 319–25.

- Raman, M. (2004). Epistemological messages conveyed by three high-school and college mathematics textbooks. *Journal of Mathematical Behavior*, 23, 389–404.
- Rav, Y. (1999). Why do we prove theorems? *Philosophia Mathematica*, 7, 5–41.
- Recio, A., & Godino, J. (2001). Institutional and personal meanings of mathematical proof. *Educational Studies in Mathematics*, 48, 83–99.
- Renkl, A. (2002). Worked-out examples: Instructional explanations support learning by self-explanations. *Learning and Instruction*, 12, 529–56.
- Rittle-Johnson, B. (2006). Promoting transfer: Effects of self-explanation and direct instruction. *Child Development*, 77, 1–15.
- Robert, A., & Speer, N. (2001). Research on the teaching and learning of calculus/elementary analysis. In D. Holton (Ed.), *The teaching and learning of mathematics at university level* (pp. 283–99). New York: Springer.
- Roh, K. H. (2008). Students' images and their understanding of definitions of the limit of a sequence. *Educational Studies in Mathematics*, 69, 217–33.
- Rowland, T. (2002). Generic proofs in number theory. In S. R. Campbell & R. Zazkis (Eds.), *Learning and teaching number theory: Research in cognition and instruction* (pp. 157–84). Westport, CT: Ablex Publishing Corp.
- Roy, M., & Chi, M. T. H. (2005). The self-explanation principle in multimedia learning. In E. Mayer (Ed.), *The Cambridge handbook of multimedia learning* (pp. 271–86). Cambridge: Cambridge University Press.
- Schoenfeld, A. H. (1985). *Mathematical problem solving*. San Diego: Academic Press.
- Schoenfeld, A. H. (1992). Learning to think mathematically: Problem solving, metacognition and sense making in mathematics. In D. Grouws (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 334–70). New York: Macmillan.
- Sealey, V. (2014). A framework for characterizing student understanding of Riemann sums and definite integrals. *Journal of Mathematical Behavior*, 33, 230–45.
- Segal, J. (2000). Learning about mathematical proof: Conviction and validity. *Journal of Mathematical Behavior*, 18, 191–210.
- Selden, A., & Selden, J. (1999). *The role of logic in the validation of mathematical proofs* (Tech. Rep.). Cookeville, TN, USA: Tennessee Technological University.

- Selden, A., & Selden, J. (2003). Validations of proofs considered as texts: Can undergraduates tell whether an argument proves a theorem? *Journal for Research in Mathematics Education*, 34, 4–36.
- Selden, J., & Selden, A. (1995). Unpacking the logic of mathematical statements. *Educational Studies in Mathematics*, 29, 123–51.
- Shepherd, M. D. (2005). Encouraging students to read mathematics. *Problems, Resources, and Issues in Mathematics Undergraduate Studies*, 15, 124–44.
- Shepherd, M. D., Selden, A., & Selden, J. (2012). University students' reading of their first-year mathematics textbooks. *Mathematical Thinking and Learning*, 14, 226–56.
- Skemp, R. R. (1976). Relational understanding and instrumental understanding. *Mathematics Teaching*, 77, 20–26.
- Sofronas, K. S., DeFranco, T. C., Vinsonhaler, C., Gorgievski, N., Schroeder, L., & Hamelin, C. (2011). What does it mean for a student to understand the first-year calculus? Perspectives of 24 experts. *Journal of Mathematical Behavior*, 30, 131–48.
- Speer, N. M., Smith III, J. P., & Horvath, A. (2010). Collegiate mathematics teaching: An unexamined practice. *Journal of Mathematical Behavior*, 29, 99–114.
- Stanovich, K. E. (1999). *Who is rational? Studies of individual differences in reasoning*. Mahwah, NJ: Lawrence Erlbaum.
- Stewart, I. N., & Tall, D. O. (1977). *The foundations of mathematics*. Oxford: Oxford University Press.
- Stylianides, A. J., & Stylianides, G. J. (2009). Proof constructions and evaluations. *Educational Studies in Mathematics*, 72, 237–53.
- Stylianides, A. J., Stylianides, G. J., & Philippou, G. N. (2004). Undergraduate students' understanding of the contraposition equivalence rule in symbolic and verbal contexts. *Educational Studies in Mathematics*, 55, 133–62.
- Stylianou, D. A., & Silver, E. A. (2004). The role of visual representations in advanced mathematical problem solving: An examination of expert-novice similarities and differences. *Mathematical Thinking and Learning*, 6, 353–87.
- Swinyard, C. (2011). Reinventing the formal definition of limit: The case of Amy and Mike. *Journal of Mathematical Behavior*, 30, 93–114.

- Tall, D. (1982). Elementary axioms and pictures for infinitesimal calculus. *Bulletin of the IMA*, 18, 43–83.
- Tall, D. (1991). Intuition and rigour: The role of visualization in the calculus. In W. Zimmerman & S. Cunningham (Eds.), *Visualization in teaching and learning mathematics* (pp. 105–19). Washington, DC: MAA.
- Tall, D. (2013). *How humans learn to think mathematically*. Cambridge: Cambridge University Press.
- Tall, D. O. (1989). The nature of mathematical proof. *Mathematics Teaching*, 127, 28–32.
- Tall, D. O. (1992). The transition to advanced mathematical thinking: Functions, limits, infinity, and proof. In D. A. Grouws (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 495–511). New York: Macmillan.
- Tall, D. O. (1995). Cognitive development, representations and proof. In *Proceedings of justifying and proving in school mathematics* (pp. 27–38). London: Institute of Education.
- Tall, D. O., & Vinner, S. (1981). Concept image and concept definition in mathematics with particular reference to limits and continuity. *Educational Studies in Mathematics*, 12, 151–69.
- Toulmin, S. (1958). *The uses of argument*. Cambridge: Cambridge University Press.
- Tsamir, P., Tirosh, D., & Levenson, E. (2008). Intuitive nonexamples: The case of triangles. *Educational Studies in Mathematics*, 49, 81–95.
- Vamvakoussi, X., Christou, K. P., Mertens, L., & Van Dooren, W. (2011). What fills the gap between discrete and dense? Greek and Flemish students' understanding of density. *Learning and Instruction*, 21, 676–85.
- Vamvakoussi, X., & Vosniadou, S. (2010). How many decimals are there between two fractions? Aspects of secondary school students' understanding of rational numbers and their notation. *Cognition and Instruction*, 28, 181–209.
- Vinner, S. (1991). The role of definitions in teaching and learning. In D. O. Tall (Ed.), *Advanced mathematical thinking* (pp. 65–81). Dordrecht: Kluwer.
- Vinner, S., & Dreyfus, T. (1989). Images and definitions for the concept of function. *Journal for Research in Mathematics Education*, 20, 356–66.
- Weber, K. (2001). Student difficulty in constructing proofs: The need for strategic knowledge. *Educational Studies in Mathematics*, 48, 101–19.

- Weber, K. (2004). Traditional instruction in advanced mathematics courses: A case study of one professor's lectures and proofs in an introductory real analysis course. *Journal of Mathematical Behavior*, 23, 115–33.
- Weber, K. (2005). On logical thinking in mathematics classrooms. *For the Learning of Mathematics*, 25(3), 30–31.
- Weber, K. (2008). How mathematicians determine if an argument is a valid proof. *Journal for Research in Mathematics Education*, 39, 431–59.
- Weber, K. (2009). How syntactic reasoners can develop understanding, evaluate conjectures, and generate examples in advanced mathematics. *Journal of Mathematical Behavior*, 28, 200–208.
- Weber, K. (2010a). Mathematics majors' perceptions of conviction, validity and proof. *Mathematical Thinking and Learning*, 12, 306–36.
- Weber, K. (2010b). Proofs that develop insight. *For the Learning of Mathematics*, 30(1), 32–6.
- Weber, K. (2012). Mathematicians' perspectives on their pedagogical practices with respect to proof. *International Journal of Mathematical Education in Science and Technology*, 43, 463–82.
- Weber, K., & Alcock, L. (2004). Semantic and syntactic proof productions. *Educational Studies in Mathematics*, 56, 209–34.
- Weber, K., & Alcock, L. (2005). Using warranted implications to understand and validate proofs. *For the Learning of Mathematics*, 25(1), 34–8.
- Weber, K., & Alcock, L. (2009). Proof in advanced mathematics classes: Semantic and syntactic reasoning in the representation system of proof. In D. A. Stylianou, M. L. Blanton, & E. Knuth (Eds.), *Teaching and learning proof across the grades: A K-16 perspective* (pp. 323–38). New York: Routledge.
- Weber, K., Inglis, M., & Mejía-Ramos, J.-P. (2014). How mathematicians obtain conviction: Implications for mathematics instruction and research on epistemic cognition. *Educational Psychologist*, 49, 36–58.
- Weber, K., & Mejía-Ramos, J.-P (2009). An alternative framework to evaluate proof productions: A reply to Alcock and Inglis. *Journal of Mathematical Behavior*, 28, 212–16.
- Weber, K., & Mejía-Ramos, J.-P (2011). Why and how mathematicians read proofs: An exploratory study. *Educational Studies in Mathematics*, 76, 329–44.
- Weinberg, A., & Wiesner, E. (2011). Understanding mathematics textbooks through reader-oriented theory. *Educational Studies in Mathematics*, 76, 49–63.

- Weinberg, A., Wiesner, E., & Fukawa-Connelly, T. (2014). Students' sense-making frames in mathematics lectures. *Journal of Mathematical Behavior*, 33, 168–79.
- Wicki-Landman, G., & Leikin, R. (2000). On equivalent and non-equivalent definitions: Part 1. *For the Learning of Mathematics*, 20(1), 17–21.
- Williams, C. G. (1998). Using concept maps to assess conceptual knowledge of function. *Journal for Research in Mathematics Education*, 29, 414–21.
- Wong, R. M. F., Lawson, M. J., & Keeves, J. (2002). The effects of self-explanation training on students' problem solving in high-school mathematics. *Learning and Instruction*, 12, 233–62.
- Yang, K.-L., & Lin, F.-L. (2008). A model of reading comprehension of geometry proof. *Educational Studies in Mathematics*, 67, 59–76.
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, 47, 302–14.
- Yopp, D. A. (2014). Undergraduates' use of examples in online discussion. *Journal of Mathematical Behavior*, 33, 180–91.
- Yusof, Y. B. M., & Tall, D. O. (1999). Changing attitudes to university mathematics through problem solving. *Educational Studies in Mathematics*, 37, 67–82.
- Zandieh, M., & Rasmussen, C. (2010). Defining as a mathematical activity: A framework for characterizing progress from informal to more formal ways of reasoning. *Journal of Mathematical Behavior*, 29, 57–75.
- Zandieh, M., Roh, K. H., & Knapp, J. (2014). Conceptual blending: Student reasoning when proving 'conditional implies conditional' statements. *Journal of Mathematical Behavior*, 33, 209–29.
- Zaslavsky, O., & Shir, K. (2005). Students' conceptions of a mathematical definition. *Journal for Research in Mathematics Education*, 36, 317–46.
- Zazkis, R., & Chernoff, E. J. (2008). What makes a counterexample exemplary? *Educational Studies in Mathematics*, 68, 195–208.