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RESEARCH INTERESTS

Scientific Thinking and Epistemic Cognition: Life-Span Development and Educational Support
Statistical Modeling of Individual Differences in Education and Development

RESEARCH EXPERIENCE & OCCUPATION

2025/04 -	Professor for Methods of Empirical Educational Research: LMU Munich, Germany.
2025/01-03	Postdoctoral Researcher: Chair of Physics Education, LMU Munich, Germany.
2019 - 2024	Senior Assistant & Lecturer: ETH Zurich, Switzerland.
2023/04 - 2024/03	Interim Professor (W2) for Methods of Empirical Educational Research: LMU Munich.
2022/01 - 2022/02	Visiting Scholar: University of Denver, Research Methods & Statistics, Morgridge College of Education.
2017 - 2019	Postdoctoral Researcher & Lecturer: ETH Zurich, Switzerland.
2018/06 - 2018/07	Visiting Researcher: University of Trier, Educational Psychology.
2012 - 2017	Research Assistant & Lecturer: ETH Zurich, Switzerland.
2011 - 2012	Student teaching assistant: University of Graz, Department of Psychology.
2012	Internship: Policy Research Group, University of Cambridge, UK.
2011	Internship: School Psychological Service Leibnitz, Austria.
2009	Internship: Cognitive Science Section, University of Graz, Austria.
2009	Social- and learning-caretaker: Association of Foster-Parents Graz, Austria.
2005 - 2012	Paramedic and ambulance driver: Austrian Red Cross.

EDUCATION

2012 - 2017	Doctoral studies (Dr. sc. ETH) in Learning and Instruction: ETH Zurich, Switzerland.
2011	Erasmus exchange semester: University of Padova, Italy.
2007 - 2012	Diploma studies (MSc.) in Psychology: University of Graz, Austria.
2005	High-school diploma: Federal Gymnasium Kirchengasse, Graz, Austria.

TEACHING

2025	Lecture and lab: Empirical Research Methods I-2. BA Pedagogy, LMU Munich.
2025	Seminar: General Didactics and Subject Didactics in Empirical Research Methods for Teaching Assistants. BA Pedagogy, LMU Munich.
2023- 2024	Lecture and lab: *Advanced Research Methods: Modeling Individual Differences in Learning Processes: Latent Change Score Modeling, Multilevel Modeling, Latent Profile Analysis, and Sequence Analysis in EDM/Learning Analytics.* MA Pedagogy, LMU Munich.
2023	Lecture: *Empirical Research Methods II-2: Cross-Sectional and (Intensive) Longitudinal Study Designs, with the Focus Topics Test Construction and Psychometrics, Mutilevel Modeling, Bayesian Statistics, and Machine Learning*. BA Pedagogy, LMU Munich.
2023	Advanced Seminar: *Empirical Research Projects on (Mist-)Trust in Science*. BA Pedagogy, LMU Munich.
2017 - 2024	Lecture: *Designing Learning Environments: Educational Foundations*. Didactics certificate ETH Zurich.
2015 - 2024	Seminar: *Educational Science: Assessment and Support of Knowledge Development in the Classroom.* Teaching diploma for Science in high schools (postgraduate), ETH Zurich.
2014 - 2020	Seminar: *Research Methods in Educational Science.* Postgraduate course, ETH Zurich.
2017 - 2019	Seminar: *Research Project: Applied Research on Learning and Instruction*. Postgraduate course, ETH Zurich.
2013 - 2015	Lecture: *Human Learning*. Graduate & postgraduate course, ETH Zurich.
2011 - 2012	Seminar: *Research Methods in Developmental Psychology, Health Psychology, and Differential Psychology*. Graduate courses, University of Graz, teaching assistant.

INVITED LECTURES AND WORKSHOPS

2024	Workshop: *Statistical Tools for Research on Knowledge Development*. Workshop for members of the EPFL/ETH Joint Doctoral Program in the Learning Sciences. ETH Zurich.
2024	Workshop: *Statistical Tools for Research on Conceptual Change*. 4th PhD Summer School on Conceptual Change, Technical University Munich.
2024	Workshop: *Bayesian Multilevel Modeling of the Differential Effectiveness of Educational Interventions*. Graduate School of Education, University of Wuppertal.
2024	Workshop: *Handling non-significant results in educational research.* Graduate School University of Cologne.
2024	Workshop: *Test and Survey Construction and Psychometric Analysis Using Classical Test Theory, Rasch Modeling, and Item Response-Theory.* Two-Day Course at the University of Teacher Education, Zurich.
2023	Workshop: *Teaching and Learning Goals: Theoretical Figment or Actual Practical Value?* Teacher education course at Cantonal High School Menzingen, Switzerland.
2022	Lecture: *No Need to p: Exploring Null Hypothesis Significance Testing and its Alternatives*. University of Zurich, Switzerland.
2022	Workshop: *Bayesian Multilevel Modeling of Intensive Longitudinal Data with brms and Stan*. University of Zurich, Switzerland.
2022	Workshop: *Latent Profile Analysis for the Identification of Aptitudes and Learning Patterns in Multivariate Designs.* University of Leipzig, Germany.
2022	Workshop: *Summative Assessment: Designing Informative and Fair Exams*. Teacher

education course at Cantonal High School Menzingen, Switzerland.

2022 Workshop: *The Peer Review Process: Developing the Necessary Knowledge, Skills, and Meta-Cognitive Aspects for Writing and Receiving Reviews*. 2-day workshop at the DACH Junior Academy for Educational Research, University of Teacher Education Tyrol, Innsbruck, Austria.

2022 Workshop: *The Peer Review Process: Developing the Necessary Knowledge, Skills, and Meta-Cognitive Aspects for Writing and Receiving Reviews*. 2-day workshop at the DACH Junior Academy for Educational Research, University of Teacher Education Tyrol, Innsbruck, Austria.

2022 Workshop: *Mixture Modeling: Using Cluster-Analytic Methods in Education- and Counseling* Research. Invited guest lecture for course Factor Analysis II, University of Denver.

2021 Lecture: *Psychometrics for the Learning Sciences and Higher Education*. Introduction to Methods in Learning Sciences II, guest lecture invited by Tanmay Sinha, Professorship for Learning Sciences and Higher Education, ETH Zurich, Switzerland.

2020 Workshop: *Capturing Non-Linear Information with Mixture Models, Visualization Techniques, and Additive models*. Peer mentoring group for Real Life Measurement and Analytics, University of Zurich.

2020 Workshop: *Mixture modeling for finding informative subgroups in cross-sectional, longitudinal, and intensive longitudinal data*. Peer mentoring group for Real Life Measurement and Analytics, University of Zurich.

2020 Workshop: *Formative Assessment and its Implementation in the Phase Curriculum*. Teacher education course at Cantonal High School Wettingen, Switzerland.

2019 Workshop: *Hierarchical Linear Modeling: A Tool for Examining Learning and the Effects of Educational Interventions in Science*. Swiss Doctoral School of Science Education, Monte Veritá, Switzerland.

2018 2-day course: *Statistical Analyses for Experimental Research with "Pre- Post-Follow up-Data": Models of Change, Psychometrics, Multilevel Modeling, and Structural Equation Modeling*. University of Munster, Germany.

2018 Lecture: *Statistical Tools for Research on Conceptual Change*. 2nd PhD Summer School on Conceptual Change, Klagenfurt, Austria.

2017 Workshop: *Improving Common Statistical Models in Psychology with Structural Equation Modeling*. Junior Researcher Programme, University of Cambridge, UK.

2016 Workshop: *Bayesian Statistics in Psychology: Theory and Application of Classical and Some Trendy Models.* Junior Researcher Programme, University of Cambridge, UK.

2016 Workshop: *Bayesian Statistics in Psychology: Theory and Application of Some Classical and Trendy Models, including SEM*. 5th Psihozij Psychology Congress, University of Zagreb, Croatia.

2015 Workshop: *Bayesian Statistics in Psychological Settings* (co-teaching with Fabian Dablander). Junior Researcher Programme, University of Cambridge, UK.

2015 Workshop: *The Bayesian Revolution: Why and How* (co-teaching with Fabian Dablander). 29th Congress of the European Federation of Psychology Students' Associations, Srní, Czech Republic.

2015 Workshop: *Structural Equation Modeling*. 29th Congress of the European Federation of Psychology Students' Associations, Srní, Czech Republic.

2014 Workshop: *Publication-Ready Graphics with R and ggplot2.* Association of Scientific Staff, ETH Zurich.

2014 Workshop: *Mixture Models in Psychology: Latent Class Analysis and Extensions.*

Junior Researcher Programme, University of Cambridge, UK.

2013 Lecture: *Conceptual Change in Biology* [Konzeptwechsel in der Biologie]. University of Zurich, Switzerland.

PUBLICATIONS

Edelsbrunner, P. A., Simonsmeier, B., & Schneider, M. (2025). The internal consistency of domain-specific knowledge before and after learning: A meta-analysis of published studies. *Educational Psychology Review*. Advance online publication. https://doi.org/10.1007/s10648-024-09982-y

Schiele, T., **Edelsbrnner, P. A.**, Mues, A., Birtwistle, E., Wirth, A., & Niklas, F. (2025). The effectiveness of app-based gamified literacy learning in preschool children from different backgrounds. *Learning and Individual Differences, 117*:102579. https://doi.org/10.1016/j.lindif.2024.102579

Edelsbrunner, P.A., Schumacher, R., Hänger-Surer, B., Schalk, L., & Stern, E. (2024). Preparation for future conceptual learning: Content-specific long-term effects of early physics instruction. *Journal of Educational Psychology, 116*(8), 1479–1499. https://doi.org/10.1037/edu0000887

Edelsbrunner, P. A. (2024). Does Interference between Intuitive Conceptions and Scientific Concepts Produce Reliable Inter-Individual Differences? A Psychometric Analysis. *Science and Education*. Advance online publication. Data and scripts

Edelsbrunner, P. A., & Hofer, S. I. (2024). Examining and Comparing the Relation Between Representational Competence and Conceptual Knowledge Across Four Samples. *Frontiers in Education*.

White, M., **Edelsbrunner, P. A.**, & Thurn, C. M. (2024). The conceptualisation implies the statistical model: implications for measuring domains of teaching quality. *Assessment in Education: Principles, Policy & Practice, 31*(3–4), 254–278. https://doi.org/10.1080/0969594X.2024.2368252

Brauchli, V., **Edelsbrunner, P. A.**, Paz Castro, R., Barr, R., von Wyl, A., Lannen, P., & Sticca, F. (2024). Screen time vs. scream time: Developmental interrelations between young children's screen time, negative affect, and effortful control. *Computers in Human Behavior, 152*(3):108138. https://doi.org/10.1016/j.chb.2024.108138

Brauchli, V., Sticca, F., **Edelsbrunner, P. A.**, von Wyl, A., & Lannen, P. (2024). Are screen media the new pacifiers? The role of parenting stress and parental attitudes for children's screen time in early childhood. *Computers in Human Behavior*, 152(2):108057. https://doi.org/10.1016/j.chb.2023.108057

Edelsbrunner, P. A., & Thurn, C. (2024). Improving the Utility of Non-Significant Results for Education: A Review and Recommendations. *Educational Research Review, 42(2)*:100590. https://doi.org/10.1016/j.edurev.2023.100590

Peteranderl, S.*, **Edelsbrunner, P. A.***, Deiglmayr, A. Schumacher, R., & Stern, E. (2023). What skills related to the control-of-variables strategy need to be taught, and who gains most? Differential effects of a training intervention. *Journal of Educational* Psychology, *115*(6), 813-835. https://doi.org/10.1037/edu0000799 *Authors contributed equally.

Tetzlaff, L., **Edelsbrunner, P. A.**, Schmitterer, A., Hartmann, U., & Brod, G. (2023). A Person-Centered Approach to Modeling the Interactions Between Learner Characteristics and Instruction: Evidence for Differential Effectiveness of Reading Education. *Educational Psychology Review 35*:112. https://doi.org/10.1007/s10648-023-09830-5

Zitzmann, S., … **Edelsbrunner, P. A.**,… Hecht, M. (2023). On the role of variation in measures, the worth of underpowered studies, and the need for tolerance among researchers: Some more reflections on Leising et al. (2022) from a methodological, statistical, and social-psychological perspective. *Personality Science*. Advance online publication.

Edelsbrunner, P. A., Sebben, S., Frisch, L. K., Schüttengruber, V., Protzko, J., & Thurn, C. M. (2023). How to understand a research question – A Challenging First Step in Setting up a Statistical Model. *Religion, Brain, & Behaviour, 13*(13), 306-309. https://doi.org/10.1080/2153599X.2022.2070258

Edelsbrunner, P. A., Malone, S., Hofer, S. ., Küchemann, S., Kuhn, J., Schmid, R., Altmeyer, K., Brünken, R., & Lichtenberger, A. (2023). The relation of representational competence and conceptual knowledge in female and male undergraduates. *International Journal of STEM Education, 10*, Article 44. https://doi.org/10.1186/s40594-023-00435-6 Preprint available from https://psyarxiv.com/m4u5j/.

Edelsbrunner, P. A., & Hofer, S. I. (2023). Unraveling the relation between representational competence and conceptual knowledge across four samples from two different countries. *Frontiers in Education, 8*. https://doi.org/10.3389/feduc.2023.1046492.

Edelsbrunner, P.A.*, Flaig, M.*, & Schneider, M. (2023). A Simulation Study on Latent Transition Analysis for Examining Profiles and Trajectories in Education: Recommendations for Fit Statistics. *Journal of Research on Educational Effectiveness, 16*(2), 350-275. Materials and preprint available from https://psyarxiv.com/bqc94/ *Authors contributed equally. https://doi.org/10.1080/19345747.2022.2118197

Grimm, H.*, **Edelsbrunner, P. A.***, & Moeller, K. (2023). Accommodating Heterogeneity: Interactions of Instructional Scaffolding with Student Preconditions in the Learning of Hypothesis-Based Reasoning. *Instructional Science, 51,* 103-133. https://doi.org/10.1007/s11251-022-09601-9 *Authors contributed equally. Preprint available from https://psyarxiv.com/sn9c3/

Schmidt, K., **Edelsbrunner, P. A.**, Rosman, T., Cramer, C., & Merk, S. (2023). Teachers' perception and interpretation of inferential statistics and effect sizes in press releases. *Teaching and Teacher Education, 130*(8):104134. https://doi.org/10.1016/j.tate.2023.104134

Dumas, D., & **Edelsbrunner, P. A.** (2023). How to make recommendations for educational practice from correlational data using structural equation models. *Educational Psychology Review, 35*:48. https://doi.org/10.1007/s10648-023-09770-0

Babari, P., Hielscher, M., **Edelsbrunner, P. A.**, Conti, M., Döbeli Honegger, B., & Marinus, E. (2023). A literature review of children's and youth's conceptions of the Internet. *International Journal of Child-Computer Interaction, 37*(3):100595. https://doi.org/10.1016/j.ijcci.2023.100595

Babari, P., Hielscher, M., **Edelsbrunner, P. A.**, Döbeli Honegger, B., Waldvogel, B., & Marinus, E. (2023). Using Concept Cartoons for Assessing Children's Conceptions about the Internet. *Proceedings of the 18th WiPSCE Conference on Primary and Secondary Computing Education Research*.

Thurn, C., **Edelsbrunner, P. A.**, Berkowitz, M., Deiglmayr, A., & Schalk, L. (2023). Questioning central assumptions of the ICAP framework. *npj Science of Learning*, 8:49. https://doi.org/10.1038/s41539-023-00197-4

Hoogeveen, S., Sarafoglou, A., van Elk, M., ...**Edelsbrunner, P. A.**, ... & Wagenmakers, E. J. (2023). A many-analysts approach to the relation between religiosity and well-being. *Religion, Brain, & Behaviour, 13*(3), 237-283. https://doi.org/10.31234/osf.io/pbfye

Hanfstingl, B., Uher, J., **Edelsbrunner, P. A.**, Dettweiler, U. & Gnambs, T. (2023). Editorial: From "modern" to "postmodern" psychology: future-oriented reflections and solutions. *Frontiers in Psychology, 14:*. https://doi.org/10.3389/fpsyg.2023.1091721

Edelsbrunner, P.A. (2022). A Model and its Fit Lie in The Eye of the Beholder: Long Live the Sum Score. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.986767

Schiefer, J.*, **Edelsbrunner, P. A.***, Bernholt, A., Kampa, N., & Nehring, A. (2022). Profiles of epistemic beliefs in science: An integration of evidence from multiple studies. *Educational Psychology Review, 34, 1545-1575*. https://doi.org/10.1007/s10648-022-09661-w *Authors contributed equally.

Edelsbrunner, P. A.*, Ruggeri*, K., Damnjanović, K., Greiff, S., Lemoine, J. E., & Ziegler, M. (2022). Generalizability, Replicability, and New Insights Derived From Registered Reports Within Understudied Populations. *European Journal of Psychological Assessment, 38*(6), 427-431. *Authors contributed equally. https://doi.org/10.1027/1015-5759/a000743

Berkowitz, M., **Edelsbrunner, P. A.**, & Stern, E. (2022). The relation between working memory and mathematics performance among students in math-intensive STEM programs. *Intelligence, 92:*101649. https://doi.org/10.1016/j.intell.2022.101649

Costache, O.*, **Edelsbrunner, P. A**.*, Becker, E., Sticca, F., Staub, F. C., & Götz, T. (2022). Domänenübergreifende Verläufe der intrinsischen Wertüberzeugungen in Mathematik und Französisch: Zusammenhänge mit Berufsorientierungen. *Zeitschrift für Erziehungswissenschaft, 25, 269-291*. https://doi.org/10.1007/s11618-022-01095-y *Authors contributed equally.

Edelsbrunner, P. A., & Peteranderl, S. (2022). Vermeidung von Fehlkonzepten durch die Förderung des Verständnisses von Experimenten in der Grundschule. In M. Schneider, R. Grabner, H. Saalbach & L. Schalk (Eds.) *Wie guter Unterricht intelligentes Wissenschafft* (pp. 110-120). Kohlhammer.

Edelsbrunner, P. A., Schumacher, R., & Stern, E. (2022). Children's Scientific Reasoning in Light of General

Cognitive Development. In O. Houdé & G. Borst (Eds.), *The Cambridge Handbook of Cognitive Development, pp. 585-605*. Cambridge University Press.

Luo, M., **Edelsbrunner, P. A.**, Siebert, J., Martin, M., & Aschwanden, D. (2021). Longitudinal within-person associations between quality of social relations, social network size, and cognitive functioning in older age. *Journal of Gerontology: Series B*.

Schweinsberg, M., Feldman, M., Staub, N., van den Akker, O. R., van Aert, R. C. M., … **Edelsbrunner, P. A.**, … & Uhlmann, E. L. (2021). Same data, different conclusions: Radical dispersion in empirical results when independent analysts operationalize and test the same hypothesis. *Organizational Behavior and Human Decision Processes.*

Küchemann, S., Malone, S**., Edelsbrunner, P. A.**, Lichtenberger, A., Stern, E., Brünken, R., Vaterlaus, A., & Kuhn, J. (2021). An Inventory for the Assessment of Representational competence of vector fields. *Physical Review Physics Education Research, 17*:020126.

Studhalter, U. T., Leuchter, M., Tettenborn, A., Elmer, A., **Edelsbrunner, P. A.**, & Saalbach, H. (2021). Early Science Learning: The Effects of Teacher Talk. *Learning & Instruction, 71, 101371*. https://doi.org/10.1016/j.learninstruc.2020.101371

Peteranderl, S., **Edelsbrunner, P. A.**, & Deiglmayr, A. (2021). Evidenzbasiertes Argumentieren bei multivariablen Kausalzusammenhängen mit Interaktionen in der fünften und sechsten Schulstufe. *Unterrichtswissenschaft, 49*, 57-90.

Ziegler, E., **Edelsbrunner, P. A.**, & Stern, E. (2021). The benefits of combining teacher-direction with contrasted presentation of algebra principles. *European Journal of Psychology of Education, 36*(1), 187–218. https://doi.org/10.1007/s10212-020-00468-3

Bennet, K. A., Kaikhosroshvili, K., **Edelsbrunner, P. A.**, & Bichler, S. (2021). Scaffolds to advance revision in science: Meta-cognitive knoweldge about revision versus generating content understanding. *Proceedings of the 2021 Annual Meeting of the International Society of the Learning Sciences*, 315-322.

Edelsbrunner, P. A. (2020). Wissenschaftstheoretischer Hintergrund: Die Methoden der empirischen Lehr- und Lernforschung. In: Elsbeth Stern, Henrik Saalbach, Peter Greutmann (Hrsg.) *Professionelles Handlungswissen für Lehrerinnen und Lehrer* (pp. 232 – 242). Kohlhammer.

Edelsbrunner, P. A., Schalk, L., & Hofer, S. (2020). Lernleistung bewerten: Summatives Assessment. In: Elsbeth Stern, Henrik Saalbach, Peter Greutmann (Hrsg.) *Professionelles Handlungswissen für Lehrerinnen und Lehrer* (pp. 135 – 168). Kohlhammer.

Schwichow, M., Osterhaus, C., **Edelsbrunner, P. A.** (2020). The Relationship between the Control-of-Variables Strategy and Science Content Knowledge in Secondary School. *Contemporary Educational Psychology, 63*, 101923. https://doi.org/10.1016/j.cedpsych.2020.101923

Landy, J. F., Jia, M., Ding, I. L., Viganola, D., Tierney, W., ... **Edelsbrunner, P. A.**, ... Uhlmann, E. L. (2020). Crowdsourcing hypothesis tests: Making transparent how design choices shape research results. *Psychological Bulletin, 146, 451-479*. https://doi.org/10.1037/bul0000220

Stern, E., & **Edelsbrunner, P. A.** (2020). Intelligence. In Stephen Hupp & Jeremy D. Jewell (Eds.) *The Encyclopedia of Child and Adolescent Development*. Wiley.

Donhauser, A., Küchemann, S., Rau, M., Malone, S., **Edelsbrunner, P. A.**, Lichtenberger, A., & Kuhn, J. (2020). Making the invisible visible: Visualization of the connection between magnetic field, electric current and Lorentz force with the help of smartglasses. *The Physics Teacher, 58*, 438. https://doi.org/10.1119/10.0001848

Edelsbrunner, P. A.* & Peteranderl, S.* (2020). The Predictive Strength of the Understanding of Inconclusiveness and Confounding for Later Mastery of the Control-of-Variables Strategy. *Frontiers in Psychology*. *Both authors contributed equally. https://doi.org/10.3389/fpsyg.2020.531565

Edelsbrunner, P. A., & Dablander, F. (2019). The Psychometric Modeling of Scientific Reasoning: A Review and Recommendations for Future Avenues. *Educational Psychology Review, 31*, 1-34. doi:10.1007/s10648-018-9455-5

Costache, O., Becker, E., **Edelsbrunner, P. A.,** & Staub, F. C. (2019). Entwicklung der Motivation: Ergebnisse für das Schweizer Gymnasium. [Development of Motivation: Results for the Swiss Gymnasium]. *Gymnasium Helveticum, 73*(5), 6-14. pdf(german) pdf(french)

Mehler, D. M. A.*, **Edelsbrunner, P. A.***, & Matić, K. (2019). Appreciating the Significance of Non-significant Findings in Psychology. *Journal of European Psychology Students, 10*, 1–7. doi:10.5334/e2019a *Authors contributed equally.

Vaci, N., **Edelsbrunner, P. A.**, Stern, E., Neubauer, A., Bilalić, M., & Grabner, R. H. (2019). The Joint Influence of Intelligence and Practice on Skill Development Throughout the Lifespan. *Proceedings of the National Academy of Sciences, 116*, 18363-18369.

Ziegler, E., **Edelsbrunner, P. A.**, & Star, J. R. (2019). Preventing interference: Reordering complexity in the learning of new concepts. Journal of Educational Psychology, 111(7), 1202–1219. https://doi.org/10.1037/edu0000347

Schalk, L., **Edelsbrunner, P. A.**, Deiglmayr, A., Schumacher, R., & Stern, E (2019). Improved application of the control-of-variables strategy as a collateral benefit of inquiry-based physics education in elementary school. *Learning and Instruction, 59*, 34-45. doi:10.1016/j.learninstruc.2018.09.006 pdf data/scripts/materials

Edelsbrunner, P. A., Schalk, L., Schumacher, R., & Stern, E. (2018). Variable control and conceptual Change: A large-scale quantitative study in primary school. *Learning and Individual Differences, 66*. doi:10.1016/j.lindif.2018.02.003 pdf data/scripts/materials

Hickendorff, M., **Edelsbrunner, P. A.**, McMullen, J., Schneider, M., & Trezise, K.. (2018). Informative Tools for Characterizing Individual Differences in Learning: Latent Class, Latent Profile, and Latent Transition Analysis. *Learning and Individual Differences, 66*, 4-15. doi:10.1016/j.lindif.2017.11.001 pdf

Ziegler, E., **Edelsbrunner, P. A.**, & Stern, E. (2018). The relative merits of explicit and implicit learning of contrasted algebra principles. *Educational Psychology Review*. doi:10.1007/s10648-017-9424-4 pdf

Etz, A., Gronau, Q. F., Dablander, F., **Edelsbrunner, P. A.**, & Baribault, B. (2018). How to become a Bayesian in eight easy steps: An annotated reading list. *Psychonomic Bulletin & Review, 25*, 219-234. doi:10.3758/s13423-017-1317-5 pdf

Soyyılmaz, D., Griffin, L. M., Hernández Martin, M., Kucharsky, Š., Peycheva, E. D., Vaupotič, N., & **Edelsbrunner, P. A.** (2017). Formal and informal learning and first-year Psychology students' development of scientific thinking: A two-wave panel study. *Frontiers in Psychology, 8*:133 doi:10.3389/fpsyg.2017.00133

Edelsbrunner, P. A., Schalk, L., Schumacher, R., & Stern, E. (2015). Pathways of conceptual change: Investigating the influence of experimentation skills on conceptual knowledge development in early science education. *Proceedings of the 37th Annual Conference of the Cognitive Science Society*, 620-625. Austin: Texas.

Agan, M. L. F., Costin, A. S., Deutz, M. H. F., **Edelsbrunner, P. A.**, Zalis, L. & Franken, A. (2015). Associations between risk behaviour and social status in European adolescents. *European Journal of Developmental Psychology, 12*, 189-203. doi:10.1080/17405629.2014.975790

Edelsbrunner, P. A., & Schneider, M. (2013). Modelling for prediction vs. modelling for understanding: Commentary on Musso et al. (2013). *Frontline Learning Research, 2*, 99-101. doi:10.14786/flr.v1i2.74

MANUSCRIPTS UNDER PEER REVIEW

Edelsbrunner, P. A., Tetzlaff, L., Bach, K. M., Dumas, D., Hofer, S. I., Köhler, C., Kozlova, Z., Moeller, J., Reinhold, F., Roberts, G. J., Sengewald, M.-A., & Bichler, S. (submitted). Beyond Linear Regression: Statistically Modeling Aptitude-Treatment Interactions and the Differential Effectiveness of Educational Interventions.

Haslbeck, J. M. B., Jover-Martinez, A., Roefs, A. J., Fried, E. I., Lemmens, L. H. J. M., Groot, E., & Edelsbrunner, P. A. (submitted). Comparing Likert and visual analogue scales in ecological momentary assessment. Preprint.

Schmidt, K.*, **Edelsbrunner, P. A.***, Merk, S., Rosman, T., & Cramer, C. (submitted). Individual differences in teachers' perception and interpretation of inferential statistics and effect sizes in press releases. *Authors contributed equally.

Costache, O., **Edelsbrunner, P. A**., Becker, E., Sticca, F., Staub, F. C., & Götz, T. (submitted). Who loses motivation and who keeps it up? Investigating student and teacher factors for student motivational development across multiple subjects. Preprint available from https://psyarxiv.com/xe7c2/

Schwichow, M., Brandenburger, M., Schalk, L., Nehring, A., Deiglmayr, A., Kranz, J., Möller, A., & **Edelsbrunner, P. A.** (submitted). Scientific reasoning and expertise: Investigating the domain-specificity of the control of variables strategy.

Kozlova, Z., Bach, K. M., **Edelsbrunner, P. A.**, & Hofer, S. I. (submitted). A Systematic Review on Individual Prerequisites for STEM Learning in Augmented Reality - Suggesting the "L-Tech Triad" for Future Studies. Preprint

Fendt, M., Muth, X., & **Edelsbrunner, P. A.** (submitted). Judging a Text by its Author - A Meta-Analysis of Interventions to Foster Source Credibility Assessment.

Köhler, C., **Edelsbrunner, P. A.,** Zitzmann, S., & Sengewald, M.-A. (submitted). How Should Pretest Measures Be Included in Multilevel Models When Examining the Effects of Teacher or School Variables on Learning?

THESES, NON PEER-REVIEWED, PREPRINTS, WORKING PAPERS & BLOG POSTS

Edelsbrunner, P. A., & Deiglmayr, A. (2021). Elementary school students' decision-making and justifications in experimental design.

Stern, E., **Edelsbrunner, P. A.**, & Neubauer, A. C. (2021). *Menschliche Intelligenz und ihre Messung*. Forschung & Lehre. bit.ly/ESPEAN_Intelligenz

Jarke, H., **Edelsbrunner, P. A.**, & Dablander, F. (2019). Die Wissenschaft hinter der Magie: Was ist der Zusammenhang zwischen Harry Potters Sprechendem Hut und unserer Persönlichkeit? [What is the association between Harry Potter's talking hat and our personality?] bit.ly/HarryPottDJE

Edelsbrunner, P. A. (2017). Bayesian Statistics: What is it and Why do we Need it? *JEPS Bulletin* (Nov 7th, 2014). bit.ly/PetyBayes

Edelsbrunner, P. A. (2017). *Domain-General and Domain-Specific Scientific Thinking in Childhood: Measurement and Educational Interplay*. Doctoral thesis, ETH Zurich.

Edelsbrunner, P. A. (2017). Introducing jamovi: Free and open statistical software combining ease of use with the power of R. JEPS Bulletin (Mar 23rd, 2017). bit.ly/JEPSPeterEJamovi

Edelsbrunner, P. A., & Thurn, C. (2015). Structural Equation Modeling: What is it, what does it have in common with hippie music, and why does it eat cake to get rid of measurement error? *JEPS Bulletin* (Dec 14th, 2015). bit.ly/SEMPeterE

Edelsbrunner, P. A. (2014). Bayesian Statistics: What is it and Why do we Need it? *JEPS Bulletin* (Nov 7th, 2014). bit.ly/PetyBayes

Edelsbrunner, P. A. (2012). *The Assessment of Spatial Ability in Adolescence*. Diploma thesis, University of Graz.

Edelsbrunner, P. A. (2012). Advice for the Next Generation of Researchers in Psychology from an Experienced Editor. *JEPS Bulletin* (Nov 30th, 2012). Available from http://blog.efpsa.org

Edelsbrunner, P. A., & Bohak, S. (2012). EFPSA-Kongress in Dänemark [The EFPSA-Congress in Denmark]. *Psychologie in Österreich*, *32*, 224.

Edelsbrunner, P. A. (2011). Research as an international project. *JEPS Bulletin* (Dec 1st, 2011). bit.ly/collaborazionePAE

GRANTS, SCHOLARSHIPS (Total sum received as PI/co-PI): CHF 1'108'682)

2023 Project Grant: *Modeling Heterogeneity in Education*. Grant for international conference received through Swiss National Science Foundation. CHF 8'118. PI.

	(02/2023-04/2023).
2022	Project Grant: *Improving Skills in Science Communication Through an Interdisciplinary Perspective*. Grant for interdisciplinary workshop received through networking fund by Department of Humanities, Behavioral and Social Sciences, ETH Zurich. CHF 2'500. Co-PI.
2021	Project Grant: *Conceptual Understanding of Electromagnetism Supported by Augmented Reality Experiments*. Swiss National Science Foundation. CHF 453'722. Co-PI.
2021	ETH Career Seed Grant: *Disentangling the Role of Inhibition in Handling Interference between Intuitive and Scientific Concepts about Science*. ETH Zurich Research Commission. CHF 30'000. PI. (01/2021-06/2022).
2020	Scientific exchange with Dr Denis Dumas, University of Denver, Colorado: *Decomposing the Cognitive Abilities Involved in Interference between Intuitive and Scientific Theories*. Schweizer Nationalfonds. CHF 4'800. PI.
2019	Project Grant: *Towards better understanding of computer-science concept knowledge and computer-science misconceptions in children.* Swiss National Science Foundation. CHF 593'102. Co-PI.
2015	Project Grant: *Peer Mentoring Group for Methods and Statistics*. Graduate Campus Zurich. CHF 9'960. Co-PI.
2014	Project Grant: *Peer Mentoring Group for Methods and Statistics.* Graduate Campus Zurich. CHF 8'080. Co-PI.
2012	Merit Scholarship; Faculty of Natural Sciences, University of Graz. EUR 700.
2011	Scholarship; Erasmus Student Exchange Programme, EUR 1350.

ACADEMIC SERVICES

Since 2025	Editorial board: *Thinking Skills and Creativity.*
Since 2025	Advisory board: *Zeitschrift für Bildungsforschung.*
Since 2022	Editorial board: *Frontline Learning Research*.
2021 - 2025	Guest editor: *Zeitschrift für Psychologie*. Topical Issue: Psychological Perspectives on Science Communication.
Since 2018	Editorial board: *European Journal of Psychological Assessment*.
2018 - 2024	Ethical review board: *Decision Science Laboratory* (DeSciL), ETH Zurich.
2019 - 2022	Lead guest editor: *European Journal of Psychological Assessment*. Special Issue: Psychological Assessment Across Borders.
2019 - 2022	Guest editor: *Frontiers in Psychology*. From Modern to Postmodern Psychology.
2016 - 2021	Associate editor: *Journal of European Psychology Students*.
2014 - 2021	President: *Association of Scientific Staff*, ETH Zurich.
2017 – 2018	Master Thesis Supervision: Tamara Krummenacher, University of Zurich.
2015 - 2017	Coordinating board: *EARLI SIG3: Special Interest Group on Conceptual Change*.
2014 - 2017	Delegate: *Department Conference*, ETH Zurich.
2015 - 2016	Director: *Peer Mentoring Group for Methods and Statistics*. University of Zurich, Switzerland.
2015 - 2016	Working group: *Good Scientific Practice*. ETH Zurich.
2015	Appointment committee: *Professor of Learning and Technology with a Focus on Higher STEM Education*. ETH Zurich.

2011 – 2012	Executive board: *European Federation of Psychology Students' Associations*.
2008 – 2010	Freshmen's Tutor: Department of Psychology, University of Graz.

PEER REVIEW

German Research Foundation [DFG], Assessment, Bilingualism: Language and Cognition, Brain Sciences, British Journal of Educational Psychology, CES Psicología, Cognitive Science Proceedings, Cognitive Science, Computers & Education, Computers in Human Behavior, Current Psychology, Developmental Psychology, Educational Psychology, Educational Psychology Review, Educational Research Review, European Journal of Health Psychology, European Journal of Psychological Assessment, European Journal of Psychology of Education, Frontiers in Education, Frontiers in Psychology, Frontline Learning Research, Gifted Child Quarterly, International Journal of Environmental Research and Public Health, International Journal of Knowledge Management, International Journal of STEM Education, Journal of Educational Psychology, Journal of European Psychology Students, Journal of Experimental Child Psychology, Journal of Modern Applied Statistical Methods, Learning and Individual Differences, Learning and Instruction, Mind, Brain & Education, Open Education Studies, PeerJ, Personality and Individual Differences, Proceedings of the National Academy of Sciences, Psychological Methods, Qeios, Science and Education, Social Science & Medicine, Social Sciences, Scientific Reports, Structural Equation Modeling, Thinking Skills and Creativity, Zeitschrift für Bildungsforschung, Zeitschrift für Pädagogische Psychologie

PROFESSIONAL MEMBERSHIPS

Society for Empirical Educational Research (GeBf), EARLI (SIG3; Conceptual Change), German Psychological Society (Fachgruppen PaePs & MethEval)

ORGANISATION OF CONFERENCES

2023	*1st Meeting on Modeling Individual Differences in Education*. ETH Zurich.
2021	Latsis Symposium: *Boosting Hidden Potentials: Scientific Insights into STEM Leaning*.
2018	*2nd PhD Summer School on Conceptual Change: Conceptual Change and Epistemic Cognition*. Klagenfurt, Austria.
2016	*1st PhD Summer School & 10th Conference on Conceptual Change: Conceptual Change meets Other Disciplines*. Florina, Greece.
2014	*8th EFPSA European Summer School: The Psychology of Work: Research on Occupation & Organisations*. Mellau, Austria.
2012	*6th EFPSA European Summer School: The Biased Brain: Research in Decision-Making*. Vila Nova de Foz Côa, Portugal.

INVITED TALKS

2024	*Long Live the Sum Score*. University of Education Karlsruhe, Germany. [slides]
2024	*The Suppression of Intuitive Conceptions about the World: Three Theoretical Perspectives and Methodological Approaches*. LMU Munich, Department of Psychology and Education.
2023	*Is Inhibition really an important construct for education, and what is it anyway? A cognitive-psychometric discussion based on new data from the statement-verification paradigm*. EARLI SIG 3 Conceptual Change Online Talks Series.
2022	*A Framework for the Statistical Modeling of Differential Effectiveness in Education*.

	University of Leipzig, Germany.
2022	*A Framework for the Statistical Modeling of Differential Effectiveness in Education*. Freiburg University of Education, Germany.
2022	*The Involvement of Cognitive Abilities in Interference between Intuitive and Scientific Knowledge about Science*. Department of Psychology, University of Graz, Austria.
2022	*Interference between Intuitive and Scientific Knowledge about Science: A Bayesian Hierarchical Diffusion Model*. Methods Interest Group of the Hector Research Institute of Education Sciences and Pscyhology, University of Tubingen, Germany.
2022	*Interference between Intuitive and Scientific Knowledge about Science: A State-Trait Approach*. Hector Research Institute of Education Sciences and Pscyhology, University of Tubingen, Germany.
2022	*Development of a Framework for the Statistical Modeling of Differential Effectiveness in Education*. Saarland University, Germany.
2022	*Development of a Framework for the Statistical Modeling of Differential Effectiveness in Education*. DIPF (German Institute for Pedagogical Research) Frankfurt, Germany.
2022	*The Domain-Specificity of Individuals' Scientific Thinking and Epistemic Cognition: Reviving Long-Standing Debates by Means of Latent Variable Modeling*. University of Denver.
2020	*Misinterpretations of non-significant p-values in educational research*. Ludwig Maximilian University of Munich.
2019	*Die Förderung naturwissenschaftlichen Inhaltswissens ab dem Grundschulalter: Empirische und Methodische Erkenntnisse aus der Schweizer MINT Studie [Promoting Science Content Knowledge From in Elementary School: Empirical and Methodological Insights from the Swiss MINT Study]*. Leibniz University Hannover, Germany.
2017	*Modeling Scientific Reasoning: Psychometric Issues and Developmental Heterogeneity*. Department of Psychology, University of Amsterdam, Netherlands.
2016	*General Factor Modelling in Psychology: Indeterminacy Problems and Alternative Routes*. Society for Cognitive Science and Philosophy, University of Brno, Czech Republic. [Video]
2015	*Rasch Modeling Practices and Theory Development: Psychometric Issues in Research on Scientific Reasoning.* University of Trier, Germany.
2015	*Reductionist Practices in Research on Scientific Thinking. How much can the Rasch Model tell us?* University of Munster, Germany.
2013	*Die Modellierung quantitativer und qualitativer Wissensentwicklung im Kindesalter [Modeling Quantitative and Qualitative Knowledge Development in Childhood]*. University of Munster, Germany.

CONTRIBUTIONS TO CONFERENCES

Edelsbrunner, P. A., Haslbeck, J. M. B., Jover-Martinez, A., Fried, E. I., Lemmens, L. H. J. M., Groot, E., & Roefs, A. J. (2025). Experimenteller Vergleich von Likert Skala und visueller Analogskala im Ecological Momentary Assessment von Affekt bei Studierenden Talk at the *13th Annual Meeting of the Society for Empirical Educational Science*, Mannheim, Germany.

Kozlova, Z., **Edelsbrunner, P.**, Hofer, S. I., Schumacher, R., & Stern, E. (2025). Developing Conceptual Knowledge and Representational Competence in Learning with Augmented Reality: Disentangling the Roles of Prior Knowledge and Cognitive Abilities. Talk at the *13th Annual Meeting of the Society for*

Empirical Educational Science, Mannheim, Germany.

Edelsbrunner, P. A., Bichler, S., Brod, G., Thurn, C. M., & Daguati, S. (2024). Research on Prior knowledge and learning – where to go next? Roundtable at the *13th International Conference on Conceptual Change*, Munich, Germany.

Fendt, M., Artmann, B., Scheibenzuber, C., **Edelsbrunner, P.**, & Nistor, N**.** (2024). A Lateral Reading Training Against Misinformation Based on Cognitive Apprenticeship. Talk at the *13th International Conference on Conceptual Change*, Munich, Germany.

Thurn, C., **Edelsbrunner, P.**, Berkowitz, M., Schalk, L., & Deiglmayr, A. (2024). A Model for Teaching for Conceptual Change? Six Challenges Regarding the ICAP Framework. Talk at the *13th International Conference on Conceptual Change*, Munich, Germany.

Steinmacher, B., Gränz, B., Lichtenberger, A., Altmeyer, K., Brünken, R., **Edelsbrunner, P. A.**, Hofer, S., Hoyer, C., Kuhn, J., Kozlova, Z., Küchemann, S., Malone, S., Schmid, R., Schumacher, R., Stern, E., Warkentin, M., & Vaterlaus, A. (2024). Augmented Reality in Electromagnetism: Which representations best support students' understanding? Talk at the *4th World Conference on Physics Education*, Kraków, Poland.

Edelsbrunner, P. A. (2024). Vorwisen modellieren – das geht doch ganz einfach? Discussion in the symposium *Prozessqualität im naturwissenschaftlichen Unterricht der Grundschule: Effekte von Diagnose- und Unterstützungsstrategien auf Konzeptlernen, Interesse und selbstbezogene Kognitionen* organized by Herrmann, A., at the *12th Annual Meeting of the Society for Empirical Educational Science*, Potsdam, Germany. [slides]

Edelsbrunner, P. A., & Frischkorn, G. (2024). Welche Inhibitionsprozesse tragen zur Unterdrückung überlernter Konzepte bei? Ein Bayesianisches hierarchisches Diffusionsmodell. Talk at the *12th Annual Meeting of the Society for Empirical Educational Science*, Potsdam, Germany. [slides]

Altmeyer, Kristin, **Edelsbrunner, P. A.**, Gränz, B., Hofer, S. I., Hoyer, C., Kuhn, J., Kozlova, Z., Küchemann, S., Lichtenberger, A., Malone, S., Schmid, R., Schumacher, R., Steinmacher, B., Stern, E., Vaterlaus, A., Warkentin, M., & Brünken, R. (2024). Augmented Reality for Visualizing Scientific Models in Physics Lab Work: The Role of (Multiple) Representations. Talk at the *12th Annual Meeting of the Society for Empirical Educational Science*, Potsdam, Germany.

Fendt, M., **Edelsbrunner, P. A.**, & Artmann, Benedikt (2024). Zwischen den Zeilen – Pädagogische Trainings zu Quellenkritik verbessern Glaubwürdigkeitseinschätzungen von Informationen. Talk at the *12th Annual Meeting of the Society for Empirical Educational Science*, Potsdam, Germany.

Edelsbrunner, P. A., Singmann, H., Dumas, D., & Frischkorn, G. (2023). What happens to conceptual knowledge during schooling? A Bayesian Hierarchical Diffusion Model. Talk at the *20th Biennial Conference of the European Association for Research in Learning and Instruction*, Thessaloniki, Greece.

Edelsbrunner, P. A., (2023). The Retest-Stability of Epistemic Beliefs about the Certainty of Knowledge in Science. Talk at the *20th Biennial Conference of the European Association for Research in Learning and Instruction*, Thessaloniki, Greece.

Thurn, C., **Edelsbrunner, P. A.**, Schumacher, R., & Stern, E. (2023). Preparation for Future Learning in Physics: The Importance of Overlap in Prior Knowledge. Talk at the *20th Biennial Conference of the European Association for Research on Learning and Instruction*, Thessaloniki, Greece.

Schneider, M., **Edelsbrunner, P. A.,** & Simonsmeier, B. The Internal Consistency of Content Knowledge and How it is Affected by Learning: A Meta-Analysis. Talk at the *20th Biennial Conference of the European Association for Research in Learning and Instruction*, Thessaloniki, Greece.

Edelsbrunner, P.A., (2023). Three Approaches to the Modeling of Aptitude-Treatment Interactions and the Differential Effectiveness of Education. Talk at the *1st Meeting on Modeling Individual Differences in Education*, Zurich, Switzerland.

Hartmann, M., **Edelsbrunner, P. A.**, Hielscher, M., Paparo, G., Doebeli Honegger, B., & Marinus, E. (2022). Programming concepts and misconceptions in grade 5 and 6 children: Developing and testing a new assessment tool. Talk at the *5° Convegno sulle didattiche disciplinary*, Locarno, Switzerland.

Edelsbrunner, P.A., & Singmann, H. (2022). The suppression of Intuitive Theories in Science: A Statistical Model of the Cognitive Process. Talk at the *12th International Conference on Conceptual Change,* Zwolle, the Netherlands.

Edelsbrunner, P.A. (2022). A Diffusion Model-Approach to the Retrieval of Conceptual Knowledge in Science. Poster at the *10th Annual Meeting of the Society for Empirical Educational Science,* Bamberg, Germany.

Edelsbrunner, P.A. (2022). A Diffusion Model-Approach to the Retrieval of Conceptual Knowledge in Science. Poster at the *10th Annual Meeting of the Society for Empirical Educational Science,* Bamberg, Germany.

Tetzlaff, L., **Edelsbrunner, P.A.**, Schmitterer, A., Hartmann, U., & Brod, G., (2022). Differenzierung und Individualisierung im Unterricht [Differentiation and Individualisation in Instruction] Talk at the *10th Annual Meeting of the Society for Empirical Educational Science,* Bamberg, Germany.

Schmidt, K., **Edelsbrunner, P.A.**, Rosman, T., Cramer, C., & Merk, S. (2022). Wie interpretieren Lehrkräfte verschiedene Beschreibungen wissenschaftlicher Evidenz? [How do Practicing Teachers Interpret Different Descriptions of Scientific Evidence?] Talk at the *10th Annual Meeting of the Society for Empirical Educational Science,* Bamberg, Germany.

Thurn, C. M., Hänger, B., **Edelsbrunner, P. A.,** Deiglmayr, A., Schumacher, R., Stern, E. (2022). Network models of conceptual understanding in magnetism: Network analysis is a useful proxy to model students' knowledge. Poster at the *Meeting of the Junior Researchers of EARLI*, Portugal.

Edelsbrunner, P. A. (2021)**.** Der Miteinbezug von aggregierten Prätest-Werten auf Gruppenebene: Wann ist dieser notwendig und wann (un-)angebracht? Talk at the *Thementagung Methodische Herausforderungen in der empirischen Bildungsforschung*.

Edelsbrunner, P. A., & Thurn, C. M. (2021). Current Debates in Applied Statistics and Psychometrics: Implications for Educational Research. Roundtable discussion at the 19th Biennial Conference of the European Association for Research in Learning and Instruction, Gothenburg, Sweden.

Bennet, K. A., Kaikhosroshvili, K., **Edelsbrunner, P. A.**, & Bichler, S. (2021). Scaffolds to advance revision in science: Meta-cognitive knoweldge about revision versus generating content understanding. Talk at the *2021 Annual Meeting of the International Society of the Learning Sciences*.

Malone, S., **Edelsbrunner, P. A.**, Lichtenberger, A., Küchemann, S., Kuhn, J., Vaterlaus, A., Stern, E., Schmid, R., Schumacher, R., Altmeyer, K., & Brünken, R. (2021). The Relation of Representational Competence and Conceptual Knowledge about Electromagnetism. Poster at the *19th Biennial Conference of the European Association for Research in Learning and Instruction*, Gothenburg, Sweden.

Thurn, C. M., & **Edelsbrunner, P. A.** (2021).Making the most out of non-significant p-values. Workshop at the 19th Biennial Conference of the European Association for Research in Learning and Instruction, Gothenburg, Sweden.

Lenzer, S., **Edelsbrunner, P. A.**, & Nehring, A. (2021). Which NOSI views and epistemic beliefs are the best predictors of scientific reasoning competencies? Talk at the *14th Conference of the European Science Education Research Association*, Braga, Portugal.

Luo, M., **Edelsbrunner, P. A.**, Siebert, J.S., Martin, M., Aschwanden, D. (2020). Bidirectional Longitudinal Associations Between Cognitive Abilities and Social Relationships in Old Age: Evidence From the ILSE Study Across 12 Years. In Hülür, G. (Chair), *Contemporary Approaches to the Study of Cognitive Aging*. Symposium at the *Annual Scientific Meeting of the Gerontological Society of America* (GSA) in Philadelphia, Pennsylvania.

Schalk, L., Deiglmayr, A., **Edelsbrunner, P. A.**, Markwalder, U., Peteranderl, S., Schumacher, R., & Stern, E. (2020). Spezifische Effekte und Langzeiteffekte von grundlegendem Physikunterricht in der Primarschule. [Specific effects and long-term effects of basic Physics instruction in primary school]. Talk at the *Jahreskongress 2020 der Schweizerischen Gesellschaft für Bildungsforschung*, Biel, Switzerland.

Edelsbrunner, P. A. (2019). Model Selection Criteria for Latent Transition Analyses: A Field-Specific Monte Carlo Simulation-Study for Educational Research. Talk at the *1st Symposium on Classification Methods in the Social and Behavioral Sciences*, Tilburg, the Netherlands.

Edelsbrunner, P. A., & Thurn, C. (2019). Misinterpretations of non-significant p-values: A review and a competence model for teaching. Talk at the *14th Meeting of the Section for Methods and Evaluation of the German Association of Psychology*, Kiel, Germany.

Edelsbrunner, P. A., Flaig, M., & Schneider, M. (2019). Fit-Indizes für latente Transitionsanalysen zur Untersuchung von Lernverläufen über die Zeit: Eine Monte Carlo-Simulationsstudie. Talk at the *14th Meeting of the Section for Methods and Evaluation of the German Association of Psychology*, Kiel, Germany.

Edelsbrunner, P.A., Grimm, H., & Moeller, K. (2019). Application of a Latent Transition Analysis to Model the Interaction of Instructional Scaffolding with Prior Knowledge and Inhibition in Third-Graders' Acquisition of Hypothesis-Based Reasoning. Talk at the *Joint Conference of the Sections Developmental Psychology & Educational Psychology*, Leipzig, Germany.

Edelsbrunner, P. A., Stern, E., & Thurn, C. (2019). Beyond Cohen's rule of thumb: When is an Intervention Effective from a Statistical Point of View? Position paper at the *Joint Conference of the Sections Developmental Psychology & Educational Psychology*, Leipzig, Germany.

Edelsbrunner, P. A., Griffin, L. M., Hernandez Martin, M., Kucharsky, Š., Peycheva, E. D., Soyyılmaz, D., & Vaupotič, N. (2019). Epistemic Change in the First Year of Studying Psychology in Six European Countries. Talk at the *18th Biennial Conference of the European Association for Research in Learning and Instruction. Aachen, Germany.*

Edelsbrunner, P. A. (2019). The Statistical Modeling of Conceptual Change. Poster at the *18th Biennial Conference of the European Association for Research in Learning and Instruction. Aachen, Germany.*

Flaig, M., **Edelsbrunner, P. A.**, & Schneider, M. (2019). Latente Transitionsanalysen zur Untersuchung von Lernverläufen über die Zeit: Eine Simulationsstudie. Talk at the *7th Annual Meeting of the Society for Empirical Educational Science*, Cologne, Germany.

Grimm, H., **Edelsbrunner, P. A.**, & Moeller, K. (2019). Gelingt die Förderung hypothesenbezogener Schlussfolgerungen bei heterogenen Lernvoraussetzungen durch den Einsatz von Scaffolding? Eine latente Transitionsanalyse. Talk at the *7th Annual Meeting of the Society for Empirical Educational Science*, Cologne, Germany.

Thurn, C. M., & **Edelsbrunner, P. A.** (2019). Die Konsequenzen von Fehlinterpretationen nicht-signifikanter p-Werte in der Bildungsforschung: Ein Review. Talk at the *7th Annual Meeting of the Society for Empirical Educational Science*, Cologne, Germany.

Bernholt, A., Kampa, N., Lindfors, M., & **Edelsbrunner, P. A.** (2019). Development of students' epistemic beliefs profiles across secondary school. In *18th Biennial EARLI Conference for Research on Learning and Instruction*, Aachen, Germany, Aug 12-16, 2019 (pp. 131-132). RWTH Aachen University.

Edelsbrunner, P. A., & Thurn, C. M. (2018). Misinterpretations of non-significant p-values: Estimating their frequency and potential consequences for educational theory and policy. Digital poster at the *51st Congress of the German Psychological Society*, Frankfurt, Germany. https://osf.io/g5paq/

Edelsbrunner, P. A., **&** Thurn, C. M. (2018). Conceptual Notions of p-values in Educational Research. Talk at the *11th International Conference on Conceptual Change*, Klagenfurt, Austria.

Edelsbrunner, P. A., Soyyılmaz, D., Griffin, L. M., Hernández Martin, M., Kucharsky, Š., Peycheva, E. D., &

Vaupotič, N., (2018). Misconceptions about Statistical Inference in Psychology Students from Four European Countries: Correlations with relevant Learning Experiences. Talk at the *11th* International *Conference on Conceptual Change.* Klagenfurt, Austria.

Edelsbrunner, P.A., & Thurn, C. M. (2018). The Prevalence of Unfounded (Statistical) Inferences Based on non-significant p-values in Educational Psychology. Talk at the *Research Synthesis Conference,* Trier, Germany.

Edelsbrunner, P. A., Soyyılmaz, D., Griffin, L. M., Hernández Martin, M., Kucharsky, Š., Peycheva, E. D., & Vaupotič, N., (2018). Die Entwicklung des wissenschaftlichen Denkens bei Erstjahres-Psychologiestudierenden aus sechs Europäischen Ländern. Talk at the *42nd Meeting of the Austrian Association of Psychology.* Linz, Austria.

Edelsbrunner, P. A., Soyyılmaz, D., Griffin, L. M., Hernández Martin, M., Kucharsky, Š., Peycheva, E. D., & Vaupotič, N., (2017). Misconceptions about Statistical Inference in Psychology Students from Four European Countries: Correlations with relevant Learning Experiences. Talk at the *Pedagogical and Developmental Psychology Meeting.* Munster, Germany.

Edelsbrunner, P. A., & Deiglmayr, A. (2017). Argumentation about the Control of Variables-Strategy: A large-scale Study in Primary School. Talk at the *17th Biennial Conference of the European Association for Research in Learning and Instruction.* Tampere, Finland.

Schalk, L., Stern, E., Kapur, M., Grabner, R. H., Kokkonen, T., **Edelsbrunner, P. A.,** Renkl, A., Greiff, S., & McGrane, J. (2017). From neurons to nations and back: Translating across levels of explanation in educational research. Roundtable at the *17th Biennial Conference of the European Association for Research in Learning and Instruction.* Tampere, Finland.

Ziegler, E., **Edelsbrunner, P. A.,** & Star, J. (2017). Confronting confusion of similar algebraic concepts by teaching multiplication before addition. Talk at the *17th Biennial Conference of the European Association for Research in Learning and Instruction.* Tampere, Finland.

Peteranderl, S., Deiglmayr, A., Stern, E., **Edelsbrunner, P. A.,** & Schumacher, R. (2017). Assessment of misconceptions about experimentation in primary school children. Talk at the *17th Biennial Conference of the European Association for Research in Learning and Instruction.* Tampere, Finland.

Schumacher, R., **Edelsbrunner, P. A.**, Schalk, L., Deiglmayr, A., & Stern, E. (2017). How regular elementary school teachers can boost their student's conceptual knowledge in physics Talk at the *17th Biennial Conference of the European Association for Research in Learning and Instruction.* Tampere, Finland.

Edelsbrunner, P. A., Soyyılmaz, D., Griffin, L. M., Hernández Martin, M., Kucharsky, Š., Peycheva, E. D., & Vaupotič, N., & (2017). Scientific Thinking in Psychology Students: A two-wave panel study. Poster & Talk at the *6st Junior Researcher Programme Conference*, Cambridge, UK.

Soyyılmaz, D., Griffin, L. M., Hernández Martin, M., Kucharsky, Š., Peycheva, E. D., Vaupotič, N., & **Edelsbrunner, P. A.** (2017). Dare to Think Scientifically: A two-wave panel study. Poster at the *1st Junior Researcher Programme jMeeting*, Madrid, Spain.

Edelsbrunner, P. A., Deiglmayr, A., Schalk, L., Schumacher, R., & Stern, E. (2016). Eine grossangelegte Untersuchung des Verständnisses und der Argumentation zu experimentellen Designs bei Grundschulkindern [A large-scale investigation of primary school students' understanding and argumentation about experimental designs]. Talk at the *50th Conference of the German Association of Psychology*, Leipzig, Germany.

Edelsbrunner, P. A., & Dablander, F. (2016). Psychometric Issues in Research on Scientific Thinking:

What can the Rasch model tell us? Talk at the *50th Conference of the German Association of Psychology*, Leipzig, Germany.

Stern, E., Schumacher, R., **Edelsbrunner, P. A.,** Schalk, L., & Deiglmayr, A. (2016). The impact of domain-specific learning in physics on scientific reasoning skills in elementary school children. Talk at the *31st International Congress of Psychology*, Yokohama, Japan.

Edelsbrunner, P. A. (2016). Quantitative Approaches to Scientific Thinking and Conceptual Change in Childhood. Talk at the *1st PhD Summer School on Conceptual Change*, Florina, Greece.

Ziegler, E., **Edelsbrunner, P. A.,** & Stern, E. (2016). Instruction or discovering of crucial principles in mathematics learning. Talk at the *11th Biennal Conference EARLI SIG11- Teaching and Teacher Education: Diversity and Inclusion as a Challenge for Teacher Education*. Zurich, Switzerland.

Edelsbrunner, P. A., & Dablander, F. (2016). Zugänge zur Rasch Modellierung in der Forschung zum

Wissenschaftlichen Denken: Eine Review- und Simulationsstudie [Approaches to Rasch Modeling in research on scientific thinking: A review and simulation study]. Poster at the *12th Conference of the Austrian Association for Psychology*. Innsbruck, Austria.

Edelsbrunner, P. A., Schalk, L., Schumacher, R., & Stern, E. (2015). Experimentation Skills and Conceptual Knowledge Development in Early Science Education: A Latent Transition Analysis. Talk at the *12th Meeting of the Interest Group Methods & Evaluation of the German Psychological Society.* Jena, Germany. [Video]

Edelsbrunner, P. A., Schalk, L., Schumacher, R., & Stern, E. (2015). The influence of experimentation skills on the development of physics knowledge in primary school. Talk at the *16th Biennial Conference of the European Association for Research in Learning and Instruction.* Limassol, Cyprus.

Stern, E., **Edelsbrunner, P. A.**, Schumacher, R., Schalk, L., & Deiglmayr, A. (2015) Physics instruction in elementary school can boost general experimentation skills. Talk at the *16th Biennial Conference of the European Association for Research in Learning and Instruction.* Limassol, Cyprus.

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