

Lena Kristina Keller

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EDUCATION

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| Dr. phil. | Psychology, Freie Universität Berlin, Germany, 2020 |
| M.Sc. | Psychology, University of Trier, Germany, 2015 |
| B.Sc. | Psychology, Goethe University Frankfurt am Main, Germany, 2012 |

PROFESSIONAL POSITIONS AND RESEARCH VISITS

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| 2025 – present | Kiel University , Germany Assistant Professor (Tenure Track) for Educational Psychology, Institute for Psychology of Learning and Instruction (IPL) |
| 2024 | Northwestern University , Evanston, USA Research stay with Prof. Larry V. Hedges |
| 2020 – 2025 | University of Potsdam , Germany Postdoctoral Researcher, Chair of Quantitative Methods in Educational Sciences, Prof. Martin Brunner |
| 2019 – 2020 | University of Potsdam , Germany Predoctoral Researcher, Chair of Quantitative Methods in Educational Sciences, Prof. Martin Brunner |
| 2015 – 2020 | International Max Planck Research School on the Life Course (LIFE) , Max Planck Institute for Human Development (Berlin), with affiliation to the Freie Universität Berlin (Chair of Evaluation and Quality Management in Education), supervisors: Prof. Martin Brunner & Prof. Franzis Preckel |
| 2017 | Monash University , Melbourne, Australia Research stay with Dr. Leonie Kronborg |
| 2016 | University of Michigan , Ann Arbor, USA Research stay with Prof. Kai S. Cortina University of California, Irvine , USA Research stay with Prof. Jacquelynne S. Eccles |

PUBLICATIONS (PEER-REVIEWED)

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|------|---|
| 2025 | Metzner, O., Wang, Y., Symes, W., Huang, Y., Keller, L. , de Melo, G., & Lazarides, R. (2025). A process-oriented perspective on pre-service teachers' self-efficacy and their motivational messages: Using large language models to classify teachers' speech. <i>British Journal of Educational Psychology</i> , 00, 1–25. https://doi.org/10.1111/bjep.12779 |
| 2023 | Chesaniuk, M., Haering, S., Roseman, J., Straßburger, V. M., Diversity Assessment Working Group , Stadler, G. (2023). Closing the gender and diversity data gap in the health sciences proposal for a Diversity Minimal Item Set (DiMIS). <i>Sustainable Chemistry and Pharmacy</i> , 33, 101072. https://doi.org/10.1016/j.scp.2023.101072 |

- Keller, L.**, Lüdtke, O., Preckel, F., & Brunner, M. (2023). Educational inequalities at the intersection of multiple social categories: An introduction and systematic review of the multilevel analysis of individual heterogeneity and discriminatory accuracy (MAIHDA) approach. *Educational Psychology Review*, 35, 31. <https://doi.org/10.1007/s10648-023-09733-5>
- Brunner, M., **Keller, L.**, Stallasch, S. E., Kretschmann, J., Hasl, A., Preckel, F., Lüdtke, O., & Hedges, L. V. (2023). Meta-analyzing individual participant data from studies with complex survey designs: A tutorial on using the two-stage approach for data from educational large-scale assessments. *Research Synthesis Methods*, 14(1), 5–35. <https://doi.org/10.1002/jrsm.1584>
- 2022 **Keller, L.**, Cortina, K. S., Müller, K., & Miller, K. F. (2022). Noticing and weighing alternatives in the reflection of regular classroom teaching: Evidence of expertise using mobile eye-tracking. *Instructional Science*, 50, 251–272. <https://doi.org/10.1007/s11251-021-09570-5>
- Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2022). Top-performing math students in 82 countries: An integrative data analysis of gender differences in achievement, achievement profiles, and achievement motivation. *Journal of Educational Psychology*, 114(5), 966–991. <https://doi.org/10.1037/edu0000685>. Preprint: 10.31234/osf.io/73wap
- 2021 **Keller, L.**, Preckel, F., & Brunner, M. (2021). Nonlinear relations between achievement and academic self-concepts in elementary and secondary school: An integrative data analysis across 13 countries. *Journal of Educational Psychology*, 113(3), 585–604. <https://doi.org/10.1037/edu0000533>. Preprint: 10.31234/osf.io/8z563
- 2020 Oppermann, E., **Keller, L.**, & Anders, Y. (2020). Geschlechtsunterschiede in der kindlichen MINT-Lernmotivation: Forschungsbefunde zu bestehenden Unterschieden und Einflussfaktoren [Gender differences in children's STEM motivation: A review of the research literature]. *Diskurs Kindheits- und Jugendforschung / Discourse. Journal of Childhood and Adolescence Research*, 1, 38–52. <https://doi.org/10.3224/diskurs.v15i1.04>
- 2019 Matheis, S., **Keller, L. K.**, Kronborg, L., Schmitt, M., & Preckel, F. (2019). Do stereotypes strike twice? Giftedness and gender stereotypes in pre-service teachers' beliefs about student characteristics in Australia. *Asia-Pacific Journal of Teacher Education*, 48(2), 213–232. <https://doi.org/10.1080/1359866X.2019.1576029>
- 2017 Schmidt, I., Brunner, M., **Keller, L.**, Scherrer, V., Wollschläger, R., Baudson, T. G., & Preckel, F. (2017). Profile formation of academic self-concept in elementary school students in grades 1 to 4. *PLoS ONE* 12(5): e0177854. <https://doi.org/10.1371/journal.pone.0177854>

EDITORIAL EXPERIENCE

- 2024 Guest Editor (together with Elisa Oppermann and Camilla Rjosk) of a Special Issue in the German Journal of Developmental and Educational Psychology: Intersectionality in Educational Contexts: Quantitative Approaches and Findings

PUBLICATIONS (NOT PEER-REVIEWED)

- 2024 **Keller, L.**, Oppermann, E., & Rjosk, C. (2024). Intersectionality in educational contexts: Quantitative approaches and findings [Editorial]. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie / German Journal of Developmental and Educational Psychology*, 56(1-2), 1–6. <https://doi.org/10.1026/0049-8637/a000293>

- 2020 **Keller, L. K.** (2020). *The interplay of achievement and achievement motivation: Gender differences in math top-performers and functional relations*. [Doctoral dissertation, Freie Universität Berlin]. Refubium. https://refubium.fu-berlin.de/bitstream/handle/fub188/28167/Dissertation_Keller.pdf?sequence=3&isAllowed=y
- 2018 Oppermann,* E. & **Keller,* L.** (2018). *Geschlechtsunterschiede in der frühen MINT-Bildung: Forschungsüberblick [Gender Differences in Early STEM Education: A Research Review]*. Stiftung Haus der kleinen Forscher. Available at: www.haus-der-kleinen-forscher.de. *shared first authorship

CONFERENCE TALKS

- 2025 **Keller, L.**, Preckel, F., Götz, T., Lüdtke, O., & Brunner, M. (2025, January 27-29). The relationship between math anxiety and math achievement: New perspectives from an individual participant data meta-analysis [Conference presentation]. Twelfth Meeting of the Society for Empirical Educational Research (GEBF), Mannheim, Germany
- 2024 **Keller, L.**, Preckel, F., Götz, T., Lüdtke, O., & Brunner, M. (2024, September 16-19). *The relationship between math anxiety and math achievement: New perspectives from combining individual participant data and aggregated data in a meta-analysis* [Conference presentation]. 53rd DGPs Congress/15th ÖGP Conference, Vienna, Austria
- Urban, J., Lechner, C., **Keller, L.**, Brunner, M., Lüdtke, O., & Preckel, F. (2024, September 16-19). *Intersectionality in academic achievement* [Conference presentation]. 53rd DGPs Congress/15th ÖGP Conference, Vienna, Austria
- Keller, L.**, Lüdtke, O., Preckel, F. & Brunner, M. (2024, September 3-5). *How can intersectionality be analyzed quantitatively? Introducing the Multilevel Analysis of Individual Heterogeneity and Discriminatory Accuracy (MAIHDA) approach* [Conference presentation]. Future Education Conference, Graz, Austria.
- Metzner, O., Symes, W., Wang, Y., Huang, Y., **Keller, L.**, & Lazarides, R. (2024, August 28-30). *Relations of pre-service teachers' self-efficacy and their use of motivational messages* [Conference presentation]. International Conference on Motivation & Emotion (ICM), Bern, Switzerland
- Grünthal, S., **Keller, L.**, Kretschmann, J., Dumont, H., & Brunner, M. (2024, March, 18–20). *If they only want to? An Individual Participant Data meta-analysis of the relationship between socio-economic status and student achievement motivation* [Conference presentation]. Eleventh Meeting of the Society for Empirical Educational Research (GEBF), Potsdam, Germany
- 2023 **Keller, L.**, Lüdtke, O., Preckel, F. & Brunner, M. (2023, September 18–20). *MAIHDA: Presentation of an intersectional multi-level approach to examine educational inequalities* [Conference presentation]. 19th Division Conference on Educational Psychology (PAEPS) of the German Psychological Society (DGPs), Kiel, Germany
- Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2023, August 22–26). *Mathematically talented female and male students: Equally motivated in math and science?* [Conference presentation]. Twentieth Biennial EARLI Conference, Thessaloniki, Greece
- Keller, L.**, Lüdtke, O., Preckel, F. & Brunner, M. (2023, April 13–16). *Modelling educational inequalities at the intersection of multiple social categories: Introducing a novel multilevel approach* [Conference presentation]. American Educational Research Association (AERA) Annual Meeting, Chicago, USA

- 2022 **Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2022, July 21–23). *Gender differences in top-performing math students' achievement motivation in math and science: An individual participant data (IPD) meta-analysis* [Conference presentation]. Sixth Gender & STEM conference, Munich, Germany
- Keller, L.**, Cortina, K. S., Müller, K., & Miller, K. F. (2022, April 21–26). *Noticing and weighing alternatives in the reflection of teaching: Evidence of expertise using mobile eye-tracking* [Conference presentation]. American Educational Research Association (AERA) Annual Meeting, San Diego, USA
- Keller, L.**, Lüdtke, O., Preckel, F., & Brunner, M. (2022, March 9–11). *Gender and beyond: Introducing a multilevel approach for modeling educational inequalities on the inter-section of multiple social identities* [Online conference presentation]. Ninth Meeting of the Society for Empirical Educational Research (GEBF), Bamberg, Germany
- 2021 **Keller, L.**, Preckel, F., & Brunner, M. (2021, December 2–3). *Everything linear? An investigation of the functional relation between achievement and academic self-concept in an integrative data analysis* [Online conference presentation]. Methodological Challenges in Empirical Educational Research (digiGEBF)
- Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2021, May 17–21). *Gender differences in top-performing math students' achievement and motivation: An IPD meta-analysis* [Online conference presentation]. Research Synthesis & Big Data Conference, ZPID
- 2020 **Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2020, April 17–21). *Top-performing math students worldwide: A meta-analysis of gender differences in achievement and motivation* [Conference presentation]. American Educational Research Association (AERA) Annual Meeting, San Francisco, USA. (Cancelled due to COVID-19 pandemic)
- Keller, L.**, Preckel, F., & Brunner, M. (2020, March 25–27). *Everything linear? An investigation of the functional relation between achievement and academic self-concept in an integrative data analysis* [Conference presentation]. Seventh Meeting of the Society for Empirical Educational Research (GEBF), Potsdam, Germany. (Cancelled due to COVID-19 pandemic)
- 2019 Preckel, F., **Keller, L.**, Eccles, J. S., & Brunner, M. (2019, August 12–16). *Top 5% math students worldwide: A meta-analysis of gender differences in achievement and motivation* [Conference presentation]. Eighteenth Meeting of the European Association for Research on Learning and Instruction (EARLI), Aachen, Germany
- 2018 **Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2018, February 15–17). *Who are the top-performers in mathematics? Gender differences in achievement and achievement motivation in top-performing mathematics students worldwide* [Conference presentation]. Sixth Meeting of the Society for Empirical Educational Research (GEBF), Basel, Switzerland
- 2017 **Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2017, September 11–14). *Top in math and even better in reading? An international meta-analysis of gender differences in achievement and achievement motivation in top-performing math students* [Conference presentation]. Division Conference on Developmental Psychology and Educational Psychology (PAEPSY) of the German Psychological Society (DGPs), Münster, Germany
- Keller, L.**, Preckel, F., Eccles, J. S., & Brunner, M. (2017, July 20–23). *Top-performing math students' achievement and achievement motivation around the world: A meta-*

analysis [Conference presentation]. Twenty-second Biennial World Conference des World Council for Gifted and Talented Children (WCGTC), Sydney, Australia

Keller, L., Preckel, F., & Brunner, M. (2017, March 13–15). *Everything linear? The functional relation between achievement and academic self-concept in younger and older students from an international perspective* [Conference presentation]. Fifth Meeting of the Society for Empirical Educational Research (GEBF), Heidelberg, Germany

2016 **Keller, L.,** Preckel, F., Eccles, J. S., & Brunner, M. (2016, September 12–13). *Characteristics of mathematically top-performing girls and boys around the world: Gender differences in achievement and achievement motivation* [Conference presentation]. Third annual conference of the Berlin Interdisciplinary Education Research Network (BIEN), Berlin, Germany

2015 Schmidt, I., Scherrer, V., **Keller, L.,** & Preckel, F. (2015, August 20–24). *Academic self-concept in elementary school: Integrating the nested Marsh/Shavelson and the I/E model to understand its development* [Conference presentation]. Eighth SELF Biennial International Conference, Kiel, Germany

Schmitt, I., Scherer, V., **Keller, L.,** & Preckel, F. (2015, March 11–13). *The formation of self-concept profiles in elementary school students: Testing of the nested Marsh/Shavelson model* [Conference presentation]. Third Meeting of the Society for Empirical Educational Research (GEBF), Bochum, Germany

CHAired SYMPOSIA

2022 **Keller, L.,** & Brunner, M. (2022). *Intersectionality in educational contexts: Quantitative approaches and findings*. Ninth Meeting of the Society for Empirical Educational Research (GEBF), Bamberg, Germany

2021 Stallasch, S., **Keller, L.,** & Brunner, M. (2021). *From tools to theories: How do statistical models influence our knowledge gain?* Methodological Challenges in Empirical Educational Research (digiGEBF)

2020 Stallasch, S., **Keller, L.,** & Brunner, M. (2020). *From tools to theories: How do statistical models influence our knowledge gain?* Seventh Meeting of the Society for Empirical Educational Research (GEBF), Potsdam, Germany. (Canceled due to COVID-19 pandemic)

2017 **Keller, L.,** & Oppermann, E. (2017). *Domain-specific motivation in educational pathways*. Fifth Meeting of the Society for Empirical Educational Research (GEBF), Heidelberg, Germany

INVITED TALKS

2024 **Keller, L.** (2024, January 18). *The Multilevel Analysis of Individual Heterogeneity and Discriminatory Accuracy (MAIHDA) Approach: An intersectional multilevel approach to study educational inequalities*. Colloquium of the Department of Psychology IV: Educational Psychology, University of Würzburg, Germany

2023 **Keller, L.** (2023, December 6). *International perspectives on giftedness*. Certificate program in gifted education and talent development. University of Tübingen, Hector Research Institute of Education Sciences and Psychology, Tübingen, Germany

- 2020 **Keller, L.** (2020, December 2). *Nonlinear relations between achievement and academic self-concepts in elementary and secondary school: An integrative data analysis across 13 countries*. Colloquium of the Institut für Qualitätsentwicklung im Bildungswesen (IQB), Berlin, Germany
- 2017 **Keller, L.** (2017, August 9). *Who are the top-performers in mathematics? Gender differences in achievement and achievement motivation in top-performing mathematics students worldwide*. Faculty of Education Research Webinar, Monash University, Melbourne, Australia
- Keller, L.** (2017, February 2). *Grade level and profile predict educational and occupational outcomes 40 years later*. Colloquium of the Chair of Psychological Research Methods, Humboldt-Universität zu Berlin, Berlin, Germany.

PANEL DISCUSSIONS

- 2023 Spierings, N., Gross, C., Salikutluk, Z., & **Keller, L.** (2023, November 13). *Doing Quantitative Intersectional Research*. Berlin Institute for Empirical Integration and Migration Research (BIM), Berlin, Germany

SCHOLARSHIPS & AWARDS

- 2023 Travel grant from the German Academic Exchange Service (DAAD) to attend the 20th Biennial EARLI Conference, Thessaloniki, Greece
- 2022 Publication Award for Young Scientists (Postdocs) by the Society for Empirical Educational Research (GEBF)
Awarded for “Top-performing math students in 82 countries: An integrative data analysis of gender differences in achievement, achievement profiles, and achievement motivation,” published in *Journal of Educational Psychology*
- 2020 Travel grant from the German Academic Exchange Service (DAAD) to attend the American Educational Research Association (AERA) Annual Meeting, San Francisco, USA (canceled due to COVID-19 pandemic)
- 2017 Travel grant from the German Academic Exchange Service (DAAD) to attend the 22nd Biennial Conference of the World Council for Gifted and Talented Children (WCGTC), Sydney, Australia
- 2016 Best Presentation Award, 3rd Annual Meeting of the Berlin Interdisciplinary Education Research Network (BIEN), Berlin
- 2015 – 2018 PhD scholarship, International Max Planck Research School on the Life Course (LIFE)
- 2009 – 2015 Scholarship by the German National Academic Foundation (Studienstiftung des deutschen Volkes)
- 2013 – 2014 Study abroad scholarship by the German National Academic Foundation (Studienstiftung des deutschen Volkes)

TEACHING EXPERIENCE

- 2025 1 seminar: Understanding motivation: Theoretical foundations, empirical research, and classroom practice (Master of Education, Kiel University)
- 1 seminar: Motivation-supportive teaching (Master of Education, Kiel University)

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| 2024 | 1 seminar: Addressing heterogeneity in the classroom with personalized learning: Application of educational psychological assessment and digital technologies (Bachelor of Education, University of Bielefeld) |
| 2023 – 2024 | 3 seminars: Measurement instruments: Design, test theory, and application (Bachelor of Educational Sciences, University of Potsdam) |
| 2022 – 2024 | 3 seminars: Diversity and inclusion in the classroom: Teaching students with different learning prerequisites (Bachelor of Education, University of Bielefeld) |
| 2019 – 2021 | 4 seminars: Introduction to data analysis in R (Bachelor of Educational Sciences, University of Potsdam) |
| 2018 | 1 seminar: Test development and diagnostic testing (Bachelor of Educational Sciences, Freie Universität Berlin) |
| 2017 | 2 seminars: Gender-specific aspects in education and educational trajectories (Bachelor of Educational Sciences, Freie Universität Berlin) |

WORKSHOPS TAUGHT

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| 2025, Mar | Graphics in R, FDZ Spring Academy, IQB, Humboldt-Universität zu Berlin, Germany |
| 2024, Mar | Graphics in R, Young Researchers' Meeting of the Society for Empirical Educational Research (GEBF), Potsdam, Germany |
| 2022 – 2024 | 3 workshops: Integrative data analysis with large-scale assessment data, FDZ Fall Academy, IQB, Humboldt-Universität zu Berlin, Germany |
| 2021, Jun | Creating publication-ready graphics in R, University of Potsdam, Germany |

SUPERVISIONSHIP

Master's theses in the programs educational sciences, teacher education, and psychology (ongoing and completed theses)

First advisor: 4

Second advisor: 2

Bachelor's theses in the programs educational sciences, teacher education, and psychology (ongoing and completed theses)

First advisor: 7

Second advisor: 12

UNIVERSITY AND ACADEMIC SERVICE

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| 2025 | Member of the Poster Prize Committee at the Twelfth Meeting of the Society for Empirical Educational Research (GEBF), Mannheim, Germany |
| 2022 – 2024 | Deputy decentralized equal opportunities officer for the Faculty of Human Sciences, University of Potsdam |
| 2022 – 2024 | Member of the Commission for Equal Opportunities (CGK), University of Potsdam |
| 2022 – 2023 | Member of the Twitter team for the Section Educational Psychology of the German Psychological Society (DGPs) |

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| 2019 – 2021 | Member of several appointment committees, University of Potsdam |
| 2018 | Organization of a two-day workshop on open science practices for scientists at the Department of Educational Sciences, University of Potsdam |
| 2016 – 2017 | Elected spokesperson for the Berlin fellows of the International Max Planck Research School on the Life Course (LIFE) |

AD HOC REVIEWING

AERA Open
Cogent Education
Computers & Education
Contemporary Educational Psychology
Educational Psychology Review
Empirische Pädagogik
Frontiers in Psychology, Section Educational Psychology
Gifted and Talented International
Journal of Educational Psychology
Learning & Individual Differences
PLOS ONE
Psychology Learning and Teaching
Psychological Bulletin
Review of Educational Research
Social Psychology of Education
Teaching & Teacher Education
Universitas Psychologica
Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie

REVIEWING FOR FUNDING AGENCIES

Nuffield Foundation (UK)

PROFESSIONAL MEMBERSHIPS

American Educational Research Association (AERA)
Deutsche Gesellschaft für Psychologie (DGPs)
European Association for Research on Learning and Instruction (EARLI)
Gesellschaft für Empirische Bildungsforschung (GEBF)