

## Lena Kristina Keller

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Quantitative Methods in Educational Sciences  
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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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2020 – present	<b>University of Potsdam</b> , Germany Postdoctoral Researcher, Chair of Quantitative Methods in Educational Sciences, Prof. Martin Brunner
2019 – 2020	<b>University of Potsdam</b> , Germany Predoctoral Researcher, Chair of Quantitative Methods in Educational Sciences, Prof. Martin Brunner
2015 – 2020	<b>International Max Planck Research School on the Life Course (LIFE)</b> , 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	<b>Monash University</b> , Melbourne, Australia Research stay with Dr. Leonie Kronborg
2016	<b>University of Michigan</b> , Ann Arbor, USA Research stay with Prof. Kai S. Cortina
	<b>University of California, Irvine</b> , USA Research stay with Prof. Jacquelynne S. Eccles

### PUBLICATIONS (PEER-REVIEWED)

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2023	Chesaniuk, M., Haering, S., Roseman, J., Straßburger, V. M., <b>Diversity Assessment Working Group</b> , Stadler, G. (in press). 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. <a href="https://doi.org/10.1016/j.scp.2023.101072">https://doi.org/10.1016/j.scp.2023.101072</a>
	<b>Keller, L.</b> , 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. <i>Educational Psychology Review</i> , 35, 31. <a href="https://doi.org/10.1007/s10648-023-09733-5">https://doi.org/10.1007/s10648-023-09733-5</a>
	Brunner, M., <b>Keller, L.</b> , 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. <i>Research Synthesis Methods</i> , 14(1), 5–35. <a href="https://doi.org/10.1002/jrsm.1584">https://doi.org/10.1002/jrsm.1584</a>

- 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>

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#### PUBLICATIONS (NOT PEER-REVIEWED)

- 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](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](http://www.haus-der-kleinen-forscher.de). \*shared first authorship

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#### CONFERENCE TALKS

- 2024 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.
- 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

#### CHAIREDS SMPOSIA

- 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.

- 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). Monash University, Faculty of Education Research Webinar: *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

#### 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

- 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 2 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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2024, Mar	Graphics in R, Young Researchers' Meeting of the Society for Empirical Educational Research (GEBF)
2022 – 2024	3 workshops: Integrative data analysis with large-scale assessment data, FDZ Fall Academy, IQB, Humboldt-Universität zu Berlin
2021, Jun	Creating publication-ready graphics in R, University of Potsdam

#### SUPERVISIONSHIP

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

First advisor: 3

Second advisor: 2

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

First advisor: 7

Second advisor: 9

#### UNIVERSITY AND ACADEMIC SERVICE

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Oct 2022 – present	Deputy decentralized equal opportunities officer for the Faculty of Human Sciences, University of Potsdam
2022 – 2023	Member of the Twitter team for the Section Educational Psychology of the German Psychological Society (DGPs)
2019 – 2021	Member of 7 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

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AERA Open

Cogent Education

Contemporary Educational Psychology

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  
Review of Educational Research  
Social Psychology of Education  
Universitas Psychologica  
Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie

PROFESSIONAL MEMBERSHIPS

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