

Christina M. Krause – Curriculum Vitae

CONTACT INFORMATION

Postal (office)	University of Duisburg-Essen, Faculty of Mathematics Thea-Leymann street 9, 45127 Essen, Germany
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Residence	Essen, Germany
Citizenship	German

Research interests Mathematics Education:
Gestures, embodiment and multimodality in the learning of mathematics; Mathematical conceptualization; Semiotics in mathematics; Metaphorics in mathematics; Mathematical epistemology; Aspects of language in the learning of mathematics

EDUCATION

04/2015	PhD (Dr. rer. nat., <i>summa cum laude</i>) at the University of Bremen (Germany), Department 3 (Mathematics and Computer Science) Title of the thesis: “The mathematics in our hands: How gestures contribute to constructing mathematical knowledge” 1 st assessor: Prof. Dr. Angelika Bikner-Ahsbals, University of Bremen (Germany) 2 nd assessor: Prof. Dr. Ferdinando Arzarello, University of Turin (Italy)
04/2010 – 04/2015	PhD-candidate: University of Bremen (Germany), Department 3 (Mathematics and Computer Science), Mathematics Education unit Research focus in mathematics education: “semiotics”, “gesture studies”, “construction of mathematical knowledge”, “social interaction” Supervisor: Prof. Dr. Angelika Bikner-Ahsbals (Bremen, Germany)
05/2009	Graduation in Mathematics (Graduation degree: Dipl.-Math., equivalent to the North-American Master’s degree in Mathematics) Title of the thesis: “On minimal tropical bases of regular matroids” (supervised by Prof. Dr. Eva-Maria Feichtner)
10/2008 – 05/2009	Graduate Student: University of Bremen (Germany), Department 3 (Mathematics and Computer Science)
10/2005 – 09/2006	Study Abroad at the Università degli Studi di Siena (Italy)
10/2002 – 03/2009	Diploma studies: Carl von Ossietzky-University Oldenburg (Germany) Major: Mathematics; Minor: Physics

RESEARCH AND TEACHING EXPERIENCE

10/2014 – now	University of Duisburg-Essen, Campus Essen (Germany), Faculty of Mathematics, Mathematics Education unit Postdoctoral researcher and lecturer
04/2016 – 09/2016	University of Siegen, Faculty IV – Department of Mathematics, Mathematics Education Visiting/Substitute professor for Primary and Secondary Mathematics Education (on leave from the University of Duisburg-Essen)
10/2013 – 09/2014	University of Bremen, Department 3 (Mathematics and Computer Science), Mathematics Education unit Research and teaching assistant
02/2010 – 01/2013	University of Bremen, Department 3 (Mathematics and Computer Science), Mathematics Education unit Research and teaching assistant
09/2009 – 09/2010	menssana Coaching Institute Oldenburg (Germany) Tutor for mathematics, physics and Italian at secondary level
09/2009	University of Applied Sciences, Oldenburg (Germany) Guest lecturer in ‘mathematics for engineers’
10/2006 – 08/2008	Carl von Ossietzky-University Oldenburg (Germany), Department of Mathematics Teaching Assistant in mathematics
10/2004 – 08/2005	Carl von Ossietzky-University Oldenburg (Germany), Department of Mathematics Teaching Assistant in mathematics

CURRENT AND CONCLUDED PROJECTS

2015 – ongoing	Principal Investigator of the project <i>“DeafMath: The mathematics of hearing-impaired learners – Barriers and chances”</i> Recruitment and guidance of associated staff: One student research assistant, two deaf assistants for translation and consulting.
2010 – 2013	Active collaborator in the project <i>“Epistemic processes from a semiotic point of view – On the role of signs in the construction of mathematical knowledge”</i> , in cooperation with the University of Turin (funded by the Central Research Developmental Fund (ZF) of the University of Bremen, grant #03/112/08; Principal Investigator: Prof. Dr. Angelika Bikner-Ahsbahs)

COURSES TAUGHT

University of Essen:

- **Preparatory course for the practical internship** (upcoming summer term 2017)
Master's course taken by the Master students prior to their practical semester teaching at school. The aim of the course is to provide the students with methods and curricular information to prepare for teaching mathematics at school. The students have to prepare at home, mostly by revising literature that serves as base to work in the lessons in an interactive manner.
(~ 20 students, primary instructor)
- **Master's thesis course** (winter term 2016/2017)
This course is provided to Master students in the program for prospective secondary mathematics teachers. In three all-day sessions, the students writing their Master's thesis in this program are introduced into ongoing research at the department, choose their supervisor, develop their research question, present their methodology as well as first results.
The aim of this course is to provide co-supervision of the leaders of the seminar in addition to the official supervisor to let them benefit from the several perspectives these leaders can offer.
(~ 15 students, co-leadership with Prof. Dr. Andreas Büchter, Prof. Dr. Benjamin Rott and Dr. Sebastian Bauer)
- **Cognitive and psychological aspects of the learning of mathematics** (winter term 2016/2017)
A third year's Bachelor's course in Mathematics Education, covering fundamental ideas in mathematics education.
(~ 70 students, primary instructor)
- **Communication processes in mathematical (learning) situations** (winter terms 2014/2015, 2015/2016, 2016/2017)
A facultative Bachelor's course accompanying the practical training of mathematical teaching situations (in school or other educative institutions). In this course the students encounter different theoretical perspectives to observe and analyse social interaction in situations of learning mathematics.
(~ 20 - 30 students, primary instructor)
- **Assessment of mathematical performance in mathematics: Analyses of concrete cases** (summer term 2015)
Third year's Bachelor's course for future teachers. The course was subdivided in a theoretical part – in which the students learn the theoretical basics of assessment of mathematical performance and existing literature in mathematics education on student's mathematical conceptions – and a practical part in which they have to design and implement an assessment test to present the results from their analyse and their interpretation of these results.
(~ 50 students, subdivided in two groups, primary instructor)
- **Theories and methods in mathematics education research** (summer term 2015, winter term 2015/2016)
A graduate course provided for the doctoral students in the mathematics education unit at the University of Duisburg-Essen. In this course, we discuss literature and methodological approaches in the field of mathematics education. Furthermore, the students have the chance to present their dissertation project and discuss it with the other participants of the course, as well as three professors from the department.
(~ 15 students, organized in cooperation with Dr. Larissa Zwetzschler)

University of Siegen (summer term 2016):

- **Speech, gesture, inscription: A view on sign use in social processes of learning mathematics**
A third-year Bachelor's course for future teachers, emphasizing the role of signs in mathematical learning processes. This course is subdivided in a theoretical part and a practical part. In the theoretical part, the students become acquainted with notions and concepts linked to different kinds of signs used in the mathematics classroom, and how they are connected to teaching and learning. In each lesson, they are asked

to apply some of these ideas by observing and analysing given data. In the second part, the students work together in groups to design a mathematics lesson for a school class that is invited to the university. The lesson, held by the future teachers, is filmed and subsequently analysed with respect to some aspect of sign use chosen by the participants of the course themselves.

(18 students, primary instructor)

- **Lectures on “Elements of geometry” and supervision of the corresponding tutorial lessons “**Elements of geometry” is a second year Bachelor’s course for prospective teachers for primary and lower secondary school. The focus was on basic Euclidean geometry. The students had to attend one of the five corresponding tutorial lessons for which I provided the additional tasks.
(~ 90 students, primary instructor)

University of Bremen:

- **Observing and analyzing: Sign use in mathematical learning processes** (summer term 2014)
A first-year Master’s course for future teachers, emphasizing the role of signs in mathematical learning processes. The students learn about theoretical semiotic concepts and their role in the teaching and learning of mathematics. In the course of the term, they have to modify a given task on folding geometry based on the theoretical knowledge they got to know before. They are asked to use these tasks in a mathematics lesson at a school chosen by themselves and to observe the sign use of the students with respect to a research question of their choice and interest.
(~ 20 students, team teaching with Prof. Dr. Bikner-Ahsbahs)
- **Basic lectures on theories, concepts and approaches in mathematics education** (winter terms 2010/2011, 2011/2012, 2013/2014)
A second-year Bachelor’s course in Mathematics Education, giving an overview on ideas and theories on teaching and learning.
(~ 20-40 students, teaching assistant)
- **Didactics of teaching functions** (summer terms 2011, 2012)
A second-year Bachelor’s course in Mathematics Education, focusing on the teaching and learning of functions.
(~ 20 students, teaching assistant)

University of Applied Sciences, Oldenburg (September 2009):

- **Fundamental mathematics for engineers**
Two weeks crash course on basic mathematics for future engineering students
(~60 students, material provided)

University of Oldenburg:

- **Algebra** (summer terms 2007, 2008)
Tutorial for the second-year algebra course, provided in the mathematics bachelor’s program.
(~ 25 students, teaching assistant)
- **Linear Algebra** (winter term 2006/2007, winter term 2007/2008)
Tutorial for the first-year linear algebra course, provided in the mathematics bachelor’s program
(~ 25 students, teaching assistant)
- **Analytical geometry for future secondary teachers** (winter term 2004/2005)
Tutorial for the second-year course for prospective secondary teachers. The focus of the course was set on analytical geometry in 2 to 3 dimensions.
(~ 25 students, teaching assistant)

SUPERVISION OF MASTER'S STUDENTS

Ongoing

Susanne Scharping

Master of Education

Thematic of the thesis: Adaption des Mathematics Attitudes and Perception Survey (MAPS) für den deutschen Sprachraum [Adapting the Mathematics Attitudes and Perception Survey (MAPS) for the German speaking countries] (partly in collaboration with Christoph Gansy)

Faculty of Mathematics, University of Duisburg-Essen, Germany

Christoph Kansy

Master of Education

Thematic of the thesis: Adaption des Mathematics Attitudes and Perception Survey (MAPS) für den deutschen Sprachraum [Adapting the Mathematics Attitudes and Perception Survey (MAPS) for the German speaking countries] (partly in collaboration with Susanne Scharping)

Faculty of Mathematics, University of Duisburg-Essen, Germany

Romina Kreutz

Master of Education

Thematic of the thesis: not yet set

Faculty of Mathematics, University of Duisburg-Essen, Germany

Christina Warnecke

Master of Education

Thematic of the thesis: not yet set

Faculty of Mathematics, University of Duisburg-Essen, Germany

2017

Annika Overdick

Master of Education

Title of the thesis: Zum Beitrag von Gesten zur deskriptiven Diagnose von Grundvorstellungen zu quadratischen Funktionen – Ein Fokus auf Gesten [Encountering gestures' contribution to the descriptive analysis of students' conceptualization of quadratic functions – A focus on the gestures]

Faculty of Mathematics, University of Duisburg-Essen, Germany

Stephanie Perick

Master of Education

Title of the thesis: Zum Beitrag von Gesten zur deskriptiven Diagnose von Vorstellungen zu quadratischen Funktionen – Ein Fokus auf Repräsentationsarten [Encountering gestures' contribution to the descriptive analysis of students' conceptualization of quadratic functions – A focus on the types of representations]

Faculty of Mathematics, University of Duisburg-Essen, Germany

2016

Samuel Sturm

Master of Education (M.Ed.)

Title of the thesis: Handlungsorientierte Aufgaben in Mathematikbüchern – Eine komparative Schulbuchanalyse mit Ausblick auf die Schulpraxis [Activity-oriented tasks in mathematics text books – A comparative text book analysis with outlooks on school praxis]

Faculty IV – Department of Mathematics, University of Siegen, Germany

Samet Bahar

Master of Education (M.Ed.)

Title of the thesis: Der Einsatz von Metaphern im Mathematikunterricht. Eine empirische Studie über die Auswirkung auf die Begriffsbildung bei Schülerinnen und Schülern der Sekundarstufe I [The use of

metaphors in the mathematics classroom. An empirical study on effects on conceptualization of students in lower secondary]

Faculty IV – Department of Mathematics, University of Siegen, Germany

Sahin Gülistan

Master of Education (M.Ed.)

Title of the thesis: Wie kann eine Scaffolding-Lernumgebung im sprachsensiblen Mathematikunterricht aussehen? - Eine empirische Studie im Kontext fachintegrierter Sprachförderung [How can a scaffolding-environment be designed in a language-sensitive mathematics classroom? – An empirical study in the context of subject integrated fostering of language skills]

Faculty IV – Department of Mathematics, University of Siegen, Germany

Ayse Nur Simsek

Master of Education (M.Ed.)

Title of the thesis: Förderung des räumlichen Vorstellungsvermögens im Mathematikunterricht der Grundschule – Praktische Umsetzung anhand der Unterrichtseinheit „Würfelgebäude [Fostering of spatial reasoning skills in the elementary mathematics classroom – Practical implementation of a teaching unit on cube building block houses]

Faculty IV – Department of Mathematics, University of Siegen, Germany

Daniela Klimovic

Master of Education (M.Ed.)

Title of thesis: Entwicklung und Erprobung einer Förderumgebung zu linearen Funktionen [Developing and testing an environment to foster skills and knowledge in the content area of linear functions]

Faculty of Mathematics, University of Duisburg-Essen, Germany

CONFERENCES AND OTHER RESEARCH STAYS

Presenting:

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| 03/2017 | Invited talk at the colloquium of the Graduate School of Education at UC Berkeley (California) (invited by Prof. Dr. Dor Abrahamson) |
| 03/2017 | 51st Annual Conference of the German Society for Mathematics Education (Potsdam, Germany) |
| 02/2017 | CERME 10 (10 th Congress of European Researchers in Mathematics Education) (Dublin, Ireland) |
| 01/2017 | Invited talk at the mathematical colloquium of the University of Duisburg-Essen, Faculty for Mathematics (Essen, Germany) (invited by Prof. Dr. Irwin Yousept) |
| 08/2016 | PME 40 (40th Conference of the International Group for the Psychology in Mathematics Education) (Szeged, Hungary) |
| 07/2016 | ICME 13, Speaker in the TSG 54 (Semiotics in mathematics education) (Hamburg, Germany) |
| 07/2016 | ISGS 7 (7th International Conference of the International Society for Gesture Studies) (Paris, France) |
| 07/2016 | Invited talk at the University of Cologne (Germany), Colloquium in Mathematics Education |
| 03/2016 | 50th Annual Conference of the German Society for Mathematics Education (Heidelberg, Germany) (Two talks) |
| 01/2016 | Invited speaker at the annual conference of the Italian Society for Mathematics Education „XXXIII Seminario di Ricerca in Didattica della Matematica” (Talks in Italian) (Rimini, Italy) |

- 07/2015 PME 39 (39th Conference of the International Group for the Psychology in Mathematics Education) (Hobart, Tasmania)
- 02/2015 49th Annual Conference of the German Society for Mathematics Education (Basel, Switzerland)
- 02/2015 CERME 9 (9th Congress of European Researchers in Mathematics Education) (Prag, Czech Republic)
- 09/2014 14th International Conference of the German Society for Semiotics, theme session on 'Body diagrams: On the epistemic kinetics of gesture' (Tübingen, Germany)
- 09/2014 Invited talk at the interdisciplinary workshop 'Body Diagrams – On the Epistemic Kinetics of Gesture' at the HumTec of the RWTH Aachen, invited by Prof. Dr. Irene Mittelberg (Aachen, Germany)
- 07/2014 ISGS 6 (6th International Conference of the International Society for Gesture Studies) (San Diego, California)
- 08/2012 YESS 6 (Summer school of ERME) (Faro, Portugal)
- 07/2012 PME 36 (36th Conference of the International Group for the Psychology of Mathematics Education) (Taipei, Taiwan)
- 03/2012 46th Annual Conference of the German Society for Mathematics Education (Weingarten, Germany)
- 03/2011 Research stay and presentation at the mathematics education working group of the University of Turin (Italy) (Talk in Italian)
- 02/2011 45th Annual Conference of the German Society for Mathematics Education (Freiburg, Germany)
- 10/2010 Research stay and presentation at the mathematics education working group of the University of Turin (Italy) (Talk in Italian)

Forthcoming:

- 03-04/2017 Research stay at the Embodied Design Research Laboratory of the Graduate School of Education at UC Berkeley (California)
- 04/2017 Research stay at the San Jose State University (San Jose, California)

Attendance:

- 10/2016 DGKL 7 (7th International Conference of the German Cognitive Linguistics Association: *Cognitive approaches to interaction and language attitudes*) (Essen, Germany)
- 01/2016 Inaugural conference of the Competence Centre of Sign Language and Gesture (SignGes) (Aachen, Germany)
- 09/2015 Research stay at the University of Turin (Italy)
- 04/2013 Research stay at the University of Turin (Italy)
- 10/2011 13th International Congress on Semiotics (Potsdam, Germany)
- 09/2011 GESPIN 2011: Gesture and Speech in Interaction (Bielefeld, Germany)
- 02/2011 CERME 7 (Congress of European Researchers in mathematics education) (Rzeszów, Poland)
- 10/2010 XXIX Convegno UMI-CIIM sull'insegnamento della matematica (Cetraro, Italy)
- 07/2008 "A tropical Wednesday in Göttingen": Conference on tropical Geometry (Göttingen, Germany)
- 03/2006 Ischia Group Theory 2006 (Ischia, Italy)

PUBLICATIONS

Monographs

Krause, C. M. (2016). *The mathematics in our hands: How gestures contribute to constructing mathematical knowledge*. Wiesbaden: Springer Spektrum.
(<http://www.springer.com/de/book/9783658119478>)

Book chapters

Krause, C. M. (*in print*). Embodied Geometry: Signs and gestures used in the deaf mathematics classroom – the case of symmetry. In R. Hunter, M. Civil, B. Herbel-Eisenmann, N. Planas, D. Wagner (eds.), *Mathematical discourse that breaks barriers and creates space for marginalized learners*. Rotterdam, Netherlands: Sense.

Krause, C. M. (*in review*). Information bundles and their associated signs. How gestures can ‘make’ mathematical meaning. In I. Mittelberg & A. Gerner (eds.), *Body diagrams – On the epistemic kinetics of gesture*. Amsterdam, Netherlands: John Benjamins.

Krause, C. M. & Salle, A. (*accepted*). On the role of gestures for the descriptive analysis of Grundvorstellungen’: A case of linear functions. Submitted for the *Semiotics monograph of TSG 54 of ICME 13* (13th International Congress on Mathematical Education).

Refereed conference proceedings

Krause, C. M. (*accepted*). DeafMath: Exploring the influence of sign language on mathematical conceptualization. *Proceedings of the 10th Congress of the European Society for Research in Mathematics Education* (CERME 10 in Dublin 2017).

Krause, C. & Salle, A. (2016). Learners’ gestures when learning alone. In: C. Csíkos, A. Rausch, J. Sztányi (eds.), *Proceedings of the 40th Conference of the International Group for the Psychology in Mathematics Education*, Vol. 3 (pp. 123-130). Szeged, Hungary: PME.

Sabena, C., Krause, C. M., & Maffia, A. (2016). L’analisi semiotica in ottica multimodale: dalla costruzione di un quadro teorico al networking con altre teorie [Semiotic analysis within a multimodal perspective: from the construction of a theoretic frame to networking theories]. Contribution to the Italian conference “XXXIII Seminario di Ricerca in Didattica della Matematica”, January 2016 in Rimini, Italy.
Accessible online http://www.airdm.org/doc/SemNaz2016_RELAZIONE.pdf [last downloaded 01/31/2016]

Krause, C. M. (2015). Epistemic functions of gestures: Results from an empirical study. In K. Beswick, T. Muir, & J. Wells (eds), *Proceedings of the 39th Conference of the International Group for the Psychology in Mathematics Education*, Vol. 1, (p. 177). Hobart, Tasmania: PME.

Krause, C. M. (2015). On the nature of representational gestures as grounded in the mathematical task. In K. Beswick, T. Muir, & J. Wells (eds), *Proceedings of the 39th Conference of the International Group for the Psychology in Mathematics Education*, Vol. 1 (p. 232). Hobart, Tasmania: PME.

Krause, C. M. (2015). Gestures as part of discourse in reasoning situations: Introducing two epistemic functions of gestures. In K. Krainer & N. Vondrová (eds.), *Proceedings of the 9th Congress of the European Society for Research in Mathematics Education* (CERME 9 in Prague 2015) (pp. 1427-1433), Prague, CZ: ERME.

Bikner-Ahsbahr, A., Sabena, C., Arzarello, F. & Krause, C. M. (2014). Semiotic and theoretic control within and across conceptual frames. In C. Nicol, P. Liljedahl, S. Oesterle, & D. Allan (eds.), *Proceedings of the joint meeting of PME 38 and PME-NA 36*. Vol. 2 (pp. 153-160). Vancouver, Canada: PME. Accessible online: <http://www.pmena.org/proceedings/PMENA%2036%20PME%2038%202014%20Proceedings%20Vol%202.pdf> [last downloaded 11/01/2015]

Krause, C. M. & Bikner-Ahsbahr, A. (2012). Modes of sign use in epistemic processes. In T.-Y. Tso (ed.), *Proceedings of the 36th Conference of the International Group for the Psychology in Mathematics Education*, Vol. 3 (p. 19 – 26), Taipei, Taiwan: PME.

Refereed conference abstracts

- Krause, C. M. & Salle, A. (*in press*). Gestures in individual mathematical learning processes: Perspectives for the researcher and for the learner. In: *The Book of Abstracts of the 7th Conference of the International Society for Gesture Studies*. Paris, France: ISGS.
- Sabena, C., Krause, C. M., & Maffia, A. (2015). L'analisi semiotica in ottica multimodale: dalla costruzione di un quadro teorico al networking con altre teorie. [Semiotic analysis within a multimodal perspective: from the construction of a theoretic frame to networking theories]. Extended Abstract for the Italian conference "XXXIII Seminario di Ricerca in Didattica della Matematica", accessible online http://www.airdm.org/doc/SemNaz2016_Abstract.pdf [last downloaded 11/19/2015]
- Krause, C. M. (2014). Information bundles and their associated signs – how gestures can 'make' mathematical meaning. In: *The Book of Abstracts of the 14th International Conference of the German Society for Semiotics*. Tübingen, Germany: DGS. Accessible online: http://www.semiose.de/export_download.php?id=772 (p. 106) [last downloaded 11/19/2015]
- Krause, C. M. & Bikner-Ahsbahr, A. (2014). 'Where, what and how' – Specifying gestures as a pathway to mathematics? In: *The Book of Abstracts of the 6th Conference of the International Society for Gesture Studies*. San Diego, USA: ISGS. Accessible online http://www.math.unibremen.de/didaktik/ma/chkrause/documents/Krause_Bikner-Ahsbahr_Where,_what_and_how.pdf [last downloaded 11/11/2014]

Non-refereed conference proceedings

- Krause, C. M. (*in press*). DeafMath – Ein Projekt zum Einfluss der Gebärdensprache auf Mathematikverständnis [DeafMath – A project on the influence of sign language on understanding mathematics]. *Vorträge auf der 50. Tagung für Didaktik der Mathematik vom 7.3. bis 11.3.2016 in Heidelberg* [Proceedings of the 50th Annual Conference of the German Society for Mathematics Education in Heidelberg, Germany].
- Salle, A. & Krause, C. M. (*in press*). Grundvorstellungen und Gesten – Eine exemplarische Analyse im Bereich linearer Funktionen [Grundvorstellungen and gestures – A case analysis in the context of linear functions]. *Vorträge auf der 50. Tagung für Didaktik der Mathematik vom 7.3. bis 11.3.2016 in Heidelberg* [Proceedings of the 50th Annual Conference of the German Society for Mathematics Education in Heidelberg, Germany].
- Krause, C. M. (2015). Hände hoch! – Ergebnisse einer empirischen Studie zur Rolle von Gesten in sozialen mathematischen Erkenntnisprozessen. [Hands up! – Results of an empirical study on the role of gestures in social epistemic processes in mathematics]. *Vorträge auf der 49. Tagung der GDM in Basel* [Proceedings of the 49th Annual Conference of the German Society for Mathematics Education in Basel, Switzerland]. Münster: WTM. Accessible online: https://eldorado.tu-dortmund.de/bitstream/2003/34637/1/BzMU15_KRAUSE_Gesten.pdf [last downloaded 03/17/2016]
- Behrens, D., Krause, C. M., & Bikner-Ahsbahr, A. (2014). „Ich zeig' uns was, was du nicht siehst“ – Zur epistemischen Rolle von Gesten. [„I show us something that you don't see“ – On the epistemic role of gestures]. In J. Roth & J. Ames (eds.), *Beiträge zum Mathematikunterricht. Vorträge auf der 48. Tagung für Didaktik der Mathematik in Koblenz* [Proceedings of the 48th Annual German of the GDM in Koblenz, Germany]. (pp. 149- 152). Münster: WTM. Accessible online <https://eldorado.tu-dortmund.de/bitstream/2003/33057/1/BzMU14-4ES-Behrens-352.pdf> [last downloaded 07/27/2014]
- Krause, C. M. (2012). Arten des Zeichengebrauchs und ihre Rolle im mathematischen Erkenntnisprozess [Modes of sign use and their role in epistemic processes] In M. Ludwig, & M. Kleine (Eds.), *Beiträge zum Mathematikunterricht. Vorträge auf der 46. Tagung für Didaktik der Mathematik vom 5.3. bis 9.3.2012 in Weingarten* (S. 469-472) [Proceedings of the 46th Annual German conference for Mathematics Education in Weingarten, Germany]. Münster: WTM. Accessible online: http://www.mathematik.uni-dortmund.de/ieem/bzmu2012/files/BzMU12_0208_Krause.pdf [last downloaded 2014-05- 21]
- Krause, C. M. (2011). Formen und Funktionen des Zeichengebrauchs im mathematischen Erkenntnisprozess [Forms and functions of sign use in mathematical epistemic processes] In R. Haug & L. Holzäpfel (eds.), *Beiträge zum Mathematikunterricht. Vorträge auf der 45. Tagung für Didaktik der Mathematik vom 21.2. bis 25.2.2011 in Freiburg* (S. 483-486) [Proceedings of the 46th Annual German conference for Mathematics Education in

Weingarten, Germany]. Münster: WTM. Accessible online: http://www.mathematik.unidortmund.de/ieem/bzmu2012/files/BzMU12_0208_Krause.pdf [last downloaded 2015-01-15]

Teacher journals

Krause, C. M. (*in print*). Diagnose im Fach inklusive – Lohnenswerte (Ein)Blicke aus anderer Perspektive [Subject-related diagnostic assessment inclusive – Worthwhile (in)sights from another perspective]. Special issue on inclusion of the teacher journal *Mathematik lehren* [teaching mathematics].

Under review

Krause, C. M. (*under review*). Iconicity in signed fraction talk of hearing-impaired sixth graders. Submitted for the 41th Conference of the International Group for the Psychology in Mathematics Education.

GRANTS AND AWARDS

- Financial support of the IZfB (Interdisciplinary Centre for Educational Research) of the University of Duisburg-Essen to fund the research and teaching stay of Dr. Wes Maciejewski (January 2017)
- 2016 Teaching award (together with the working group of Prof. Dr. Andreas Büchter) of the University of Duisburg-Essen (June 2016; 5000€)
- Award for the most-downloaded dissertation on Springer-Link in the first half of 2016 (June 2016; 100€)
- PostDoc-award 2016 of the Faculty of Mathematics of the University of Duisburg-Essen (January 2016; 5.000€)
- Financial support for the project “*DeafMath: The mathematics of hearing-impaired learners – Barriers and chances*”, granted by the principle office of the University Duisburg-Essen within a program supporting excellent emerging researchers; Science Support Centre of the University of Duisburg-Essen (December 2015; 25.800€)
- Approval of grant by the DAAD (German Academic Exchange Service) for funding the participation at the PME 39 in Hobart, Tasmania in July 2015 (2139€)
- Grant provided by the Department 3 (Mathematics and Computer Science) of the University of Bremen, for attending the conference ISGS 6 (Conference of the International Society for Gesture Studies) in July 2014 in San Diego, California (500€)
- ISGS student bursary for reimbursing the conference fee for the ISGS 6 (conference of the International Society for Gesture Studies in July 2014, San Diego, USA) (350 USD)
- Approval of a graduation grant by Unit 12 (Research Services) of the University of Bremen (8800€)
- Promos (DAAD, German Academic Exchange Service) for attending the YERME-Summer school YESS 6 in August 2012 in Portugal (500€)
- Impulse/Travel Expenses Allowance, Announcement of the Central Research Development Fund (ZF) of the University of Bremen, for the Conference of the PME 36 in Taipei, Taiwan in July 2012 (1200€)

PROFESSIONAL ACTIVITIES

Memberships

- L'Associazione Italiana di Ricerca in Didattica della Matematica (AIRDM) (since 2016)
- International Group for the Psychology of Mathematics Education (PME) (2012, 2015, 2016)
- European Society for Research in Mathematics Education (ERME) (2015/2016)
- EARLI (European Association for Research on Learning and Instruction) (since 2014)
- International Society for Gesture Studies (ISGS) (since 2012)
- German Society for Mathematics Education (GDM) (since 2010)

- Special Interest Group “Educational Neuroscience” (SIG 22) der EARLI (2014)
- Working Group ‘Semiotics in Mathematics Education’ of the GDM (2010-2012)

Reviews for Journals (Mathematics Education)

- *For the Learning of Mathematics* (ad hoc)
- *Canadian Journal of Science, Mathematics and Technology Education* (ad hoc)

Additional Education and Outreach

- Organisation of a teaching and research visit of Dr. Wesley Maciejewski (San José State University, California) at the Mathematics Education working group at the University of Duisburg-Essen;
Organisation of the corresponding seminars (01/2017)
- Organisation of a teaching and research visit of Prof. Jérôme Proulx (UQAM, Montréal, Canada) at the Mathematics Education working group at the University of Duisburg-Essen;
Organisation of the corresponding seminars (02/2016)
- Organisation of a workshop on data security and data management in empirical research at the mathematics education working group of the University of Duisburg-Essen (12/2015)
- Organisation of and participation in two workshops on programs related to qualitative data analysis (MaxQDA and feldpartitur) at the mathematics education working group of the University of Duisburg-Essen (03/2015)
- Oral presentations in a workshop for doctoral students (self-organized collaboration between the working groups of mathematics education universities of Oldenburg and Bremen (05/2011–04/2014)
- Participation in the YERME-Summer school YESS-6 in Faro, Portugal (08/2012) (participants selected in a review-process)
- Course in German Sign Language (10/2011-07/2012, 09/2016-01/2017)
- Course in English academic writing (winter term 2010/2011)
- Workshop on representation skills „Respiration, Voice, Language, Presence“ (summer term 2010)

Activities

02/2006 – 08/2006	Gruppo Erasmus di Siena, Siena (Italien)
01/2005 – 01/2006	Member of the students’ parliament at the CvO-University Oldenburg (Germany)
10/2003 – 10/2005	Student representative at the Department of Mathematics, CvO-University Oldenburg (Germany)

LANGUAGES

German (mother tongue)

English, Italian (fluent)

French, German Sign Language (beginner)