

Publications

Journal articles (by year)

- Rummel, N., Ertl, B., Härder, J., & Spada, H. (2002). Supporting collaborative learning and problem-solving in desktop videoconference settings. *International Journal of Educational Policy, Research, and Practice*, 3(2), 83-115.
- Rummel, N., Levin, J. R., & Woodward, M. M. (2003). Do pictorial mnemonic text-learning aids give students something worth writing about? *Journal of Educational Psychology*, 95(2), 327-334.
- Spitulnik, M., Bouillion, L. M., Rummel, N., Clark, D., & Fischer, F. (2003). Collaborative online environments for lifelong learning: Design issues from a situated learning perspective. *International Journal of Educational Policy, Research, and Practice*, 4(1), 17-53.
- Rummel, N., & Spada, H. (2005). Learning to collaborate: An instructional approach to promoting collaborative problem-solving in computer-mediated settings. *Journal of the Learning Sciences*, 14(2), 201-241.
- Meier, A., Spada, H., & Rummel, N. (2007). A rating scheme for assessing the quality of computer-supported collaboration processes. *International Journal of Computer-Supported Collaborative Learning*, 2, 63-86.
- Rummel, N., Spada, H., & Hauser, S. (2009). Learning to collaborate from being scripted or from observing a model. *International Journal of Computer-Supported Collaborative Learning*, 4(1), 69-92.
- Walker, E., Rummel, N., & Koedinger, K. (2009a). CTRL: A research framework for providing adaptive collaborative learning support. *User Modeling and User-Adapted Interaction: The Journal of Personalization Research (UMUAI)*, 19(5), 387-431.
- Walker, E., Rummel, N., & Koedinger, K. (2009b). Integrating collaboration and intelligent tutoring data in evaluation of a reciprocal peer tutoring environment. *Research and Practice in Technology Enhanced Learning*, 4(3), 221-251.
- Braun, I. & Rummel, N. (2010). Facilitating learning from computer-supported inquiry: The challenge of directing learners' interactions to useful ends. *Research and Practice in Technology Enhanced Learning*, 5(3), 205-244.
- Diziol, D., Walker, E., Rummel, N., & Koedinger, K. (2010). Using intelligent tutor technology to implement adaptive support for student collaboration. *Educational Psychology Review*, 22(1), 89-102.
- Rummel, N., & Krämer, N. (2010). Computer-supported instructional communication. A multidisciplinary account of relevant factors. Introduction to the special issue. *Educational Psychology Review*, 22(1), 1-7.
- Rummel, N., Diziol, D. & Westermann, K. (2010). Kooperative Lernformen im Mathematikunterricht. *Praxis der Mathematik*, 35(5), 25-29.
- Tsovaltzi, D., Rummel, N., McLaren, B., Pinkwart, N., Scheuer, O., Harrer, A., & Braun, I. (2010). Extending a virtual chemistry laboratory with a collaboration script to promote conceptual learning. *International Journal of Technology Enhanced Learning*, 2(1-2), 91-110.
- Van Gog, T., & Rummel, N. (2010) Example-based learning: Integrating cognitive and social-cognitive research perspectives. *Educational Psychology Review*, 22(2), 155-174.

- Westermann, K. & Rummel, N. (2010). Kooperatives Lernen in der Hochschulmathematik: Eine experimentelle Studie. *Mitteilungen der Deutschen Mathematikervereinigung*, 18, 240-243.
- Mullins, D., Rummel, N. & Spada, H. (2011). Are two heads always better than one? Differential effects of collaboration on students' computer-supported learning in mathematics. *International Journal of Computer Supported Collaborative Learning*, 6(3), 421-443. DOI: 10.1007/s11412-011-9122-z.
- Walker, E., Rummel, N. & Koedinger, K. (2011). Designing automated adaptive support to improve student helping behaviors in a peer tutoring activity. *International Journal of Computer Supported Collaborative Learning*, 6(2), 279-306. DOI: 10.1007/s11412-011-9111-2.
- Kapur & Rummel (2012). Productive Failure in learning from generation and invention activities. *Instructional Science*, 40(4), 645-650. DOI: 10.1007/s11251-012-9235-4.
- Rummel, N., Mullins, D. & Spada, H. (2012). Scripted collaborative learning with the Cognitive Tutor Algebra. *International Journal of Computer Supported Collaborative Learning*, 7(2), 307-339. DOI: 10.1007/s11412-012-9146-z.
- Westermann, K., & Rummel, N. (2012). Delaying instruction – Evidence from a study in a university relearning setting. *Instructional Science*, 40(4), 673-689. DOI: 10.1007/s11251-012-9207-8.
- Wiedmann, M., Leach, R. C., Rummel, N., & Wiley, J. (2012). Does group composition affect learning by invention? *Instructional Science*, 40 (4) 711-730. DOI: 10.1007/s11251-012-9204-y.
- Deiglmayr, A., Paus, L., McCade, C., Mullins, D., Berthold, K., Wittwer, J., Krämer, N. & Rummel, N. (2013). Towards an integration of the learning perspective and the communication perspective in computer-supported instructional communication. *Journal of Media Psychology*, 25 (4), 180-189. DOI: 10.1027/1864-1105/a000101.
- Plesch, Ch., Kaendler, C., Rummel, N., Wiedmann, M. & Spada, H. (2013). Identifying areas of tension in the field of technology-enhanced learning: Results of an international delphi study. *Computers & Education*, 65, 92-105. <http://dx.doi.org/10.1016/j.compedu.2013.01.018>.
- Rau, M. A., Aleven, V., & Rummel, N. (2013). Interleaved practice in multi-dimensional learning tasks: which dimension should we interleave? *Learning and Instruction*, 23, 98-114. DOI: dx.doi.org/10.1016/j.learninstruc.2012.07.003.
- Wichmann, A. & Rummel, N. (2013). Improving revision in wiki-based writing: Coordination pays off. *Computers & Education*, 62, 262-270. DOI: 10.1016/j.compedu.2012.10.017.
- Loibl, K. & Rummel, N. (2014a). Knowing what you don't know makes failure productive. *Learning and Instruction*, 34, 74-85.
- Loibl, K. & Rummel, N. (2014b). The impact of guidance during problem-solving prior to instruction on students' inventions and learning outcomes. *Instructional Science*, 42(3), 305-236. DOI: 10.1007/s11251-013-9282-5.
- Rau, M. A., Aleven, V., Rummel, N. & Pardos, Z. (2014). How should intelligent tutoring systems sequence multiple graphical representations of fractions? A multi-methods study. *International Journal of Artificial Intelligence in Education*, 24(2), 125-161. DOI: 10.1007/s40593-013-0011-7.

- Walker, E., Rummel, N. & Koedinger, K. (2014). Adaptive Intelligent Support to Improve Peer Tutoring in Algebra. *International Journal of Artificial Intelligence in Education*, 24(1), 33-61. DOI: 10.1007/s40593-013-0001-9.
- Kaendler, C., Wiedmann, M., Rummel, N., & Spada, H. (2015). Teacher competencies for the implementation of collaborative learning in the classroom: A framework and research review. *Educational Psychology Review*, 27(3), 505-536. DOI: 10.1007/s10648-014-9288-9.
- Rau, M. A., Aleven, V., Rummel, N. (2015). Successful learning with multiple graphical representations and self-explanation prompts. *Journal of Educational Psychology*, 107(1), 30-46. DOI: <http://dx.doi.org/10.1037/a0037211>.
- Loibl, K. & Rummel, N. (2015). Productive failure as a strategy against the double curse of incompetence. *Learning: Research and Practice*, 1(2), 113-121. DOI: 10.1080/23735082.2015.1071231.
- Rummel, N., Walker, E. & Aleven, V. (2016). Different futures of adaptive collaborative learning support. *Journal of Artificial Intelligence in Education*, 26(2), 784-795. DOI 10.1007/s40593-016-0102-3.
- Kaendler, C., Wiedmann, M., Leuders, T., Rummel, N., & Spada, H. (2016). Monitoring student interaction during collaborative learning: Design and evaluation of a training program for pre-service teachers. *Psychology: Learning & Teaching*, 5(1) 44–64. DOI: 10.1177/1475725716638010.
- Rau, M. A., Aleven, V., & Rummel, N. (2016). Supporting students in making sense of connections and in becoming perceptually fluent in making connections among multiple graphical representations. *Journal of Educational Psychology*. DOI: 10.1037/edu0000145.
- Loibl, K., Roll, I. & Rummel, N. (2016). Towards a theory of when and how problem solving followed by instruction supports learning. *Educational Psychology Review*. DOI: 10.1007/s10648-016-9379-x.
- Grawemeyer, B; Mavrikis, M; Holmes, W; Gutiérrez-Santos, S; Wiedmann, M; Rummel, N; (2017) Affective learning: improving engagement and enhancing learning with affect-aware feedback. To appear in *User Modeling and User-Adapted Interaction*. DOI: 10.1007/s11257-017-9188-z.
- Olsen, J.K., Aleven, V., & Rummel, N. (2017). Statistically modeling individual students' learning over successive collaborative practice opportunities. *Journal of Educational Measurement*, 54 (1), 123–138. DOI: 10.1111/jedm.12137.
- Rau, M. A., Aleven, V., & Rummel, N. (2017). Making connections between multiple graphical representations of fractions: Conceptual understanding facilitates perceptual fluency, but not vice versa. To appear in *Instructional Science*. DOI:10.1007/s11251-017-9403-7.
- Van Leeuwen, A., Van Wermeskerken, M., Erkens, G., & Rummel, N. (2017). Measuring teacher sense making strategies of learning analytics: a case study. To appear in *Learning: research and practice*. DOI:10.1080/23735082.2017.1284252.

Books/ Edited Volumes

- Rummel, N., Kapur, M., Nathan M., & Puntambekar, S. (Eds.) (2013a). *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013*

Conference Proceedings Volume 1 — Full Papers & Symposia. International Society of the Learning Sciences, Inc.

Rummel, N., Kapur, M., Nathan M., & Puntambekar, S. (Eds.) (2013b). *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013 Conference Proceedings Volume 2 — Short Papers, Panels, Posters, Demos & Community Events*. International Society of the Learning Sciences, Inc.

Book chapters

- Rummel, N., & Spada, H. (2005). Instructional support for collaboration in desktop videoconference settings: How it can be achieved and assessed. In R. Bromme, F. W. Hesse & H. Spada (Eds.), *Barriers and biases in computer-mediated knowledge communication and how they may be overcome* (pp. 59-88). New York: Springer.
- Spada, H., Rummel, N. & Ernst, A. (2006). Lernen. In H. Spada (Hrsg.), *Allgemeine Psychologie* (pp. 343-434). Bern: Huber.
- Hauser, S., Spada, H., Rummel, N. & Meier, A. (2007). Kooperation über räumliche und fachliche Grenzen hinweg – Probleme und Lösungsmöglichkeiten. In Schneider, G., Couné, B., Gayer, C., Vögele, E. & Weber, Ch. (Hrsg.), *Neue Medien als strategische Schrittmacher an der Universität Freiburg* (S. 355-364). Freiburg: Universitätsbibliothek.
- Rummel, N., & Spada, H. (2007). Can people learn computer-mediated collaboration by following a script? In F. Fischer, I. Kollar, H. Mandl & J. Haake (Eds.), *Scripting computer-supported communication of knowledge. Cognitive, computational, and educational perspectives* (pp. 39-55). New York: Springer.
- Rummel, N. (2008). Medienpsychologische Aspekte der sozial-kognitiven Lerntheorie. In N. Krämer, S. Schwan, D. Unz & M. Suckfüll (Hrsg.), *Medienpsychologie: Schlüsselbegriffe und Konzepte* (S.264-268). Stuttgart: Kohlhammer.
- Rummel, N., & Meier, A. (2008). Common Ground und Grounding. In N. Krämer, S. Schwan, D. Unz & M. Suckfüll (Hrsg.), *Medienpsychologie: Schlüsselbegriffe und Konzepte* (S. 329-335). Stuttgart: Kohlhammer.
- Rummel, N. & Braun, I. (2009). Kooperatives Lernen mit digitalen Medienverbänden. In R. Plötzner, T. Leuders und A. Wichert (Hrsg.), *Lernchance Computer - Strategien für das Lernen mit digitalen Medienverbänden* (S. 223-240). Münster: Waxmann.
- Diziol, D., & Rummel, N. (2010). How to design support for collaborative e-learning: A framework of relevant dimensions. In B. Ertl (Ed.), *E-Collaborative knowledge construction: Learning from computer-supported and virtual environments* (pp. 162-179). Hershey, PA: IGI Global.
- Tschounike, P., Rummel, N., & McLaren, B. M. (2010). Computer supported collaborative learning and intelligent tutoring systems. In R. Nkambou, R. Mizoguchi, & J. Bourdeau (Eds.) *Advances in Intelligent Tutoring Systems* (pp. 447-460). Berlin: Springer.
- Rummel, N., Deiglmayr, A., Spada, H., Karimanis, G., & Avouris, N. (2011). Analyzing collaborative interactions across domains and settings: An adaptable rating scheme. In S. Puntambekar, C. Hmelo-Silver & G. Erkens (Eds.), *Analyzing interactions in CSCL: Methods, approaches and issues* (pp. 367-390). Berlin: Springer.
- Westermann, K.; Rummel, N.; & Holzäpfel, L. (2011). Lernen durch kooperatives Erarbeiten von Lösungsansätzen ohne vorangehende Instruktion. In R. Haug & L. Holzäpfel (Hrsg.) *Beiträge zum Mathematikunterricht 2011* (pp. 895-898). Münster: WTM Verlag.
- Loibl, K. & Rummel, N. (2015). Discussing student solutions is germane for learning when providing or delaying instruction. In Y. H. Cho, I. S. Caleon & M. Kapur (Eds.), *Authentic problem solving and learning in the 21st century: Perspectives from Singapore and beyond* (pp. 229-248). Singapore: Springer.

- Mazziotti, C., Rummel, N. & Loibl, K. (2015). Kooperatives Lernen: Eine entscheidende Komponente der Productive Failure Methode? & Productive Failure Methode: Wie anfängliches Scheitern zum Erfolg führen kann. In K. Sommer, J. Lorke & C. Mattiesson (Hrsg.), *Publizieren in Zeitschriften für Forschung und Unterrichtspraxis – Ein Element der Wissenschaftskommunikation in den Fachdidaktiken und Bildungswissenschaften* (S.69-78). Bad Heilbrunn: Klinkhardt.
- Wiedmann, M., Leach, R., Rummel, N. & Wiley, J. (2015). Mathematical skills and learning by invention in small groups. In Y. H. Cho, I. S. Caleon, & M. Kapur (Eds.), *Authentic problem solving and learning in the 21st century: Perspectives from Singapore and beyond* (pp. 249–265). Singapore: Springer.
- Nathan, M. J., Rummel, N., & Hay, K. E. (2016) Growing the learning sciences: brand or big tent? Implications for graduate education. In M. A. Evans, M. J. Packer, & R. K. Sawyer (Eds.), *Reflections on the Learning Sciences* (pp. 191-209). Cambridge University Press.
- Rummel, N. (2016). Medienpsychologische Aspekte der sozial-kognitiven Lern-theorie. In N. Krämer, S. Schwan, D. Unz & M. Suckfüll (Hrsg.), *Medienpsychologie: Schlüsselbegriffe und Konzepte* (S.309-314). Stuttgart: Kohlhammer.
- Rummel, N., & Meier, A. (2016). Common Ground und Grounding. In N. Krämer, S. Schwan, D. Unz & M. Suckfüll (Hrsg.), *Medienpsychologie: Schlüsselbegriffe und Konzepte* (S. 390-396). Stuttgart: Kohlhammer.
- Olsen, J.K., Alevan, V., & Rummel, N. (2017). Exploring dual eye tracking as a tool to assess collaboration. To appear in A. A. von Davier, M. Zhu, & P. C. Kyllonen (Eds.), *Innovative Assessment of Collaboration*. New York: Springer.
<http://www.springer.com/us/book/9783319332598>

Contributions to conference proceedings with strict peer-review (by year)

2001-2005

- Hermann, F., Rummel, N. & Spada, H. (2001). Solving the case together: The challenge of net-based interdisciplinary collaboration. In P. Dillenbourg, A. Eurelings, & K. Hakkarainen (Eds.), *European perspectives on computer-supported collaborative learning. Proceedings of the European Conference on Computer-Supported Collaborative Learning* (pp. 293-300). Maastricht, NL: McLuhan Institute.
- Rummel, N., Spada, H., Hermann, F., Caspar, F. & Schornstein, K. (2002). Promoting the coordination of computer-mediated interdisciplinary collaboration. In G. Stahl (Ed.), *Computer support for Collaborative Learning: Foundations for a CSCL Community. Proceedings of the Conference on Computer Support for Collaborative Learning 2002* (pp. 558-560). Mahwah, NJ: Lawrence Erlbaum Associates.
- Rummel, N., Spada, H., Caspar, F., Groß Ophoff, J. & Schornstein, K. (2003). Instructional support for computer-mediated collaboration: Results from process analysis. In B. Wasson, S. Ludvigsen & U. Hoppe (Eds.), *Designing for change in networked learning environments. Proceedings of the International Conference on Computer Support for Collaborative Learning 2003* (pp. 199-208). Dordrecht, NL: Kluwer Academic Publishers.
- Rummel, N. & Spada, H. (2004). Cracking the nut - but which nutcracker to use? Diversity in approaches to analyzing collaborative processes in technology-supported settings. In Y. B. Kafai, W. A. Sandoval, N. Enyedy, A. S. Nixon & F. Herrera (Eds.), *Proceedings of the Sixth International Conference of the Learning Sciences* (pp. 23-27). Mahwah, NJ: Lawrence Erlbaum Associates.
- Spada, H., Meier, A., Rummel, N. & Hauser, S. (2005). A new method to assess the quality of collaborative process in CSCL. In T. Koschmann, D. Suthers & T.W- Chan (Eds.), *The next 10 years! Proceedings of the International Conference on Computer Support for Collaborative Learning 2005* (pp. 622-631). Mahwah, NJ: Lawrence Erlbaum Associates.

2006

- Hauser, S., Spada, H., Rummel, N., & Meier, A. (2006). Expertise development in clinical psychology. In R. Sun, N. Miyake & C. D. Schunn (Eds.), *Proceedings of the 28th Annual Conference of the Cognitive Science Society*. (pp. 1458-1463). Mahwah: Erlbaum.
- Rummel, N., Spada, H. & Hauser, S. (2006). Learning to collaborate in a computer-mediated setting: Observing a model beats learning from being scripted. In S. A. Barab, K. E. Hay, & D. T. Hickey (Eds.) *Proceedings of the Seventh International Conference of the Learning Sciences* (pp. 634-640). Mahwah, NJ: Lawrence Erlbaum Associates.
- Walker, E., Koedinger, K., McLaren, B., & Rummel, N. (2006). Cognitive tutors as research platforms: Extending an established tutoring system for collaborative and metacognitive experimentation. In M. Ikeda, K. Ashley & T. -W. Chan (Eds), *Proceedings of the 8th International Conference on Intelligent Tutoring Systems, Lecture Notes in Computer Science, 4053* (pp. 207-216). Berlin: Springer.

2007

- Diziol, D., Rummel, N., Spada, H., & McLaren, B. (2007). Promoting learning in mathematics: Script support for collaborative problem solving with the Cognitive Tutor Algebra. In C. A. Chinn, G. Erkens & S. Puntambekar (Eds.), *Mice, minds and society. Proceedings of the Computer Supported Collaborative Learning (CSCL) Conference 2007, Vol 8, I* (pp. 39-41). International Society of the Learning Sciences, Inc.
- Harrer, A., Zeini, S., Kahrimanis, G., Avouris, N., Marcos, J. A., Martinez-Mones, A., Meier, A., Rummel, N. & Spada, H. (2007). Towards a Flexible Model for Computer-based Analysis and Visualization of Collaborative Learning Activities. In C. A. Chinn, G. Erkens & S. Puntambekar (Eds.), *Mice, minds and society. Proceedings of the Computer Supported Collaborative Learning (CSCL) Conference 2007, Vol 8, I* (pp. 280-282). International Society of the Learning Sciences, Inc.
- Hauser, S., Spada, H., & Rummel, N. (2007). The effects of practical experience on expertise in clinical psychology and collaboration. In D. S. McNamara & J. G. Trafton (Eds.), *Proceedings of the 29th Annual Cognitive Science Society* (pp. 1061-1066). Austin, TX: Cognitive Science Society.
- Rummel, N., Hauser, S., & Spada, H. (2007). How does net-based interdisciplinary collaboration change with growing domain expertise?. In C. A. Chinn, G. Erkens & S. Puntambekar (Eds.), *Mice, minds and society. Proceedings of the Computer Supported Collaborative Learning (CSCL) Conference 2007, Vol 8, II* (pp. 611-620). International Society of the Learning Sciences, Inc.
- Walker, E., McLaren, B. M., Rummel, N., & Koedinger, K. (2007). Who says three's a crowd? Using a cognitive tutor to support peer tutoring. In R. Luckin, K. R. Koedinger & J. Greer (Eds.), *Artificial intelligence in education: Building technology rich learning contexts that work. Frontiers in Artificial Intelligence and Applications, Vol 158* (pp. 399-406). Amsterdam, NL: IOS Press.
- Walker, E., Rummel, N., McLaren, B., & Koedinger, K. (2007). The student becomes the master: Integrating peer tutoring with cognitive tutoring. In C. A. Chinn, G. Erkens & S. Puntambekar (Eds.), *Mice, minds and society. Proceedings of the Computer Supported Collaborative Learning (CSCL) Conference 2007, Vol 8, II* (pp. 750-752). International Society of the Learning Sciences, Inc.

2008

- Diziol, D., Rummel, N., Kahrimanis, G., Guevara, T., Holz, J., Spada, H., Fiotakis, G. (2008). Using contrasting cases to better understand the relationship between students' interactions and their learning outcome. In G. Kanselaar, V. Jonker, P.A. Kirschner, & F. Prins, (Eds.), *International perspectives of the learning sciences: Creating a learning*

- world. *Proceedings of the 8th International Conference of the Learning Sciences (ICLS 2008)*, Vol 3 (pp. 348-349). International Society of the Learning Sciences, Inc.
- Meier, A., Voyiatzaki, E., Kahrmanis, G., Rummel, N., Spada, H., & Avouris, N. (2008). Teaching students how to improve their collaboration: Assessing collaboration quality and providing adaptive feedback in a CSCL setting. In G. Kanselaar, V. Jonker, P.A. Kirschner, & F. Prins, (Eds.), *International perspectives of the learning sciences: Creating a learning world. Proceedings of the 8th International Conference of the Learning Sciences (ICLS 2008)*, Vol 3 (pp. 340-341). International Society of the Learning Sciences, Inc.
- Rummel, N. & Weinberger, A. (2008). New challenges in CSCL: Towards adaptive script support. In G. Kanselaar, V. Jonker, P.A. Kirschner, & F. Prins, (Eds.), *International perspectives of the learning sciences: Creating a learning world. Proceedings of the 8th International Conference of the Learning Sciences (ICLS 2008)*, Vol 3 (pp. 338-345). International Society of the Learning Sciences, Inc.
- Rummel, N. & Hmelo-Silver, C. (2008). Using contrasting cases to relate collaborative processes and outcomes in CSCL. In G. Kanselaar, V. Jonker, P.A. Kirschner, & F. Prins, (Eds.), *International perspectives of the learning sciences: Creating a learning world. Proceedings of the 8th International Conference of the Learning Sciences (ICLS 2008)*, Vol 3 (pp. 346-353). International Society of the Learning Sciences, Inc.
- Tsovaltzi, D., McLaren, B., Rummel, N., Scheuer, O., Harrer, A., Pinkwart, N. & Braun, I. (2008). Using an adaptive collaboration script to promote conceptual chemistry learning. In B. Woolf, E. Aimeur, R. Nkambou, S. Lajoie (Eds), *Proceedings of the 9th International Conference on Intelligent Tutoring Systems, Lecture Notes in Computer Science, 5091* (pp. 709-711). Berlin: Springer.
- Tsovaltzi, D., Rummel, N., Pinkwart, N., Scheuer, O., Harrer, A., Braun, I., & McLaren, B. M. (2008). CoChemEx: Supporting conceptual chemistry learning via computer-mediated collaboration scripts. In P. Dillenbourg & M. Specht (Eds.), *Proceedings of the 3rd European Conference on Technology Enhanced Learning (EC-TEL 2008), Lecture Notes in Computer Science 5192* (pp. 437–448). Berlin: Springer.
- Walker, E., Rummel, N., & Koedinger, K. (2008). Adaptive domain support for computer-mediated peer tutoring. In N. Rummel & A. Weinberger (Eds.), *New challenges in CSCL: Towards adaptive script support*. In G. Kanselaar, V. Jonker, P.A. Kirschner, & F. Prins, (Eds.), *International perspectives of the learning sciences: Creating a learning world. Proceedings of the 8th International Conference of the Learning Sciences (ICLS 2008)*, Vol 3 (pp.341-343). International Society of the Learning Sciences, Inc.
- Walker, E., Rummel, N., & Koedinger, K. (2008). To tutor the tutor: Adaptive domain support for peer tutoring. In B. Woolf, E. Aimeur, R. Nkambou, S. Lajoie (Eds), *Proceedings of the 9th International Conference on Intelligent Tutoring Systems, Lecture Notes in Computer Science, 5091* (pp. 626-635). Berlin: Springer.

2009

- Diziol, D., Rummel, N. & Spada, H. (2009). Procedural and conceptual knowledge acquisition in mathematics: Where is collaboration helpful? In O'Malley, C., Suthers D., Reimann P., Dimitracopoulou A. (Eds.), *Computer Supported Collaborative Learning Practices- CSCL2009 Conference Proceedings, Vol 1* (pp. 178-187). International Society of the Learning Sciences, Inc.
- Kapur, M. & Rummel, N. (2009). The assistance dilemma in CSCL. In Dimitracopoulou A., O'Malley, C., Suthers D., Reimann P., (Eds.) *Computer Supported Collaborative Learning Practices- CSCL2009 Community Events Proceedings, Vol 2* (pp. 37-42). International Society of the Learning Sciences, Inc.
- Kahrmanis, G., Meier, A., Chounta, I.-A., Voyiatzaki, E., Spada, H., Rummel, N. & Avouris, N. (2009). Assessing collaboration quality in synchronous CSCL problem-solving

- activities: Adaptation and empirical evaluation of a rating scheme. In U. Cress, V. Dimitrova & M. Specht (Eds.), *Learning in the Synergy of Multiple Disciplines: Proceedings of 4th European Conference on Technology Enhanced Learning, EC-TEL 2009*, Lecture Notes in Computer Science, 5794 (pp. 267-272). Berlin: Springer.
- Rau, M. A., Aleven, V., & Rummel, N. (2009). Intelligent tutoring systems with multiple representations and self-explanation prompts support learning of fractions. In V. Dimitrova, R. Mizoguchi, B. du Boulay, & A. Graessar (Eds.), *Artificial intelligence in education: Building learning systems that care: From knowledge representation to affective modelling. Frontiers in Artificial Intelligence and Applications, Vol 200* (pp. 441-448). Amsterdam, NL: IOS Press.
- Walker, E., Rummel, N., & Koedinger, K. (2009). Beyond explicit feedback: New directions in adaptive collaborative learning support. In O'Malley, C., Suthers D., Reimann P., Dimitracopoulou A. (Eds.), *Computer Supported Collaborative Learning Practices- CACL2009 Conference Proceedings, Vol 1* (pp. 552-556). International Society of the Learning Sciences, Inc.
- Walker, E., Rummel, N., & Koedinger, K. (2009). Modeling helping behavior in an intelligent tutor for peer tutoring. In V. Dimitrova, R. Mizoguchi, B. du Boulay, & A. Graessar (Eds.), *Artificial intelligence in education: Building learning systems that care: From knowledge representation to affective modelling. Frontiers in Artificial Intelligence and Applications, Vol 200* (pp. 341-349). Amsterdam, NL: IOS Press.
- 2010**
- Diziol, D., Rummel, N., Spada, H., & Haug, S. (2010). Learning in mathematics: Effects of procedural and conceptual instruction on the quality of student interaction. In K. Gomez, L. Lyons, & J. Radinsky (Eds.), *Learning in the Disciplines. Proceedings of the 9th International Conference of the Learning Sciences (ICLS 2010)*, Vol 2 (pp. 370-371). International Society of the Learning Sciences, Inc.
- Feenstra, L., Aleven, V., Rummel, N., & Taatgen, N. (2010). Multiple interactive representations for fractions learning. In V. Aleven, J. Kay, & J. Mostow (Eds.), *Proceedings of the 10th international conference on intelligent tutoring systems (ITS 2010)*, Vol. 2 (pp. 221-223). Berlin: Springer.
- Rau, M., Aleven, V., & Rummel, N. (2010). Blocked versus interleaved practice with multiple representations in an intelligent tutoring system for fractions. In V. Aleven, J. Kay, & J. Mostow (Eds.), *Proceedings of the 10th International Conference on Intelligent Tutoring Systems (ITS 2010)*, Vol. 1 (pp. 413-422). Berlin: Springer.
- Walker, E., Rummel, N., & Koedinger, K. (2010). Automated adaptive support for peer tutoring in high-school mathematics. In K. Gomez, L. Lyons, & J. Radinsky (Eds.), *Learning in the Disciplines. Proceedings of the 9th International Conference of the Learning Sciences (ICLS 2010)*, Vol 2 (pp. 151-153). International Society of the Learning Sciences, Inc.
- Walker, E., Walker, S., Rummel, N., & Koedinger, K. (2010). Using problem-solving context to assess help quality in computer-mediated peer tutoring. In V. Aleven, J. Kay, & J. Mostow (Eds.), *Proceedings of the 10th International Conference on Intelligent Tutoring Systems (ITS 2010)*, Vol 1. (pp. 145-155). Berlin: Springer.
- Plesch, C., Jansen, M., Deiglmayr, A., Rummel, N. Spada, H., Heinze, N., & Cress, U. (2010). Opinions on future research themes for technology-enhanced learning (TEL): A Delphi study. In S. L. Wong et al. (Eds.). *Proceedings of the 18th International Conference on Computers in Education* (pp. 703-707). Putrajaya, Malaysia: Asia-Pacific Society for Computers in Education.

2011

- Feenstra, L., Aleven, V., Rummel, N., Rau, M., Taatgen, N. (2011). Thinking with your hands: Interactive graphical representations in a tutor for fractions learning. In G. Biswas, S. Bull, J. Kay, A. Mitrovic (Eds.), *Proceedings of the 10th International Conference on Artificial Intelligence in Education* (pp. 453-455). Berlin: Springer.
- Kaendler, C., Plesch, C., Deiglmayr, A., Diziol, D., Rummel, N., & Spada, H. (2011). Emerging tensions in the future of technology-enhanced learning: First results of an international Delphi study. In Spada, H., Stahl, G., Miyake, N., Law, N. (Eds.) In H. Spada, G. Stahl, N. Miyake, & N. Law (Eds.), *Connecting computer-supported collaborative learning to policy and practice – CSCL2011 Conference Proceedings, Vol 2* (pp. 676-680). International Society of the Learning Sciences, Inc.
- Walker, E., Rummel, N., & Koedinger, K. R. (2011). Adaptive support for CSCL: Is it feedback relevance or increased accountability that matters? In H. Spada, G. Stahl, N. Miyake, & N. Law (Eds.), *Connecting computer-supported collaborative learning to policy and practice – CSCL2011 Conference Proceedings, Vol 1* (pp. 334-342). International Society of the Learning Sciences, Inc.
- Walker, E., Rummel, N., & Koedinger, K. R. (2011). Using Automated Dialog Analysis to Assess Peer Tutoring and Trigger Effective Support. In G. Biswas, S. Bull, J. Kay, A. Mitrovic (Eds.), *Proceedings of the 10th International Conference on Artificial Intelligence in Education* (pp. 385-393). Berlin: Springer.
- Westermann, K. & Rummel, N. (2011). What Type of Support is Needed When Students Generate Multiple Representations in Small Groups? In H. Spada, G. Stahl, N. Miyake, & N. Law (Eds.), *Connecting computer-supported collaborative learning to policy and practice – CSCL2011 Conference Proceedings, Vol 3* (pp. 1067-1068). International Society of the Learning Sciences, Inc.

2012

- Rau, M., Aleven, V., Rummel, N., & Rohrbach, S. (2012). Sense Making Alone Doesn't Do It: Fluency Matters Too! ITS Support for Robust Learning with Multiple Representations. In S. Cerri, W. Clancey, G. Papadourakis & K. Panourgia (Eds.), *Intelligent Tutoring Systems* (Vol. 7315, pp. 174-184). Berlin: Springer.
- Rau, M., Rummel, N., Aleven, V., Pacilio, L., & Tunc-Pekkan, Z. (2012). How to schedule multiple graphical representations? A classroom experiment with an intelligent tutoring system for fractions. In J. van Aalst, K. Thompson, M. J. Jacobson & P. Reimann (Eds.), *The future of learning: Proceedings of the 10th international conference of the learning sciences (ICLS 2012) – Volume 1* (pp. 64-71). Sydney, Australia: ISLS.
- Walker, E., Rummel, N., Walker, S., & Koedinger, K. (2012). Noticing relevant feedback improves learning in an intelligent tutoring system for peer tutoring. S. Cerri, W. Clancey, G. Papadourakis & K. Panourgia (Eds.), *Intelligent Tutoring Systems* (Vol. 7315, pp. 96-106). Berlin: Springer.
- Westermann, K. & Rummel, N. (2012). New evidence on productive failure - Building on students' prior knowledge is key! In J. van Aalst, K. Thompson, M. J. Jacobson & P. Reimann (Eds.), *The future of learning: Proceedings of the 10th international conference of the learning sciences (ICLS 2012) – Volume 2* (pp. 266-270). Sydney, Australia: ISLS.

2013

- Funk, A. L., Wichmann, A., & Rummel, N. (2013). Supporting feedback uptake in online peer assessment. In N. Rummel, M. Kapur, M. Nathan & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013 Conference Proceedings, Volume 2* (pp. 253-254). International Society of the Learning Sciences, Inc.

- Kaendler, C., Wiedmann, M., Rummel, N., Leuders, T., & Spada, H. (2013). Transferring CSCL findings to face-to-face teacher practice. In N. Rummel, M. Kapur, M. Nathan & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013 Conference Proceedings*, Volume 2 (pp. 279-280). International Society of the Learning Sciences, Inc.
- Loibl, K. & Rummel, N. (2013). Delaying instruction alone doesn't work: Comparing and contrasting student solutions is necessary for learning from problem-solving prior to instruction (2013). In N. Rummel, M. Kapur, M. Nathan & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013 Conference Proceedings*, Volume 1 (pp. 296-303). International Society of the Learning Sciences, Inc. *Best Student Paper Award.
- Mannsfeld, M., Wichmann, A., Krämer, N., & Rummel, N. (2013). Blended learning experiences in a multimodal setting: The impact of communication channels and learners' CMC expertise on perceived social presence and motivation. In N. Rummel, M. Kapur, M. Nathan & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013 Conference Proceedings*, Volume 2 (pp. 89-92). International Society of the Learning Sciences, Inc.
- Olsen, J. K., Belenky, D. M., Aleven, V., Rummel (2013). Intelligent tutoring systems for collaborative learning: Enhancements to authoring tools. In H. C. Lane, K. Yacef, J. Mostow, & P. Pavlik (Eds.), *Proceedings of the 16th International Conference on Artificial Intelligence in Education AIED 2013* (pp. 900-903). Berlin, Heidelberg: Springer. doi: 10.1007/978-3-642-39112-5_141.
- Olsen, J. K., Belenky, D. M., Aleven, V., Rummel, N., Sewall, J., & Ringenberg, M. (2013). Authoring collaborative intelligent tutoring systems. In R. Kumar & J. Kim (Eds.), *Proceedings 2nd Workshop on Intelligent Support for Learning in Groups at the 16th International Conference on Artificial Intelligent in Education* (pp. 1-10). <https://sites.google.com/site/islg2013/AIED2013-ISLG-Proceedings.pdf>.
- Rau, M. A., Aleven, V., Rummel, N., & Rohrbach, S. (2013). Why interactive learning environments can have it all: Resolving design conflicts between conflicting goals. In W. E. Mackay, S. Brewster, & S. Bødker (Eds.), *Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2013)* (pp. 109-118). ACM, New York. doi: 10.1145/2470654.2470670. *Best Paper Honorable Mention.
- Rau, M., Aleven, V., & Rummel, N. (2013). Complementary effects of sense-making and fluency-building support for connection making: A matter of sequence? In H. C. Lane, K. Yacef, J. Mostow & P. Pavlik (Eds.), *Artificial Intelligence in Education* (pp. 329-338). Berlin Heidelberg: Springer.
- Rau, M., Aleven, V., & Rummel, N. (2013). How to use multiple graphical representations to support conceptual learning? Research-based principles in the Fractions Tutor. In H. C. Lane, K. Yacef, J. Mostow & P. Pavlik (Eds.), *Artificial Intelligence in Education* (pp. 762-765). Berlin Heidelberg: Springer.
- Rau, M. A., Scheines, R., Aleven, V., & Rummel, N. (2013). Does representational understanding enhance fluency – or vice versa? Searching for mediation models. In S. K. D'Mello, R. A., Calvo, & A. Olney (Eds.) *Proceedings of the 6th International Conference on Educational Data Mining (EDM 2013)* (pp. 161-168). Worcester, MA: International Educational Data Mining Society. *Best Paper Award.

2014

- Belenky, D.M., Ringenberg, M., Olsen, J., Aleven, V., & Rummel, N. (2014). Using dual eye-tracking to evaluate students' collaboration with an Intelligent Tutoring System for elementary-level fractions. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

- Mazziotti, C., Loibl, K. & Rummel, N. (2014). Does collaboration affect learning in a Productive Failure setting? In J. L. Polman, E. Kyza, K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Proceedings of the 11th International Conference of the Learning Sciences*, Vol. 2 (pp.). International Society of the Learning Sciences, Inc. Boulder, USA.
- Olsen, J. K., Belenky, D. M., Aleven, A., & Rummel, N. (2014a). Using an Intelligent Tutoring System to support collaborative as well as individual learning. In S. Trausan-Matu, K. E. Boyer, M. Crosby, & K. Panourgia (Eds), *Proceedings of the 12th International Conference on Intelligent Tutoring Systems*, (pp. 134-143). Berlin, Heidelberg: Springer.
- Olsen, J. K., Belenky, D. M., Aleven, V., & Rummel, N. (2014b). Collaboration on procedural problems may support conceptual knowledge more than you may think. In *Proceedings of the 3rd Workshop on Intelligent Support for Learning in Groups at the 12th International Conference on Intelligent Tutoring Systems*.
- Olsen, J. K., Belenky, D. M., Aleven, A., Rummel, N., Sewall, J., & Ringenberg, M. (2014). Authoring tools for collaborative Intelligent Tutoring System environments. In S. Trausan-Matu, K. E. Boyer, M. Crosby, & K. Panourgia (Eds), *Proceedings of the 12th International Conference on Intelligent Tutoring Systems*, (pp. 523-528). Berlin, Heidelberg: Springer.
- Wichmann, A., Leiba, M., Funk, A.L., Rummel, N., Ronen, M. (2014). Investigating feedback uptake by looking at the assessor's level of expertise and providing sense-making support. In J. L. Polman, E. Kyza, K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Proceedings of the 11th International Conference of the Learning Sciences*, Vol. 2 (pp. 1419-1421). International Society of the Learning Sciences, Inc. Boulder, USA.

2015

- Deiglmayr, K., Rummel, N. & Loibl, K. (2015). The mediating role of interactive learning activities in CSCL: An Input-Process-Outcome model. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, & S. Ludvigsen (Eds.). *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning (CSCL) Conference 2015*, Vol. 2 (pp. 518-522). International Society of the Learning Sciences, Inc.
- Grawemeyer, B., Gutierrez-Santos, S., Holmes, W., Mavrikis, M., Rummel, N., Mazziotti, C. & Janning, R. (2015). Talk, Tutor, Explore, Learn: Intelligent Tutoring and Exploration for Robust Learning. In C. Conati, N. Heffernan, A. Mitrovic, & M. F. Verdejo (Eds.), *Proceedings of the 17th International Conference on AI in Education* (pp. 917–918). New York: Springer International Publishing
- Hartmann, Ch., Angersbach, J., & Rummel, N. (2015). Social interaction, constructivism and their application within (CS)CL theories.. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, & S. Ludvigsen (Eds.). *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning (CSCL) Conference 2015*, Vol. 2 (pp. 553-556). International Society of the Learning Sciences, Inc.
- Mazziotti, C., Holmes, W., Wiedmann, M., Loibl, K., Rummel, N., Mavrikis, M., Hansen, A. & Grawemeyer, B. (2015). Robust student knowledge: Adapting to individual student needs as they explore the concepts and practice the procedures of fractions. In M. Mavrikis, G. Biswas, S. Gutiérrez-Santos, T. Dragon, R. Luckin, D. Spikol, & J. Segedy (Eds.), *Proceedings of the Workshops at the 17th International Conference on Artificial Intelligence in Education AIED 2015*, Vol. 2; (pp. 32–40). New York: Springer International Publishing.
- Mazziotti, C., Loibl, K. & Rummel, N. (2015). Collaborative or individual learning within Productive Failure. Does the social form of learning make a difference? In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, & S. Ludvigsen (Eds.). *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning*

(CSCL) Conference 2015, Vol. 2 (pp. 570-575). International Society of the Learning Sciences, Inc.

- Olsen, J.K., Alevan, V., & Rummel, N. (2015a). Adapting collaboration dialogue in response to intelligent tutoring system feedback. In C. Conati, N. Heffernan, A. Mitrovic, & M. F. Verdejo (Eds.), *Proceedings of the 17th International Conference on AI in Education* (pp. 748-751). New York: Springer International Publishing.
- Olsen, J.K., Rummel, N., & Alevan, V. (2015b). Finding productive talk around errors in intelligent tutoring systems. In O. Lindwall, P. Häkkinen, T. Koschman, P. Tchounikine, & S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning (CSCL) Conference 2015*, Vol. 2 (pp. 821-822). International Society of the Learning Sciences, Inc.
- Olsen, J.K., Alevan, V., & Rummel, N. (2015c). Predicting student performance in a collaborative learning environment. In O. C. Santos et al. (Eds.), *Proceedings of the 8th International Conference on Educational Data Mining* (pp. 211-217). Worcester, MA: Educational Data Mining Society.
- Olsen, J.K., Alevan, V., & Rummel, N. (2015d). Toward combining individual and collaborative learning within an intelligent tutoring system. In C. Conati, N. Heffernan, A. Mitrovic, & M. F. Verdejo (Eds.), *Proceedings of the 17th International Conference on AI in Education* (pp. 848-851). New York: Springer International Publishing.
- Olsen, J.K., Ringenberg, M., Alevan, V., & Rummel, N. (2015). Dual eye tracking as a tool to assess collaboration. In *Proceedings of the 4th Workshop on Intelligent Support for Learning in Groups at the 17th International Conference on Artificial Intelligence in Education* (pp. 25-30).
- Wichmann, A., Funk, A. L., Rummel, N. (2015). Maximizing benefit of peer-feedback to increase feedback uptake in academic writing. In O. Lindwall, P. Häkkinen, T. Koschmann, P. Tchounikine, & S. Ludvigsen (Eds.), *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning (CSCL) Conference 2015*, Volume 1 (pp. 411-418). International Society of the Learning Sciences, Inc.

2016

- Erdmann, J. & Rummel, N. (2016). Do collaborative learning elements in online courses improve conceptual knowledge acquisition? In C. K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the 12th International Conference of the Learning Sciences, ICLS 2016* (Vol. II, pp. 1217-1218). Singapore: International Society of the Learning Sciences.
- Hartmann, C., Rummel, N., & Loibl, K. (2016). Communication patterns and their role for conceptual knowledge Acquisition from Productive Failure. In C. K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the 12th International Conference of the Learning Sciences, ICLS 2016* (Vol. I, pp. 530-537). Singapore: International Society of the Learning Sciences.
- Mazziotti, C., Rummel, N., & Deiglmayr, A. (2016). Comparing Students' Solutions when Learning Collaboratively or Individually within Productive Failure. In C. K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the 12th International Conference of the Learning Sciences, ICLS 2016* (Vol. II, pp. 926-929). Singapore: International Society of the Learning Sciences.
- Olsen, J. K., Rummel, N., & Alevan, V. (2016). Investigating effects of embedding collaboration in an intelligent tutoring system for elementary school students. In C. K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the 12th International Conference of the Learning Sciences, ICLS 2016* (Vol. I, pp. 338-345). Singapore: International Society of the Learning Sciences.

- Olsen, J. K., Alevan, V., & Rummel, N. (2016). Enhancing student modeling for collaborative intelligent tutoring systems. In A. Micarelli, J. Stamper, & K. Panourgia (Eds.), *Proceedings of the 13th International Conference on Intelligent Tutoring Systems, ITS 2016* (pp. 485-487). Springer International Publishing.
- Rummel, N., Mavrikis, M., Wiedmann, M., Loibl, K., Mazziotti, C., Holmes, W., & Hansen, A. (2016). Combining exploratory learning with structured practice to foster conceptual and procedural fractions knowledge. In C. K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the 12th International Conference of the Learning Sciences, ICLS 2016* (Vol. I, pp. 58-65). Singapore: International Society of the Learning Sciences.