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EDUCATION

Virginia Tech, Blacksburg, VA

Ph.D., Curriculum & Instruction: Mathematics Education, May 2010

Dissertation Title: Mathematical Discussion and Self-Determination Theory

Advisor: Jesse L. M. Wilkins

Winthrop University, Rock Hill, SC

M.Ed., Middle Level Education / Concentration in Mathematics, December 2005

B.S., Elementary Education / Mathematics Minor, May 2002

- Hold equivalent course background to a Bachelors in Mathematics.

RESEARCH

[Google Scholar Profile](#)

[Research Gate Profile](#)

[AD Scientific Index Profile](#)

Journal Articles (Peer Reviewed)

Austin, C. K., Heisler, J. L., & Kosko, K. W. (in press). Exploring the relationship between a PSTs written noticings of student mathematical reasoning and their reported and actual viewing of a 360 video. *School Science and Mathematics*. <http://doi.org/10.1111/ssm.18406>

Kosko, K. W., Zolfaghari, M., Ferdig, R. E., Gandolfi, E., Austin, C. K., Pavlic, C., & Guan, Q. (in press). Effects of perceptual and cognitive factors on preservice teachers' professional noticing: A grounded cognitive perspective of professional noticing. *ZDM*. <https://doi.org/10.1007/s11858-025-01734-8>

Kosko, K. W., Ferdig, R. E., Lenart, C., Heisler, J., & Guan, Q. (in press). Exploring teachers' eye-tracking data and professional noticing when viewing a 360 video of elementary mathematics. *Journal of Mathematics Teacher Education*. <https://doi.org/10.1007/s10857-024-09667-x>

Amador, J., Weston, T., & Kosko, K. W. (2025). Video prompts as scaffolding for noticing students' mathematical thinking using 360-degree videos: Comparing what is noticed with how. *Journal für Mathematik-Didaktik*, 46(4), 1-23. <https://doi.org/10.1007/s13138-024-00255-3>

- Zolfaghari, M., Austin, C. K., Kosko, K. W., & Alyami, H. (in press). Expanding a concept-specific measure of mathematical knowledge for teaching: Validation of the fractions instrument. *International Electronic Journal of Mathematics Education*.
- Gandolfi, E., Ferdig, R. E., & Kosko, K. W. (2024). Evaluating how extended reality delivery device and preservice teacher major impact presence in immersive learning environments. *British Journal of Educational Technology*, 55(5), 2296-2314. <http://doi.org/10.1111/bjet.13446>
- Ing, M., Kosko, K., Jong, C., & Shih, J. (2024). Validity evidence of the use of quantitative measures of students in elementary mathematics education. *School Science and Mathematics*, 124(6), 411-423. <https://doi.org/10.1111/ssm.12660>
- Kosko, K. W., Gandolfi, E., & Egbedeyi, T. (2024). Examining preservice teachers' embodied noticing when viewing traditional and holographic videos of students' fraction division. *Journal of Technology and Teacher Education*, 32(1), 99-122. <https://www.learntechlib.org/j/JTATE/v/32/n/1/>
- O'Mellan, A., Kosko, K. W., Pachnowski, L. M., Matney G., & Driskell, S. O. (2024). The potential impact of the removal of a middle grades licensure band on Ohio's teacher education majors. *Ohio Journal of School Mathematics*, 96, 47-56. <https://ohiomathjournal.org/index.php/OJSM/article/view/9881>
- Zolfaghari, M., Kosko, K. W., & Austin, C. K. (2024). Toward a better understanding of the nature of pedagogical content knowledge for fractions: The role of experience. *Investigations in Mathematics Learning*, 16(4), 263-280. <https://doi.org/10.1080/19477503.2024.2350909>
- Ferdig, R. E., Kosko, K. W., & Gandolfi, E. (2023). Exploring the relationships between teacher noticing, ambisonic audio, and variance in focus when viewing 360 video. *Educational Technology, Research and Development*, 71, 881-899. <https://doi.org/10.1007/s11423-023-10215-2>
- Austin, C. K., Kosko, K. W., & Hiesler, J. L. (2023). Mathematics and science teacher educators' use of representations of practice: A mixed methods study. *School Science and Mathematics Journal*, 123(1), 14-25. <http://doi.org/10.1111/ssm.12563>
- McCartney, J. L., Gidden, T., Biggs, J., Geething, K., & Kosko, K. (2023). Improving communication access with deaf people through nursing simulation: A cross-disciplinary collaboration. *Journal of Gender, Ethnic and Cross-Cultural Studies*, 2(1), 1-21. <https://epublications.marquette.edu/jgecp/vol2/iss1/8>
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- Amador, J., Estapa, A., Kosko, K., & Weston, T. (2021). Prospective teachers' noticing and mathematical decisions to respond: Using technology to approximate practice. *International Journal of Mathematical Education in Science and Technology*, 52(1), 3-22. <https://doi.org/10.1080/0020739X.2019.1656828>
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- Kosko, K. W., Weston, T. L., & Amador, J. (2021). 360 video as an immersive representation of practice: Interactions between reported benefits and teacher noticing. *Mathematics Teacher Education and Development*, 23(4), 162-181. <https://mtd.merga.net.au/index.php/mtd/article/view/635>
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- Ferdig, R. E., & Kosko, K. W. (2020) Implementing 360 video to increase immersion, perceptual capacity, and teacher noticing. *TechTrends*, 64, 849-859. <https://doi.org/10.1007/s11528-020-00522-3>
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- Kosko, K. W., & Guilford, E. (2018). Making students' mathematical arguments explicit. *Ohio Journal of School Mathematics*, 80, 43-50. <https://library.osu.edu/ojs/index.php/OJSM/article/view/6542>
- Kosko, K. W., & Singh, R. (2018). Elementary children's multiplicative reasoning: Initial validation of a written assessment. *The Mathematics Educator*, 27(1), 3-22. <https://doi.org/10.63301/tme.v27i1.2034>
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- Weston, T., Kosko, K. W., Amador, J., & Estapa, A. (2018). Prospective teachers' questioning: Comparing platforms for practice-based teacher education. *Journal of Technology and Teacher Education*, 26(1), 149-172. <https://www.learntechlib.org/p/181137/>
- Amador, J., Estapa, A., de Araujo, Z., Kosko, K., & Weston, T. (2017). Eliciting and analyzing preservice teachers' mathematical noticing. *Mathematics Teacher Educator*, 5(2), 158-177. <https://doi.org/10.5951/mathteaceduc.5.2.0158>
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- Kosko, K. W. (2017). Effects of student-reported gameplay strategy related to growth in multiplicative reasoning. *The Electronic Journal of Mathematics & Technology*, 11(3), 184-193.
- Kosko, K. W., & Gao, Y. (2017). Mathematical communication in state standards before the Common Core. *Educational Policy*, 31(3), 275-302. <https://doi.org/10.1177%2F0895904815595723>
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- Kosko, K. W., & Gao, Y. (2016). The tale of two teachers' use of prompts in mathematical discussions. *Issues and Ideas in Education*, 4(2), 111-130. <https://doi.org/10.15415/ie.2016.42009>
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- de Araujo, Z., Amador, J., Estapa, A., Weston, T., Aming-Attai, R., & Kosko, K. W. (2015). Animating preservice teachers' noticing. *Mathematics Teacher Education and Development*, 17(2), 25-44. <https://www.learntechlib.org/p/192622/>
- Kosko, K. W. (2015). Geometry students' self-determination and their engagement in mathematical whole class discussion. *Investigations in Mathematics Learning*, 8(2), 17-36. <https://doi.org/10.1080/24727466.2015.11790349>
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- Herbst, P. G., & Kosko, K. W. (2014). Using representations of practice to elicit mathematics teachers' tacit knowledge of practice: A comparison of responses to animations and videos. *Journal of Mathematics Teacher Education*, 17(6), 515-537. <https://doi.org/10.1007/s10857-013-9267-y>
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- Kosko, K. W., Rougee, A., & Herbst, P. (2014). What actions do teachers envision when asked to facilitate mathematical argumentation in the classroom? *Mathematics Education Research Journal*, 26(3), 459-476. <https://doi.org/10.1007/s13394-013-0116-1>

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- Kosko, K. W., & Norton, A. (2012). Relationships between the process standards: Processes elicited through letter writing between preservice teachers and high school mathematics students. *School Science and Mathematics*, 112(6), 340-348. <https://doi.org/10.1111/j.1949-8594.2012.00151.x>
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- Kosko, K. W., & Herbst, P. G. (2012). A deeper look at how teachers say what they say: A quantitative modality analysis of teacher-to-teacher talk. *Teaching and Teacher Education*, 28(4), 589-598. <https://doi.org/10.1016/j.tate.2011.11.010>
- Kosko, K. W., & Miyazaki, Y. (2012). The effect of student discussion frequency on fifth-grade students' mathematics achievement in U.S. schools. *The Journal of Experimental Education*, 80(2), 173-195. <https://doi.org/10.1080/00220973.2011.566588>
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- Kosko, K. W., Wilkins, J. L. M., & Pitts Bannister, V. R. (2009). Writing sophistication in students answers to algebraic questions. *The MathMate*, 33(1), 18-22.
- Austin, J. E., Cameron, T. L., Glass, M., Kosko, K., Marsh, F., Abdelmajid, R., & Burge, P. (2009). First semester experiences of professionals transitioning to full-time doctoral study. *The College Student Affairs Journal*, 27(2), 194 - 214. <https://eric.ed.gov/?id=EJ882663>

Editorials & Commentaries

- Herbst, P., Chazan, D., Crespo, S., Kosko, K. W., Matthews, P. G., & Lichtenstein, E. K. (2024). A way to consider balance among JRME publications: Descriptive, transformative, and reflective research. *Journal for Research in Mathematics Education*, 55(4), 156-162. <https://doi.org/10.5951/jresmetheduc-2024-0045>
- Kosko, K. W., Ferdig, R. E., & Roche, L. (2021). Editorial: Conceptualizing a shared definition and future directions for extended reality (XR) in teacher education. *Journal of Technology and Teacher Education*, 29(3), 257-278. <https://www.learntechlib.org/primary/p/219894/>

Book Reviews

- Kosko, K. W., & Wilkins, J. L. M. (2016). What mathematics do students know and how is that knowledge changing? Evidence from the National Assessment of Educational Progress [Book Review]. *Teachers College Record*, Date Published: March 10, 2016. <https://www.tcrecord.org> ID Number: 19574. <https://www.tcrecord.org/Content.asp?ContentId=19574>

Books

- Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A. (Eds.). (2024). *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. PME-NA.
- Bieda, K. N., Commer, A., Kosko, K. W., & Staples, M. (Eds.). (2022). *Conceptions and consequences of mathematical argumentation, justification, and proof*. Springer. <https://doi.org/10.1007/978-3-030-80008-6>

Edited Book Chapters

- Kosko, K. W., Caniglia, J., & Zolfaghari, M. (2023). Using makerspaces to create and produce mathematics manipulatives. In R. E. Ferdig, R. Hartshorne, E. Baumgartner, R. Kaplan-Rakowski, & C. Mouza, *What PreK-12 teachers should know about educational technology in 2023: A research-to-practice anthology* (pp. 379-386). Association for the Advancement of Computing in Education (AACE). <https://www.learntechlib.org/p/222690/>

- Kosko, K. W., Zolfaghari, M. & Heisler, J. L. (2022). How immersive should virtual field experiences be? A comparison of single and multi-perspective 360 video. In E. Baumgartner, R. Kaplan-Rakowski, R. E. Ferdig, R. Hartshorne, & C. Mouza (Eds.), *A retrospective of teaching, technology, and teacher education during the COVID-19 pandemic* (pp. 101-108). Association for the Advancement of Computing in Education (AACE).
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- Kosko, K. W., & Bieda, K. N. (2022). Conclusion: Considering the consequences of our conceptions of argumentation, justification, and proof. In K. N. Bieda, A. Conner, K. W. Kosko, & M. Staples (Eds.), *Conceptions and consequences of mathematical argumentation, justification, and proof* (pp. 313-323). Springer. http://dx.doi.org/10.1007/978-3-030-80008-6_25
- Kosko, K. W., Roche, L., Ferdig, R. E., Gandolfi, E., & Kratcoski, A. (2021). Integrating 360 media in teaching and teacher education. In R. E. Ferdig & K. Pytash (Eds.), *What teacher educators should have learned from 2020* (243-253). Association for the Advancement of Computing in Education (AACE). <https://www.learntechlib.org/p/219088/>
- Lenart, C., Yang, Y., Gu, Z., Lu, C.C., Kosko, K., Ferdig, R., & Guan, Q. (2021). GazeXR: A generally eye-tracking system enabling invariable gaze data in virtual environment. In J. Y. C., Chen, & G. Fragomeni (Eds.), *Virtual, augmented and mixed reality* (pp. 47-58). Springer.
https://doi.org/10.1007/978-3-030-77599-5_4
- Miller, M., Yang, Y., Kosko, K., Lu, C. C., Ferdig, R., & Guan, Q. (2020). Empeiría: Powering future education training systems with device agnostic web-vr apps. In J. Y. C. Chen & G. Fragomeni (Eds.), *Virtual, augmented and mixed reality. Industrial and everyday life applications* (pp. 287-300). New York: Springer. https://doi.org/10.1007/978-3-030-49698-2_19
- Kosko, K. W. (2019). The form of mathematics in assessment items: How items convey and measure multiplicative reasoning differently. In J. Bostic, E. Krupa, & J. Shih (Eds.), *Quantitative measures of mathematical knowledge: Researching instruments and perspectives* (pp. 14-40). New York, NY: Routledge. <https://doi.org/10.4324/9780429486197>
- Kosko, K. W., Sobolewski, L., & Amiruzzaman, M. (2018). Growing in number: Research on mathematical teaching and learning in the online setting. In K. Kennedy, & R. E. Ferdig (Eds.), *Handbook of research on K-12 online and blended learning* 2nd Ed. (pp. 289-302). Pittsburgh, PA: ETC Press. Retrieved at: <http://repository.cmu.edu/etcpress/82/>
- Kosko, K. W. (2016). Going beyond numbers to complicate the given information: Elementary children's mathematical writing. In J. K. Dowdy & Y. Gao (Eds.), *Pumping it up: Literacy activities for the classroom* (pp. 111 - 116). Boston: Sense Publishers.

- Herbst, P., Chazan, D., Chieu, V. M., Milewski, A., Kosko, K., & Aaron, W. (2016). Technology-mediated mathematics teacher development: Research on digital pedagogies of practice. In M. L. Niess, S. Driskell, & K. Hollerands (Eds.), *Handbook of Research on Transforming Mathematics Teacher Education in the Digital Age* (pp. 76-105). Hershey, PA: IGI Global.
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- Ferdig, R.E., Pytash, K.E., Kosko, K.W., Gandolfi, E., & Mathews, R. with Bedesem, P., Harjusola-Webb, S., Sansosti, F., Lu, C.C, Kratoski, A., Mulvey, B., and Boyle, S. (2016). *Use and perceptions of mobile applications and technologies by those interested in special education*. Kent, OH: Kent State University. Retrieved from <http://spedapps.kent.edu/2016survey.pdf>.
- Blades, C., & Kosko, K. W. (2005). *Appropriate practices in developing field experiences for pre-service teachers*. Unpublished manuscript, Content Quality Network, Winthrop University.

Creative Works

- Kosko, K. W. (2025). *Examples of students' whole number multidigit multiplication: A resource for teachers & teacher educators* [PowerPoint Slides]. ResearchGate. <http://dx.doi.org/10.13140/RG.2.2.11474.62407>

Grants & Funding

Grants in Review

Herbst, P., Brown, A., Chazan, D., & Kosko, K. [co-PI] (August 2026 – July 2029). *COLLABORATIVE RESEARCH: Improving measures of mathematics teachers recognition of their professional obligations and their use in justifying ambitious instruction*. National Science Foundation, STEM K-12 (Proposal #2607366) [\$696,913].

- Kent State University sub-award for \$49,990

Ferdig, R. E., Borgerding, L., Gandolfi, E., Kosko, K. W., Liu, R., & Alemagno, S. [PI] (August 2026 – July 2029). *Bridging the future: AI-enhanced STEM education for COVID-impacted communities in Northeast Ohio*. Moderna Charitable Foundation [\$448,299].

Active Grants:

Kosko, K. W. [PI] (August 2024 – July 2027). *Exploratory study of children's multi-digit multiplication and division*. National Science Foundation, DRK-12 (Award #2404553) [\$448,299].

Inactive Grants (project completed):

Kosko, K. W. [PI] (August 2024 – June 2025). *Engaging Future Teachers in Using 3D Printers for Classroom Materials*. University Teaching Council [\$1,985].

Caniglia, J., Zolfaghari, M., & Kosko, K. W. [co-PI] (July 2024 – May 2025). *KSU/APS Collaboration at Mason CLC*. Sisler McFawn Foundation [\$7,500].

Caniglia, J., Kosko, K. W., & Zolfaghari, M. [co-PI] (July 2023 – March 2024). *Bringing hope to school*. Sisler McFawn Foundation [\$7,500].

Kosko, K. W. [PI], Guan, Q., & Ferdig, R. E. (January 2023 – August 2024). Jaffe Foundation [\$101,928.67].

Kosko, K. W. [PI], Caniglia, J., & Ferdig, R. E. (March 2023 – May 2024). *Visualizing Math via Makerspace Manipulatives*. Martha Holden Jennings Foundation [\$14,940].

Kosko, K. W. [PI], Ferdig, R. E., Lu, C. C., Guan, Q. (September 2019 – August 2023). *Design and implementation of immersive representations of practice*. National Science Foundation, DRK-12 (Award #1908159) [\$1,488, 759].

- Kratcoski, A., Campbell, J. R., & Kosko, K. W. [co-PI]. (April 2021 – March 2022). *Immersed in deep learning with XR*. Martha Holden Jennings Foundation. [\$20,239].
- Kosko, K. W. [PI]. (August 2021 – June 2022). Holographic representations of practice: Piloting the use of student holograms to explore teachers' mathematical noticing. College of Education, Health and Human Services [\$5,000].
- Kosko, K. W. [PI] (2019). Using 360 video to teach future teachers. Kent State University, University Teaching Council [\$10,000].
- Kosko, K. W. [PI] (2017-2018). Designing a survey of third grade teachers' pedagogy for multiplication and division. Kent State University, University Research Council [\$2,500].
- Ferdig, R. E., Bedesem, P., Harjusola-Webb, S., Sansosti, F., & Lu, C. C. (2015 – 2016). [Key Personnel]. Exploring mobile apps for special education STEAM teaching and learning. AT&T Foundation [\$198,432].
- Marhefka, D., & Dunlosky, J. (2015 - 2017). [Key Personnel]. STTR Phase II: Digital eWriter for The Classroom. National Science Foundation, Division of Industrial Innovation & Partnership (Award # 1534669) [\$722,044].
- Kosko, K. W. [PI], & Ferdig, R. [Co-PI]. (May 2014 – April 2015). *Making mathematics mobile (M²): Collaborating with K-12 schools to explore mathematics apps*. Martha Jennings Holden Foundation [\$30,725].
- Kosko, K. W. [PI] (Aug. 2014 – June 2016). *More than numbers: Developing a mathematical writing intervention for children*. College of Education, Health and Human Services [\$5,000].

Invited Talks & Conference Presentations

- Kosko, K. W., Egbedeyi, T., & Gill, S. (March, 2026). *Efficacy of strategies and algorithms for multidigit multiplication*. Research report presented at the 53rd annual meeting of the Research Council on Mathematics Learning, Las Vegas, NV.
- Kosko, K. W. (October, 2019). *What multiplication algorithms are effective?* Presented at the 75th annual meeting of the Ohio Council of Teachers of Mathematics, Dayton, OH.
- Gill, S., Kosko, K. W., & Egbedeyi, T. (March, 2025). *Children's multiplicative reasoning when engaging with partial products*. Research report presented at the 52nd annual meeting of the Research Council on Mathematics Learning, College Station, TX.

- Kosko, K. W., Zolfaghari, M., Shihab, R., Aguilera, A., Gandolfi, E., & Ferdig, R. E. (March, 2025). *Developing measures of self-efficacy for teaching mathematics and concrete-to-abstract pedagogy*. Research report presented at the 52nd annual meeting of the Research Council on Mathematics Learning, College Station, TX.
- Kosko, K. W. (December, 2024). How novel technology and theory can shape research & practice in mathematics education. Keynote presentation at XXVIII National Conference on Mathematical Education. Sociedad Chilena De Educación Mathematica (SOCHIEM), Los Ángeles, Chile.
- Kosko, K. W. (October, 2019). *Modeling multi-digit multiplication & division: From concrete to abstract*. Presented at the 74th annual meeting of the Ohio Council of Teachers of Mathematics, Columbus, OH.
- Kosko, K.W. (February, 2024). The effect of preservice teachers' professional knowledge and embodied actions on their professional noticing. Virtual presentation to students and faculty of Texas State University.
- Kosko, K.W. (December, 2023). Use of 360 video in teacher education. Virtual presentation to the faculty of University of Concepción, Concepción Chile.
- Kosko, K. W., Zolfaghari, M., & Austin, C. K. (March, 2023). *Exploring teacher knowledge and noticing with eye-tracking and 360 video*. Research report presented at the 50th annual meeting of the Research Council on Mathematics Learning, Las Vegas, NV.
- Kosko, K. W. (April, 2022). *Equity and Classroom Observations* (Panelist). Classroom Observation SIG Business Meeting at the 2022 annual meeting of the American Educational Research Association, San Diego, CA.
- Kosko, K. W., & Heisler, J. (March, 2022). *Using 360 media for teaching students & reflecting on practice*. 2022 Learning Innovation Summit, Kent, OH.
- Kosko, K. W. (November, 2021). *Teachers' professional noticing of students' mathematics in 360 videos*. Presented to faculty and students in the Department Erziehungswissenschaft at the University of Potsdam, Germany.
- Heisler, J., & Kosko, K. W. (October, 2021). *Emerging themes from preservice teacher noticing within 360 video*. Research presentation at the Annual Meeting for the School Science and Mathematics Association, Cincinnati, OH (held virtually).
- Kosko, K. W. (February, 2021). *Using length arrays for multiplication and division*. Inspiring educators virtual conference. Hosted by Smokey Hill Education Service Center. Hays, KS.

- Austin, C., Heisler, J., & Kosko, K. W. (March, 2020). *Pedagogical content knowledge of teaching multiplication and division*. Poster presented at the Research Council on Mathematics Learning. Las Vegas, NV.
- McGalliard, W., & Kosko, K. W. (March, 2020). *Teachers' pedagogical and content knowledge for multiplicative reasoning*. Brief Report presented at the Research Council on Mathematics Learning. Las Vegas, NV.
- Zolfaghari, M., & Kosko, K. W. (March, 2020). *Pedagogical content knowledge of teaching fractions*. Poster presented at the Research Council on Mathematics Learning. Las Vegas, NV.
- Kosko, K. W. (February, 2020). *Using 360 video in professional training: The case of mathematics teacher education*. Presented to the College of Education, Health, and Human Services. Kent, OH: Kent State University.
- Heisler, J., Kosko, K. W., Zolfaghari, M., & Austin, C. (November, 2019). *Augmented, mixed and virtual reality: Professional growth & practice, tools, devices & apps*. Learning Innovations Conference. Kent, OH.
- Kosko, K. W. (October, 2019). *Training teachers through extended reality*. Presented at the STEM Entrepreneurship Event. Kent, OH. Viewable at: <https://youtu.be/-OqkfUpRYN8>
- Kosko, K. W., & Benjamin, J. (October, 2019). *ReSilience and Equity in STEAM Latinx Mathematics Education*. Ohio Latino Education Summit. Kent, OH.
- Kosko, K. W., & Mulvey, B. K. (June, 2019). *Math and science education pedagogy courses at Kent State University*. Virtual presentation to the faculty at Bahrain Teachers College, University of Bahrain.
- Kosko, K. W. (October, 2019). *Where does it come from? Fun history of elementary math 'tricks' and algorithms*. Presented at the 69th annual meeting of the Ohio Council of Teachers of Mathematics, Kalahari, OH.
- Benjamin, J., & Kosko, K. W. (February, 2019). *Children's conveyed multiplicative meaning across models*. Brief report presented at the 46th Annual conference of the Research Council on Mathematics Learning, Charlotte, NC.
- Kosko, K. W. (October, 2018). *Meaningful fraction multiplication and division*. Presented at the 68th annual meeting of the Ohio Council of Teachers of Mathematics, Akron, OH.
- Ferdig, R. E., & Kosko, K. W. (October, 2018). *Selecting meaningful apps for math teaching and learning*. Presented at the 68th annual meeting of the Ohio Council of Teachers of Mathematics, Akron, OH.
- Kosko, K. W. (February, 2018). *Justification in elementary students' mathematical argumentative writing*. Research report presented at the 45th annual meeting of the Research Council on Mathematics Learning, Baton Rouge, LA.

- Kosko, K. W. (October, 2017). *Using different models to represent multiplication and division in novel ways*. Presented at the 67th annual meeting of the Ohio Council of Teachers of Mathematics, Columbus, OH.
- Kosko, K. W. (October, 2016). *Using a tactile number line for K-5 math*. Presented at the 66th annual meeting of the Ohio Council of Teachers of Mathematics, Sandusky, OH.
- Kosko, K. W., & Singh, R. (February, 2016). *Colligation and unit coordination in mathematical argumentative writing*. Paper presented at the 43rd annual conference of the Research Council on Mathematics Learning, Orlando, FL.
- Kosko, K. W. (October, 2015). *Math writing tasks in early elementary grades*. Presented at the 65th annual meeting of the Ohio Council of Teachers of Mathematics, Cincinnati, OH.
- Kosko, K. W. (November, 2014). *Operationalizing the given information: Detailing in children's mathematical writing and its implications for development of proof* (Colloquium talk). Bowling Green State University, Bowling Green, OH.
- Kosko, K. W. (October, 2014). *Using multi-decision scenarios to facilitate teacher knowledge for mathematical questioning*. Round table presentation at the Annual Meeting for the School Science and Mathematics Association, Jacksonville, FL.
- Estapa, A., Amador, J., Aming-Attai, R., Kosko, K., de Araujo, Z., & Weston, T. (February, 2014). *Noticing in action: An animated look into the noticing of future elementary teachers*. Poster presented at Association of Mathematics Teacher Educators 2014 Conference Presession, Irvine, CA.
- Kosko, K., Rogers, K., & Taylor, M. (February, 2014). *What's in a task? How K-16 mathematics teachers attend to the standard for mathematical practice #3*. Poster presented at Association of Mathematics Teacher Educators 2014 Conference Presession, Irvine, CA.
- Herbst, P., Aaron, W., & Kosko, K. (2011). *LessonSketch: A set of online tools and resources for research on teacher thinking about and learning from practice*. Paper presented at the 2011 Annual Conference of the School Science and Mathematics Association, Colorado Springs, CO.
- Herbst, P., Kosko, K., & Aaron, W. (2011). *Assessing the geometry knowledge of teachers: Perspectives from item design and cognitive interviewing*. Paper presented at the 2011 Annual Conference of the School Science and Mathematics Association, Colorado Springs, CO.
- Chieu, V. M., Herbst, P. G., & Kosko, K. W. (2011). *LessonSketch's navigation and communication technologies to support teacher learning in, from, and for practice*. Poster presented at the 3rd Annual Representations of Mathematics Teaching Conference, Ann Arbor, MI.

- Herbst, P. G., & Kosko, K. W. (2011). Video and animated representations of teaching: How conducive are each of them to the development of conversations about practice? Paper presented at the 3rd Annual Representations of Mathematics Teaching Conference, Ann Arbor, MI.
- Kosko, K. W., & Herbst, P. G. (2011). *Creating an assessment of mathematical knowledge for teaching in geometry*. Poster presented at the 3rd Annual Representations of Mathematics Teaching Conference, Ann Arbor, MI.
- Conn, A., Kosko, K. W., & San Pedro, J. M. (2009). *Using pen-pal partnerships to prepare preservice teachers*. Paper presented at the 2009 Annual Conference of the School Science and Mathematics Association, Reno, NV.
- Kosko, K. W., & Norton, A. (2009). *How demanding are the NCTM process standards?* Paper presented at the 2009 Annual Conference of the School Science and Mathematics Association, Reno, NV.
- Kosko, K. W., Wilkins, J. L. M., & Pitts Bannister, V. (2009). *Writing sophistication in students' answers to algebraic questions*. Poster presented at the Fourth Annual Virginia Tech School of Education Student Association Research Conference, Blacksburg, VA.
- Kosko, K. W., & Wilkins, J. L. M. (2008). *Is mathematics discussion effective: Interesting results from a national data set and what they might mean*. Paper presented at the 2008 Annual Conference of the School Science and Mathematics Association, Raleigh-Durham, NC.
- Kosko, K. W. (2008). *General educators' inservice training and their self-perceived ability to adapt instruction for special needs students*. Poster presented at the 2008 Annual Conference of the American Council on Rural Special Education, Charleston, WV.
- Kosko, K. W. (2005) *Concrete to abstract*. Presented at the 2005 Annual Conference of the South Carolina Council of Teachers of Mathematics, Greenville, SC.

Peer-Reviewed Conference Presentations

- Gill, S., Kosko, K. W., & Kamberelis, G. (October, 2025). *Children's disciplinary literacy and spatial structuring*. Poster presented at the 47th annual meeting of the North American Chapter for the Psychology of Mathematics Education, State College, PA.
- Egbedeyi, T., & Kosko, K. W. (October, 2025). *Algorithms used in solving multi-digit multiplication*. Brief Report presented at the 47th annual meeting of the North American Chapter for the Psychology of Mathematics Education, State College, PA.

- Kosko, K. W., & Gill, S. (October, 2025). *Third graders' structuring of arrays: A constructive replication study*. Report presented at the 47th annual meeting of the North American Chapter for the Psychology of Mathematics Education, State College, PA.
- Kosko, K. W., Egbedeyi, T. & Gill, S. (October, 2025). *Children's multi-digit division & multiplication strategies*. Poster presented at the 47th annual meeting of the North American Chapter for the Psychology of Mathematics Education, State College, PA.
- Herbst, P., Chazan, D., Brown, A., & Kosko, K. (February, 2025). *The professional obligations of mathematics teaching: How measurement and theoretical progress work hand in hand*. Presented at the 14th Congress of the European Society for Research in Mathematics Education (CERME14). Bozen-Bolzano, Italy
- Egbedeyi, T., & Kosko, K. W. (November, 2024). *Preservice teachers' replications of a common fraction error*. Poster presented at the 46th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Cleveland, OH.
- Kosko, K. W. (November, 2024). *Children's exposure to multi-digit multiplication algorithms and its effect on their multiplicative reasoning*. Brief research report presented at the 46th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Cleveland, OH.
- Zolfaghari, M., Austin, C., Alyami, H., & Kosko, K. W. (November, 2024). *Evaluating mathematical knowledge for teaching fractions: Development and validation of the MKT-Fractions measure*. Poster presented at the 46th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Cleveland, OH.
- Zolfaghari, M., Oyewole, P., & Kosko, K. W. (November, 2024). *The effectiveness of an innovative manipulative in facilitating children's development in circle partitioning*. Research report presented at the 46th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Cleveland, OH.
- Ahadian, P. Kosko, K., Feng, Y., Ferdig, R., & Guan Q. (March, 2024). *FractionNet: AI-Driven insights in transforming handwritten fraction detection for teacher education*. Presented at the Society for Information Technology and Teacher Education international conference. Las Vegas, NV.
- Gandolfi, E., Ferdig, F., Kosko, K., & Clements, R. (March, 2024). *Does digital immersion matter? An analysis of the role of 360 videos within digital experiences for teacher training*. Presented at the Society for Information Technology and Teacher Education international conference. Las Vegas, NV.
- Yang, Y., Ren, Z., Lenart, C., Corsello, A., Kosko, K., Su, S., & Guan, Q. (December, 2023). *Deep learning-based student learning behavior understanding framework in real classroom scene*. Paper presented at the International Conference on Machine Learning and Applications (ICMLA). Jacksonville, FL.

- Lenart, C., Ahadian, P., Yang, Y., Suo, S., Corsello, A., Kosko, K., & Guan, Q. (October, 2023). Gaze analysis system for immersive 360 video for preservice teacher education. Paper presented at Association of Computing Machinery (ACM) Multimedia. Ottawa, Canada.
- Kosko, K. W., Austin, C. K., & Zolfaghari, M. (October, 2023). *Teachers' knowledge and use of visual fraction representations*. Brief research report presented at the 45th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Reno, NV.
- Kosko, K. W., Egbedeyi, T., & Gandolfi, E. (October, 2023). *Exploring preservice teachers' embodied noticing of students' fraction division*. Research report presented at the 45th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Reno, NV.
- Kaiser, G., Scheiner, T., Ayalon, M., Kosko, K. W., Kersting, N. B., Fernandez, C., Superfine, A. C., Walkoe, J., Bastian, A., Hoth, J., Lorrain, M., Yang, X., & Choy, B. H. (July, 2023). *Innovative research approaches to mathematics teacher noticing*. Research Forum presented at the 46th Conference of the International Group for the Psychology of Mathematics Education. Haifa, Israel.
- Kosko, K. W., & Ferdig, R. E. (July, 2023). *Relationships between prospective teachers' heart rate variation and noticing of children's mathematics*. Research Paper presented at the 46th Conference of the International Group for the Psychology of Mathematics Education. Haifa, Israel.
- Gandolfi, E., Austin, C. K., & Kosko, K. W. (April, 2023). *Being present in extended reality: Analyzing how pre-service teachers' presence changes in immersive learning environments*. Paper presented at the 2023 annual meeting for the American Educational Research Association (Division K), Chicago, IL.
- Austin, C. K., Heisler, J. L., & Kosko, K. W. (November, 2022). *Exploring the relationship between preservice teachers' mathematical noticing and their 360 video viewing*. Brief Report presented at the 44th annual meeting of the North American Chapter for the Psychology of Mathematics Education. Nashville, TN.
- Conner, A. M., Bieda, K., Cirillo, M., Kosko, K. W., & Staples, M. (2022). *Working group: Conceptions and consequences of what we call argumentation, justification, and proof*. Presented at the 44th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Nashville, TN.
- Kosko, K. W., Lenart, C., & Guan, Q. (November, 2022). *Comparing expert and novice teachers' noticing with eye-tracking in 360 video*. Poster presented at the 44th annual meeting of the North American Chapter for the Psychology of Mathematics Education. Nashville, TN.
- Zolfaghari, M., Kosko, K. W., Austin, C. K. (November, 2022). *Examining the nature of pedagogical content knowledge (PCK) with a validation argument for the PCK-Fractions measure*. Research

Report presented at the 44th annual meeting of the North American Chapter for the Psychology of Mathematics Education. Nashville, TN.

Amador, J., Weston, T., & Kosko, K. W. (July, 2022). *Supporting noticing of students' mathematical thinking through 360 video and prompt scaffolding*. Report presented at the 45th annual meeting of Psychology of Mathematics Education. Alicante, Spain.

Kosko, K. W., & Zolfaghari, M. (February, 2022). *Where and what preservice teachers report they notice when watching 360 videos*. Individual Session presented at the 2021 annual meeting of the Association of Mathematics Teacher Educators, Las Vegas, NV.

Weston, T., Kosko, K. W., & Amador, J. (February, 2022). *Using 360 video in mathematics teacher education methods courses and field experiences*. Individual Session presented at the 2021 annual meeting of the Association of Mathematics Teacher Educators, Las Vegas, NV.

Cirillo, M., Staples, M., Kosko, K. W., Newton J., Conner, A. M., & Gomez, C. N. (October, 2021). *Conceptions and consequences of what we call argumentation, justification, and proof*. Working Group presented at the 43rd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Philadelphia, PA.

Kosko, K. W., Ferdig, R. E., & Gandolfi, E. (October, 2021). *Noticing mathematics from multiple perspectives*. Poster presented at the 43rd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Philadelphia, PA.

Kosko, K. W., Yang, Y., Austin, C., Guan, Q., Gandolfi, E., & Gu, Z. (October, 2021). *Examining preservice teachers' professional noticing of students' mathematics through 360 video and machine learning*. Research Report presented at the 43rd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Philadelphia, PA.

Zolfaghari, M., Heisler, J., & Kosko, K. W. (October, 2021). *Teacher noticing of students' mathematics as student centered*. Brief Report presented at the 43rd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Philadelphia, PA.

Gandolfi, E., Ferdig, R. E., & Kosko, K. W. (July, 2021). *Observing, noticing, and experiencing (ONE): Using extended reality for preservice teacher training and professional development*. Connected Learning Summit, held Virtually.

Kosko, K. W., Ferdig, R. E., Gandolfi, E., & Heisler, J. (April, 2021). *Effect of positionality on preservice teachers' mathematical noticing in 360 video*. Roundtable Session presented at the 2021 annual meeting for the American Educational Research Association (Division C - Section 1c: Mathematics), held Virtually.

Zolfaghari, M., & Kosko, K. W. (February, 2021). *Applying multi-perspective 360 video in noticing assignments*. Individual Session presented at the 2021 annual meeting of the Association of Mathematics Teacher Educators, Orlando, FL.

Austin, C. K., & Kosko, K. W. (June, 2021). *Survey of preservice teachers' pedagogical content knowledge for students' multiplicative reasoning*. Research Report presented at the 42nd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Mazatlán, Sinaloa, Mexico.

***Conference rescheduled from October 2020 to June 2021 ***

Kosko, K. W., Heisler, J., & Gandolfi, E. (June, 2021). *Professional teacher noticing as embodied activity*. Poster presented at the 42nd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Mazatlán, Sinaloa, Mexico.

***Conference rescheduled from October 2020 to June 2021 ***

Zolfaghari, M., Kosko, K. W., & Heisler, J. (June, 2021). *Exploring preservice teachers' pedagogical content knowledge of teaching fractions*. Brief Report presented at the 42nd annual meeting of the North American Chapter for the Psychology of Mathematics Education. Mazatlán, Sinaloa, Mexico.

***Conference rescheduled from October 2020 to June 2021 ***

Miller, M., Yang, Y., Kosko, K., Lu, C. C., Ferdig, R., & Guan, Q. (July, 2020). *Empeiría: Powering future education training systems with device agnostic web-vr apps*. Presented at Human-Computer Interaction International 2020, Copenhagen, Denmark.

Ferdig, R. E., Gandolfi, E., & Kosko, K. W. (April, 2020). *Preservice teacher noticing and perceptual capacity with 360 video and VR headsets*. Poster presented at the Society for Information Technology & Teacher Education, New Orleans, LA.

Gandolfi, E., Ferdig, R. E., & Kosko, K. W. (April, 2020). *The extended reality presence scale*. Paper presented at the Society for Information Technology & Teacher Education, New Orleans, LA.

Kosko, K. W., Weston, T., & Amador, J. (February, 2020). *Incorporating immersive 360 video in mathematics teacher education: Potential and challenges*. Presented at the Annual Meeting of the Association of Mathematics Teacher Educators, Phoenix, AZ.

Kosko, K. W. (November, 2019). *Integrating 360 video into a mathematics methods course*. Poster presented at the 41st annual meeting of the North American Chapter for the Psychology of Mathematics Education, St. Louis, MO.

Kosko, K. W., Ferdig, R. E., & Zolfaghari, M. (November, 2019). *Preservice teachers' noticing in the context of 360 video*. Brief report presented at the 41st annual meeting of the North American Chapter for the Psychology of Mathematics Education, St. Louis, MO.

- Kosko, K. W. (November, 2018) *Teaching norms for the order of multiplication in third grade*. Poster presented at the 40th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Greenville, SC.
- Kosko, K. W., & Singh, R. (November, 2018) *Third grade textbooks' models for multiplication & division*. Brief report presented at the 40th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Greenville, SC.
- Amiruzzaman, M., & Kosko, K. W. (October, 2017). *Preservice mathematics teachers' understanding of mode*. Brief report presented at the 39th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Indianapolis, IN.
- Kosko, K. W. (October, 2017) *Effects of a mathematical writing treatment on children's conception of equivalence*. Poster presented at the 39th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Indianapolis, IN.
- Singh, R., & Kosko, K. W. (October, 2017). *Exploring the structure of equivalence items in an assessment of elementary grades*. Paper presented at the 39th annual meeting of the North American Chapter for the Psychology of Mathematics Education, Indianapolis, IN.
- Kosko, K. W., Weston, T. L., Estapa, A., & Amador, J. (April, 2017). Preservice teachers' approximations of questioning. Roundtable presented at the 2017 annual meeting for the American Educational Research Association (Division K), San Antonio, TX.
- Kosko, K. W., & Singh, R. (April, 2017). What are fourth-grade NAEP multiplication items assessing? Poster presented at the 2017 annual meeting for the American Educational Research Association (Special Interest Group – Research in Mathematics Education), San Antonio, TX.
- Kosko, K. W. (February, 2017). *Using branching experiences in LessonSketch to open discourse about preservice teachers' pedagogical decisions and justifications*. Poster presented at the annual meeting for the Association of Mathematics Teacher Educators, Orlando, FL.
- Amador, J., Estapa, A., Weston, T., & Kosko, K. W. (November, 2016). *Communicating professional noticing through animations as a transformational approximation of practice*. Research report presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.
- Amiruzzaman, M., & Kosko, K. W. (November, 2016). *Exploring students' understanding of median*. Brief research report presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.
- Kosko, K. W. (November, 2016). *Preservice elementary mathematics teachers' decision making: The questions they ask and the tasks they select*. Brief research report presented at the 38th annual

meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.

Kosko, K. W., & Singh, R. (November, 2016). *Children's linguistic and numeric unit coordination*. Research report presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.

Staples, M., Newton, J., Kosko, K. W., Cirillo, M., Conner, A., & Bieda, K. (October, 2016). *Conceptions and consequences of what we call argumentation, justification, and proof*. Working group at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.

Singh, R., & Kosko, K. W. (October, 2016). *Elementary students' understanding of equivalence and multiplicative reasoning*. Poster presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.

Strachota, S., Hummer, J., Cirillo, M., Newton, J., Kosko, K. W., Staples, M., & Weber, K. (October, 2016). *Conceptions of Proof, Argumentation, and Justification*. Poster presented at the 38th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tuscan, AZ.

Singh, R., & Kosko, K. W. (July, 2016). *Effect of the structure of the mathematical equivalence problems on students' strategy*. 13th International Congress on Mathematical Education, Hamburg, Germany.

Kosko, K. W., & Singh, R. (April, 2016). *Piloting an assessment of elementary children's unit coordination related to multiplicative reasoning*. Roundtable presented at the 2016 annual meeting for the American Educational Research Association (Special Interest Group – Research in Mathematics Education), Washington D.C.

Kosko, K. W., & Singh, R. (April, 2016). *Children's mathematical argumentative writing and their understanding of equivalence*. Roundtable presented at the 2016 annual meeting for the American Educational Research Association (Special Interest Group – Research in Mathematics Education), Washington D.C.

Cirillo, M., Kosko, K. W., Newton, J., Staples, M., & Weber, K. (November, 2015). *Conceptions and consequences of what we call argumentation, justification, and proof*. Working group at the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Lansing, MI.

Singh, R., & Kosko, K. W. (November, 2015). *Lost in transition: Difficulties in adapting relational view of equals sign*. Brief report presented at the 37th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Lansing, MI.

- Courtney, S., Kosko, K. W., McMahon, L. (April, 2015). *In the eye of the beholder: Mathematics teacher educators' interpretations of standards for mathematical practice*. Roundtable presentation at the American Educational Research Association (Division K), Chicago, IL.
- Kosko, K. W. (April, 2015). *Branching decisions: A means for examining teachers' decision paths for pedagogical choices*. Paper presented in symposium at the American Educational Research Association (Special Interest Group - Research in Mathematics Education), Chicago, IL.
- Kosko, K. W., & Rogers, K. C. (April, 2015). *Using barebones mathematical figures to examine elementary and collegiate instructors' conceptions of SMP3*. Round table presentation in roundtable session at the American Educational Research Association (Special Interest Group - Research in Mathematics Education), Chicago, IL.
- Kosko, K. W., & Zimmerman, B. (April, 2015). *Emergence of argument in children's mathematical writing*. Paper presented at the annual meeting for the American Educational Research Association (Division C), Chicago, IL.
- Estapa, A., Amador, J., de Araujo, Z., Weston, T., Kosko, K., & Aming-Attai, R. (April, 2015). *Noticing transfer across mediums for future elementary teachers*. Paper presented at the National Council of Teachers of Mathematics, Boston, MA.
- Amador, J., Estapa, A., Weston, T., Kosko, K., de Araujo, Z., & Aming-Attai, R. (February, 2015). *Noticing exposed through preservice teachers' video animations*. Presented at the Annual Meeting of the Association of Mathematics Teacher Educators, Orlando, FL.
- Courtney, S., & Kosko, K. (February, 2015). *Forecasting the impact and lifespan of the common core standards for mathematical practice*. Presented at the Annual Meeting of the Association of Mathematics Teacher Educators, Orlando, FL.
- Kosko, K. W., & Gao, Y. (July, 2014). *Perceptions and reality: One teacher's use of prompts in mathematical discussions*. Research report presented at the combined meeting for the 38th annual meeting of the International Group for the Psychology of Mathematics Education and 36th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Vancouver, Canada.
- Erickson, A. W., Herbst, P., Dimmel, J., Kosko, K., & Koh, I. (July, 2014). *Mathematics teachers' recognition of an obligation to the discipline and its role in the justification of instructional actions*. Research report presented at the combined meeting for the 38th annual meeting of the International Group for the Psychology of Mathematics Education and 36th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Vancouver, Canada.

- Kosko, K. W. (May, 2014). *Mathematical writing: An exploratory study of one concrete operational child's mathematical descriptions*. Research report presented at the 44th Annual Meeting of the Jean Piaget Society, San Francisco, CA.
- Kosko, K. W. (November, 2013). *Teacher questioning: Does MKT and supporting student autonomy predict it?* Brief research report presented at the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.
- Herbst, P. G., Kosko, K. W., & Dimmel, J. K. (November, 2013). *How are geometric proof problems presented? Conceptualizing and measuring teachers' recognition of the diagrammatic register?* Research report presented at the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.
- Kosko, K. W., & Herbst, P. G. (April, 2013). *Opening opportunities for discourse in the face of norms for posing proof problems*. Round table paper presented at the 2013 Annual Meeting of the American Educational Research Association, Division C, San Francisco, CA.
- Kosko, K. W., Rougee, A., & Herbst, P. G. (April, 2013). *What actions do teachers envision when asked to facilitate mathematical argumentation in the classroom?* Round table paper presented at the 2013 Annual Meeting of the American Educational Research Association, Division C, San Francisco, CA.
- Herbst, P., Chazan, D., Kosko, K. W., Aaron, W., Dimmel, J., Buchbinder, O., & Erickson, A. W. (April, 2013). *Methods to study decisions in mathematics teaching*. Research symposium presented at the National Council of Teachers of Mathematics Research Presession, Denver, CO.
- Kosko, K. W., & Chieu, V. M. (April, 2013). *Piloting online professional development for facilitating the Common Core*. Interactive paper presented at the National Council of Teachers of Mathematics Research Presession, Denver, CO.
- Kosko, K. W., & Herbst, P. (October, 2012). *Evaluating teachers' decisions in posing a proof problem*. Research report presented at the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.
- Herbst, P., & Kosko, K. W. (October, 2012). *Mathematical knowledge for teaching high school geometry*. Research report presented at the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.
- Kosko, K. W. (October, 2012). *Mathematical listening: Self-reports of how students listen and its relation to engagement in mathematical discussion*. Research brief presented at the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.

- Herbst, P. G., & Kosko, K. W. (April, 2012). *Using cases as triggers for teachers' thinking about practice: A comparison of responses to animations and videos*. Round table paper presented at the 2012 Annual Meeting of the American Educational Research Association, Division C, Vancouver, Canada.
- Kosko, K. W., & Herbst, P. G. (April, 2012). *Teachers' notions of facilitating mathematical discussion and the influence of professional obligations for mathematics teaching*. Poster presented at the 2012 Annual Meeting of the American Educational Research Association, Division K, Vancouver, Canada.
- Kosko, K. W., & Herbst, P. G. (2011). *Where's the proof? Proof in U.S. high school geometry content standards*. Paper presented at the 33rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Reno, NV.
- Kosko, K. W. (2011). *Self-regulation of mathematical writing*. Poster presented at the 2011 Annual Meeting of the American Educational Research Association, SIG – Research in Mathematics Education, New Orleans, LA.
- Herbst, P., Aaron, W., Chieu, V. M., Dimmel, J., Erickson, A., Kosko, K. W., Rougee, A. (2011). *Learning about the work of doing mathematics from geometric problem solving*. Presented concurrently at the 2011 Math In Action Conference and 2011 Conversations among Colleagues Conference. Grand Valley State University, Grand Rapids, MI.
- Kosko, K. W., & Wilkins, J. L. M. (2010). *Communicating quantitative literacy*. Research Brief presented at the 32nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Columbus, OH.
- Kosko, K. W. (2010). *Student-reported listening in mathematical discussion*. Poster presented at the 32nd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Columbus, OH.
- Kosko, K. W., & Wilkins, J. L. M. (2010). *Students' quality of mathematical discussion and their self-determination in mathematics*. Round Table presentation at the 2010 Annual Meeting of the American Educational Research Association, SIG – Research in Mathematics Education, Denver, CO.
- Kosko, K. W., & Miyazaki, Y. (2009). *Compound effects of mathematics discussion on fifth grade math achievement*. Paper presented at the 31st Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Atlanta, GA.
- Kosko, K. W. (2009). *Discussion and writing in mathematics: How it works and how to make it work*. Presented at the 2009 Annual Meeting of the National Council of Teachers of Mathematics, Washington, D.C.

Austin, J., Cameron, T., Glass, M., Kosko, K., Marsh, F., Abdelmagid, R., & Burge, P. (2008) *The first semester transition experience of full-time professionals transitioning to doctoral students in education*. Paper presented at the 2008 Annual Conference of the Eastern Education Research Association, Hilton Head, SC.

Kosko, K. W. (2007) *Beliefs about inclusion in secondary and middle level mathematics classrooms: A replication study*. Paper presented at the 2007 Annual Conference of the Eastern Education Research Association, Clearwater, FL.

TEACHING & INSTRUCTION

Courses Taught at Kent State University

Course	Semester(s) Taught <i>In order from 'most recently taught'</i>
ECED 40404 <i>Teaching Mathematics in the Elementary Years II</i>	Fall 2021, Fall 2022 – Spring 2024
ECED 40147 <i>Teaching Mathematics: Early Years II</i>	Fall 2012 – Fall 2017, Spring 2019 & Fall 2019, Fall 2020 – Spring 2021
CI 67004/77004 <i>Professional Development in Teaching</i>	Fall 2017, Fall 2019, Spring 2021
ECED 40107 <i>Teaching Mathematics: Early Years I</i>	Spring 2018 – Fall 2018, Fall 2022 – Fall 2023
CI 87791 <i>Doctoral Seminar in Mathematics Education</i>	Fall 2014 – Spring 2018, Fall 2022 – Fall 2023
EVAL 88795 <i>Special Topics: Mixed Methods</i>	Spring 2018
CI 67095/77095 <i>Special Topics: Learning Theories in Mathematics Education</i>	Spring 2015
CI 67226/77226 <i>Improving Mathematics Instruction in Middle Childhood</i>	Spring 2014
ADED 42292 <i>Mathematics Field Work Practicum</i>	Fall 2013

Courses Taught at Virginia Tech

Course

EDCI 4754/5754

Internship in Education: Mathematics

Semesters Taught

In order from 'most recently taught'

Spring 2007, Spring 2008, Spring 2009

PROFFESIONAL SERVICE

Journal Reviewer

Completed review(s) within the past five (5) years.

This list is complete to the best of my knowledge.

American Educational Research Journal (AERJ)

Educational Researcher

Educational Studies in Mathematics (ESM)

International Electronic Journal of Mathematics

Education (IEJME)

Investigations in Mathematics Learning (IML)

Journal of Mathematical Behavior (JMB)

Journal of Mathematics Teacher Education (JMTE)

Journal of Research in Mathematics Education (JRME)

Journal of Teacher Education (JTE)

Journal of Teaching and Teacher Education (JTTE)

Journal of Technology and Teacher Education

(JTATE)

Mathematical Thinking and Learning (MTL)

Ohio Journal of School Mathematics (OJSM)

Studies in Educational Evaluation (SEE)

School Science & Mathematics Journal (SSMJ)

Conference Proposals Reviewer

- 2025 Research Council on Mathematics Learning (proceedings reviewer)
- 2024 Psychology of Mathematics Education - North America (PME-NA)
- 2024 Research Council on Mathematics Learning (proceedings reviewer)
- 2023 Association of Mathematics Teacher Educators (AMTE)
- 2022 Psychology of Mathematics Education - North America (PME-NA)
- 2022 Research Council on Mathematics Learning (proceedings reviewer)
- 2021 Psychology of Mathematics Education - North America (PME-NA)
- 2021 Research Council on Mathematics Learning (proceedings reviewer)
- 2020 Research Council on Mathematics Learning (proceedings reviewer)
- 2019 Psychology of Mathematics Education - North America (PME-NA)
- 2019 Research Council on Mathematics Learning
- 2018 American Educational Research Association
Division C - Learning & Instruction, Section 1c: Mathematics.
- 2018 Psychology of Mathematics Education - North America (PME-NA)

- 2017 American Educational Research Association
Division C – Learning & Instruction, Section 1c: Mathematics.
- 2017 Psychology of Mathematics Education – North America (PME-NA)
- 2017 Research Council on Mathematics Learning (proceedings reviewer)
- 2016 Psychology of Mathematics Education – North America (PME-NA)
- 2016 Research Council on Mathematics Learning (proceedings reviewer)
- 2015 Psychology of Mathematics Education – North America (PME-NA)
- 2015 American Educational Research Association
Special Interest Group: Research in Mathematics Education.
- 2015 National Council of Teachers of Mathematics – Research Conference
- 2015 Research Council on Mathematics Learning (proceedings reviewer)
- 2014 American Educational Research Association
Special Interest Group: Research in Mathematics Education.
- 2014 Research Council on Mathematics Learning (proceedings reviewer)
- 2013 Psychology of Mathematics Education – North America (PME-NA)
- 2013 American Educational Research Association
Division C – Learning & Instruction, Section 1c: Mathematics.
Special Interest Group: Research in Mathematics Education.
- 2012 Psychology of Mathematics Education – North America (PME-NA)
- 2012 Association of Mathematics Teacher Educators (AMTE)
- 2012 American Educational Research Association
Division C – Learning & Instruction, Section 1c: Mathematics.
Special Interest Group: Research in Mathematics Education.
- 2011 Psychology of Mathematics Education – North America (PME-NA)
- 2010 Psychology of Mathematics Education – North America (PME-NA)
- 2009 American Educational Research Association
Special Interest Group: Research in Mathematics Education (Graduate Reviewer).
- 2006 Eastern Educational Research Association (EERA)

Dissertation and Thesis Committees

Students listed without titles have passed their comprehensive exams and are writing their dissertation proposal. Other students listed as ‘in progress’ have passed their dissertation proposal defense.

Chair or Co-Chair

Kyler, C. (in progress).

- Co-Chair of Committee.

Egbedeyi, T. (in progress).

- Co-Chair of Committee.

- Lett, T. (2026). *Exploring the effects of mentorship on Black college students' sense of belonging* (doctoral dissertation). Kent, OH: Kent State University.
- Co-Chair of Committee.
- Shakoor, A. (2025). *Learning approaches among pre-service teachers: A comparative study between two universities from USA and Pakistan* (doctoral dissertation). Kent, OH: Kent State University.
- Co-Chair of Committee.
- Austin, C. K. (2023). *The relationship between introductory tertiary mathematics students' mathematical attitude, motivation, and their reported use of automatic online feedback* (doctoral dissertation). Kent, OH: Kent State University.
- Co-Chair of Committee.
- Zolfaghari, M. (2023). *Elementary grade students' demonstrated fragmenting with visual static models* (doctoral dissertation). Kent, OH: Kent State University.
- Committee Chair.
- Benjamin, J. (2022). *And yet, she persists: An investigation of the effects of stereotype threat on women's construction of their mathematical and gender identities* (doctoral dissertation). Kent, OH: Kent State University.
- Co-Chair of Committee.
- Krasniqi, F. (2022). *Curriculum traditions in teacher preparation: A mixed methods study of Kosovo teacher educators' views on effective teacher preparation* (doctoral dissertation). Kent, OH: Kent State University.
- Committee Chair.
- Amiruzzaman, M. (2019). *Use of Twitter among college students and its impact of their academics* (doctoral dissertation). Kent, OH: Kent State University.
- Co-Chair of Committee.
- Alexander, A. (2019). *The perceptions of alignment between advanced placement Calculus AB and college Calculus I: A mixed methods study of instructional strategies, curriculum, and assessment* (doctoral dissertation). Kent, OH: Kent State University.
- Committee Chair.
- Singh, R. (2019). *Role of structure of equations in identifying students' conception of equivalence* (doctoral dissertation). Kent, OH: Kent State University.
- Committee Chair.
- Muckridge, N. (2017). *Adult developmental learners' knowledge of fraction addition and subtraction* (doctoral dissertation). Kent, OH: Kent State University.
- Co-Chair of Committee.

Sobolewski-McMahon, L. (2017). *Middle school mathematics teachers' perceptions of the Common Core State Standards for Mathematical Practice* (doctoral dissertation). Kent, OH: Kent State University.

- Co-Chair of Committee.

Amiruzzaman, M. (December, 2016). Exploring preservice teachers' understanding of measures of central tendency (doctoral dissertation). Kent, OH: Kent State University.

- Co-Chair of Committee.

Trehan, D. M. (December, 2015). *The impact of concept mapping as a learning tool on student perceptions of and experiences with introductory statistics* (doctoral dissertation). Kent, OH: Kent State University.

- Co-Chair of Committee.

Member of Committee

Al Kiyumi, F. (in progress).

Novelli, A. (in progress). *Understanding student attitudes towards mobile digital distraction* (doctoral dissertation). Kent, OH: Kent State University.

Alsowat, A. I. (in progress). *Saudi EFL teachers' self-efficacy in teaching English as a foreign language in early childhood* (doctoral dissertation). Kent, OH: Kent State University.

Shihab, R. (in progress). *The impact of hands-on emerging technology experience on self-efficacy: A comparative study of preservice teachers and predoctoral dentist students* (doctoral dissertation). Kent, OH: Kent State University.

Wiedenfeld, L. (2025). *Finding my people: Value creation in an Orff Schulwerk level one* (doctoral dissertation). Kent, OH: Kent State University.

Currey, B. S. (2025). *Third-grade girls (and boys) who code: The effect of a robotic coding intervention, gender, and SES on spatial cognition* (doctoral dissertation). Kent, OH: Kent State University.

Plaster, K. B. (2024). *Identifying high school mathematics that represents the engineering profession* (doctoral dissertation). Kent, OH: Kent State University.

Quanfu, Y. (2024). *On the character codegrees of finite groups* (doctoral dissertation). Kent, OH: Kent State University.

Widmer, F. (2021). *A sequential explanatory mixed methods research study of teachers' perceptions and perspectives of high-quality movement in the classroom* (doctoral dissertation). Kent, OH: Kent State University.

- Baumgartner, E. E. (2020). *The impact of virtual reality and 360-degree video on spatial reasoning skills in elementary students* (doctoral dissertation). Kent, OH: Kent State University.
- Elsharif, R. (2020). *The average of some irreducible character degrees* (doctoral dissertation). Kent, OH: Kent State University.
- Montgomery, M. L. (2020). *Educational vision in the 21st century: A quantitative study of the effect of superintendent vision on digital learning* (doctoral dissertation). Kent, OH: Kent State University.
- Pang, X. (2020). *On the nature of academic rankings: The relationship between the academic rankings' quality of education and the quality of curriculum in Ph.D. C&I programs in America* (doctoral dissertation). Kent, OH: Kent State University.
- Bissler, M. W. (2017). *Character degree graphs of solvable groups* (doctoral dissertation). Kent, OH: Kent State University.
- Crawford, A. (2017). *Self-determination theory and middle school mathematics teachers: Understanding the motivation to attain professional development* (doctoral dissertation). Kent, OH: Kent State University.
- Eliustaoglu, E. (May, 2016). *Investigation of fraction schemes and models as a means to understand how sixth grade students make sense of fractions* (Masters thesis). Kent, OH: Kent State University.
- Stoyle, K. (May, 2016). *Supporting mathematical explanation, justification, and argumentation through multimedia* (doctoral dissertation). Kent, OH: Kent State University.
- Brennan, C. R. (May, 2015). *Implementation of authentic online investigative activities in ratio and proportion for adult learners* (doctoral dissertation). Kent, OH: Kent State University.
- Stoll, J. (2014). *Development of a survey instrument to gauge preschool teachers' knowledge, behaviors and attitudes regarding the National Council of Teachers of Mathematics (NCTM) process standards* (doctoral dissertation). Kent, OH: Kent State University.

Graduate Faculty Representative

- Almutairi, R. (2024). *Examining Saudi Arabian pre-service teachers' perspectives on their preparedness to address 21st-century skills with their perspectives of their course instructors* (doctoral dissertation). Kent, OH: Kent State University.
- Morris, G. (2024). *Exploring pre-service educators' development of creativity through game-based learning* (doctoral dissertation). Kent, OH: Kent State University.
- Li, L. (2024). *Teachers' lived experiences of disruptive classroom behavior in self-contained classrooms for students with emotional and behavioral disorders* (doctoral dissertation). Kent, OH: Kent State University.
- Valerio, M. A. (2023). *Negotiations, enactments, and reading cultural constructs during guided reading: A case study of a third grade classroom community* (doctoral dissertation). Kent, OH: Kent State University.

- Brannon, M. E. (2022). *Exploring the impact of design thinking on creativity in preservice teachers* (doctoral dissertation). Kent, OH: Kent State University.
- Giannamore, K. (2020). *Aligning the necessary competencies for training and evaluating online teachers in higher education with Clickering and Gamson's seven principles for effective undergraduate teaching: A Q methodology study* (doctoral dissertation). Kent, OH: Kent State University.
- Raber, J. (2020). *Analysis of motivation, situational interest, and augmented reality* (doctoral dissertation). Kent, OH: Kent State University.
- Roginski, D. (2020). *From problem to possibilities: Shifts in early childhood preservice teachers' noticing of K-1 writers* (doctoral dissertation). Kent OH: Kent State University.
- McFarland, M. R. (2017). *Student pilot aptitude as an indicator of success in a Part 141 collegiate flight training program* (doctoral dissertation). Kent, OH: Kent State University.
- Remark, L. N. (2017). *Portraits of Developmental Reading Students: A Case Study Exploration* (doctoral dissertation). Kent, OH: Kent State University.

Other Professional Service

University Service:

2023 – present	Advisory Council on Academic Assessment
2023	Review Committee for KSU Outstanding Research and Scholarship Award (Humanities)
2021 – present	Research and Sponsored Programs Advisory Council
2014 – 2023	University Council on Technology
2015 – 2016	Student Survey of Instruction, Review Committee Advisory Board
2015 – 2016	Clicker Sub-committee (<i>Ad hoc for University Council on Technology</i>)
2015 – 2016	Scantron Sub-committee (<i>Ad hoc for University Council on Technology</i>)

College (EHHS) Service:

2020 – present	Technology Advisory Committee
2014 – present	Graduate Appeals Committee
2021 – 2023	College Curriculum Committee
2020 – 2021	Honors and Awards Committee <ul style="list-style-type: none"> • Chair of Committee
2018 – 2020	College Advisory Council (CAC)
2018 – 2019	Honors and Awards Committee
2018	Value-Added Module Recommendations and Design <ul style="list-style-type: none"> • Provided recommendations for a two-part module for teacher candidates across all programs, related to Value-Added Measures. This included writing the second part module focusing on interpreting value-added reports.
2014 – 2016	Technology Advisory Council
2014 – 2015	Search Committee: Early Childhood Mathematics Education Tenure-Track Position <ul style="list-style-type: none"> • Co-Chair of Committee

- 2013 – 2014 Search Committee: Special Education Early Childhood Tenure-Track Position
- External Member

School (TLC) Service:

- 2025 Search Committee: Director of TLC / FLA
- Co-Chair
- 2022 – present Core Courses for Ph.D. [*Ad hoc Committee for Curriculum & Instruction*]
- 2021 – 2026 School Curriculum Committee
- Chair of Committee [2023-2026]
- 2020 – 2021 Scholarship Committee
- 2019 Online Master's Degree Implementation
- [*Ad hoc Committee for Curriculum & Instruction*]
- Chair
- 2017 – 2020 Faculty Advisory Committee
- 2017 – 2018 Search Committee: Educational Technology Tenure-Track Position
- Member
- 2015 – 2016 Early Childhood Equity [*Ad hoc Committee for Early Childhood*]
- 2015 – 2016 Online Master's Degree Option [*Ad hoc Committee for Curriculum & Instruction*]
- Chair of Committee

Affiliation and Membership

- 2012 – present Center for Math and Science Education
- 2012 – present Early Childhood Education Program
- 2012 – present Curriculum and Instruction Program

State Level Service

- 2024 – 2027 Ohio Mathematics Education Leadership Council (OMELC)
- Higher Education Representative
- Ohio Council of Teachers of Mathematics Journal Advocate / Liaison
- Ohio Mathematics & Science Collaborative Liaison
- 2024 – 2025 Ohio Department of Higher Education
- P-8 Standards Creation Committee
- 2024 Ohio State Board of Education and Pearson Evaluation Systems group
- Online Item Review Committee for the Ohio Assessments for Educators (OAE).
- 2018 – present Ohio Department of Education & Workforce
- Grade 5 Mathematics Content Advisory Committee
- 2018 Ohio Department of Education
- External Review of Ohio Extended Mathematics Learning Standards

National and International Service

2023 - 2025	Journal for Research in Mathematics Education (JRME): <i>Associate Editor</i>
2024 - 2025	Psychology of Mathematics Education - North America <i>Steering Committee Member - former Local Organizing Committee</i>
2023 - 2024	Psychology of Mathematics Education - North America <i>Local Organizing Committee Chair for PME-NA 46 in Cleveland, OH</i> <i>Strand Leader for Statistics and Measurement</i>
2020 - 2023	National Council of Teachers of Mathematics (NCTM) Journal for Research in Mathematics Education (JRME) Committee <i>Committee Member (2020 - 2022)</i> <i>Committee Chair (2022 - 2023)</i>
2020	National Science Foundation Review Panelist - Washington, D.C.
2019 - 2022	Psychology of Mathematics Education - North America <i>Steering Committee Member (2019 - 2021)</i> <i>Steering Committee Chair (2021 - 2022)</i>
2019 - 2026	Investigations in Mathematics Learning Editorial Board Member
2018	Psychology of Mathematics Education Annual Meeting <i>Strand Leader for Student Learning & Related Factors</i>
2015 - 2023	Journal of Technology and Teacher Education <i>Editorial Review Board Member</i>
2015 - 2017	American Educational Research Association <i>Section Chair for Division C, Section 1c: Mathematics</i>
2015	National Science Foundation Review Panelist - Washington, D.C.
2014	National Science Foundation Review Panelist - Washington, D.C.
2014	Jean Piaget Society Annual Meeting - Session Chair
2014	Psychology of Mathematics Education Annual Meeting - Session Chair

Professional Organizations (current)

National Council of Teachers of Mathematics (NCTM)
 Ohio Council of Teachers of Mathematics (OCTM)
 Ohio Mathematics Education Leadership Council (OMELC)
 Psychology of Mathematics Education - North America (PME-NA)
 Research Council on Mathematics Learning (RCML)

PROFESSIONAL EXPERIENCE

Professor, Mathematics Education Kent State University	August 2023 – present
Associate Professor, Mathematics Education Kent State University	August 2018 – present
Assistant Professor, Mathematics Education Kent State University	August 2012 – July 2018
Post Doctoral Research Fellow University of Michigan NSF Grant: Thought Experiments in Mathematics Teaching II (#0918449) Principal Investigator: Patricio Herbst	July 2010 – August 2012
Graduate Research Assistant Virginia Tech Mentor/Advisor: Jesse L. M. Wilkins	August 2006 – June 2010
Teacher Education Supervisor: Secondary Mathematics Virginia Tech Mentor/Advisor: Vanessa R. Pitts Bannister	August 2006 – May 2009
Teacher York County District #3. Rock Hill, SC	August 2002 – May 2006
Teacher Mentor Winthrop University	2005 – 2006
Research Assistant South Carolina Middle School Association Content Quality Network	2005

HONORS & AWARDS

2025	Kenneth Cummins Award for Exemplary Mathematics Teaching <i>Ohio Council of Teachers of Mathematics</i>
2020	President's Faculty Excellence Award <i>Kent State University</i>
2019	Outstanding New Faculty Research and Scholarship Award <i>Kent State University</i>
2019	Outstanding Early Career Researcher Award <i>Kent State University – College of Education, Health, & Human Services</i>
2015 – 2016	Teaching Scholar <i>Kent State University</i>
2013	STaR Fellow (Service, Teaching and Research Program – 4 th Cohort).
2010	Outstanding Graduate Student Award <i>Virginia Tech – School of Education</i>
1998	Eagle Scout <i>Boy Scouts of America</i>