

[Determining Prerequisites for Middle School Students to Participate in Robotics-based STEM Lessons: A Computational Thinking Approach \(NSF #1417769\)](#)

Conference Presentations

Brill, A.S., Elliott, C.H., Listman, J.B., Milne, C., and Kapila, V. Middle School Teachers' Evolution of TPACK Understanding through Professional Development. Proceeding of ASEE Annual Conference and Exposition. 2016. New Orleans, LA.

Brill, A.S., Listman, J.B., and Kapila, V. Using Robotics as the Technological Foundation for the TPACK Framework in K-12 Classrooms. Proceeding of ASEE Annual Conference and Exposition. 2015. Seattle, WA.

Devitt, A. and Milne, C. Design-Based Pedagogy: A Model for Collaborative Lesson Planning Integrating Robotics. Paper presented at National Association of Research in Science Teaching Annual Conference. 2018. Atlanta, GA.

Devitt, A., Milne, C., Ma, J., Iskander, M.G., and Kapila, V. Design-based Pedagogy: Integrating Robotics for Supporting Students with Disabilities in Middle School Science and Math. Paper presented at National Association of Research in Science Teaching Annual Conference. 2019. Baltimore, MD.

Ghosh, S., Krishnan, V.J., Rajguru, S.B., and Kapila, V. Fundamental: Middle School Teacher Professional Development in Creating a NGSS-plus-5E Robotics Curriculum. Proceeding of ASEE Annual Conference and Exposition. 2019. Tampa, FL.

Ghosh, S., Rajguru, S.B., and Kapila, V. Fundamental: Investigating Classroom-related Factors that Influence Student Perception of Utility of LEGO Robots as Educational Tools in Middle Schools. Proceeding of ASEE Annual Conference and Exposition. 2019. Tampa, FL.

Jethwani, M., Zlotowitz, S., and Kapila, V. Advancing Equity in STEM Engagement with Robotics. Paper presented at American Educational Research Association Annual International Conference. 2018. New York, NY.

Krishnan, V.J., Rajguru, S.B., and Kapila, V. Analyzing Successful Teaching Practices in Middle School Science and Math Classrooms when using Robotics (Fundamental). in Proceedings of ASEE Annual Conference and Exposition. 2019. Tampa, Florida: American Society for Engineering Education.

Moorhead, M., Elliott, C.H., Listman, J.B., Milne, C., and Kapila, V. Professional Development through Situated Learning Techniques Adapted with Design-Based Research. Proceedings of ASEE Annual Conference and Exposition. 2016. New Orleans, LA.

Moorhead, M.M., Listman, J.B., and Kapila, V. A Robotics-focused Instructional Framework for Design-based Research in Middle School Classrooms. Proceedings of ASEE Annual Conference and Exposition. 2015. Seattle, WA.

Rahman, S.M.M., Chacko, S.M., and Kapila, V. Building Trust in Robots in Robotics-focused STEM Education under TPACK Framework in Middle Schools. Proceedings of ASEE Annual Conference and Exposition. 2017. Columbus, OH.

Rahman, S.M.M., Chacko, S.M., Rajguru, S.B., and Kapila, V. Fundamental—Determining Prerequisites for Middle School Students to Participate in Robotics-based STEM Lessons: A Computational Thinking Approach. Proceedings of ASEE Annual Conference and Exposition. 2018. Salt Lake City, UT.

Rahman, S.M.M. and Kapila, V. A Systems Approach to Analyzing Design-Based Research in Robotics-Focused Middle School STEM Lessons through Cognitive Apprenticeship. Proceedings of ASEE Annual Conference and Exposition. 2017. Columbus, OH.

Rahman, S.M.M., Krishnan, V.J., and Kapila, V. Exploring the Dynamic Nature of TPACK Framework in Teaching STEM Using Robotics in Middle School Classrooms. Proceedings of ASEE Annual Conference and Exposition. 2017. Columbus, OH.

Rahman, S.M.M., Krishnan, V.J., and Kapila, V. Fundamental: Optimizing a Teacher Professional Development Program for Teaching STEM with Robotics Through Design-Based Research. Proceedings of ASEE Annual Conference and Exposition. 2018. Salt Lake City, UT.

You, H.S., Chacko, S.M., and Kapila, V. Fundamental: Teaching Science with Technology: Scientific and Engineering Practices of Middle School Science Teachers Engaged in a Robot-Integrated Professional Development Program. Proceedings of ASEE Annual Conference and Exposition. 2019. Tampa, FL.

You, H.S., Chacko, S.M., Rajguru, S.B., and Kapila, V. Fundamental: Designing Robotics-based Science Lessons Aligned with the Three Dimensions of NGSS-plus-5E Model: A Content Analysis. Proceedings of ASEE Annual Conference and Exposition. 2019. Tampa, FL.

You, H.S. and Kapila, V. Effectiveness of Professional Development: Integration of Educational Robotics into Science and Math Curricula. Proceedings of ASEE Annual Conference and Exposition. 2017. Columbus, OH.