



*Understanding the Use of Academic
Research in Science Education
Practitioner Journals*

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Abstract:

This bibliometric study investigated the extent to which science education practitioner journals (SEPJs) cite science education research journals and other resources, and in what proportions. The study found that articles in SEPJs rarely cite the leading science education research journals; the average citation rate per article is well below one. This result was not affected by article type and remains stable across 2013 to 2017. While results indicate the article purpose in the SEPJs affected the proportion of science education research journal citations, the proportion remains low with—in the best case—about 8% of all citations in *The Science Teacher* from 2013 to 2017. The presentation discusses the role of SEPJ authors of different roles/backgrounds in science education and their use of references. Implications for pedagogical content knowledge (PCK) development and the translation of research to practice are described.

Keywords: science education research; practitioner journals; bibliometric

Biographical Notes

G. Michael Bowen is an associate professor at Mount Saint Vincent University in Halifax, Nova Scotia. His research interests include developing graphing and data literacy in science teachers, representations of science and scientists in popular culture and news media, and the teaching and professional development of science/STEM teachers.

Joseph Taylor is an assistant professor in the Leadership, Research and Foundations department at the University of Colorado, Colorado Springs. His primary teaching assignments are in statistics and quantitative research methods. In addition, he conducts research that examines STEM teacher preparation, quantitative research methods and education research policy.

Patricia Patrick is an associate professor in the Department of Counseling, Foundations and Leadership at Columbus State University and a Fulbright Scholar (Indonesia). She teaches graduate qualitative methodology courses. Her research focus is in informal science education and learning, especially how people learn science through mentoring.

Ryan Summers is an assistant professor of science education at the University of North Dakota, and teaches secondary science methods courses. He is committed to improving teaching and learning through research.

Marcus Kubsch is a postdoctoral researcher at the Leibniz Institute for Science and Mathematics Education (IPN) in Kiel, Germany. His research focuses on how students develop conceptual understanding about core ideas in science and particularly in physics.

Abdi Warfa is an assistant professor in the Department of Biology Teaching and Learning at the University of Minnesota. In addition to teaching undergraduate biology courses, he conducts

research that examines the nature of student-teacher interactions and classroom discourse in the context of undergraduate STEM courses.

Asli Sezen-Barrie serves as Associate Professor of Curriculum, Assessment and Instruction in the College of Education and Human Development and the Research in STEM Education (RiSE) Center at the University of Maine. She teaches courses on science and engineering teaching methods, qualitative research methods and formative assessments. In addition, she studies sensemaking and assessment of scientific practices in classrooms.

Selcen Guzey is an associate professor of science education holding a joint appointment in the Department of Curriculum and Instruction and the Department of Biological Sciences at Purdue University. Her research agenda aims to improve STEM education, particularly life science and engineering-focused STEM teaching and learning. Specifically, her research on integrated STEM education focuses on design, implementation and evaluation of engineering design-based science teaching and learning strategies.

Cathy Lachapelle is Visiting Associate Professor of Learning Engineering in the Lynch School of Education and Human Development at Boston College, teaching courses in educational design grounded in the learning sciences. She also works as an external evaluation consultant and curriculum developer as founder and partner of STEM Education Insights.