

Call for Abstracts

Teaching and Learning Online: Science for Early Childhood and Elementary Grade Levels

and

Teaching and Learning Online: Science for Secondary Grade Levels

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The expansion of online environments for education poses logistical and pedagogical challenges for early childhood and elementary science teachers and early learners. Research on the efficacy of online learning in EC-12 settings dates back to the early 1990s and continues to increase with the development of accessible EC-12-friendly technologies. Since the 1990s, the adoption of online coursework across both [EC-12](#) and [higher education](#) settings has increased (Darby & Lang, 2019), even during economic downturns, as documented in the report [Grade Increase \(2018\)](#) compiled by the Babson Survey Research Group. Yet, EC-12 teachers report feeling underprepared or overwhelmed by online learning environments. Additionally, early childhood and elementary teachers' lack of confidence and low science teaching self-efficacy is a well documented and persistent challenge (Brigido, Borrachero, Bermejo, & Mellado, 2013; Gunning & Mensah, 2011). The [National Survey of Science and Mathematics \(2018\)](#) reported that only 31 percent of elementary teachers feel "very well prepared" to teach science as compared to 77 percent for reading/language arts (p. 33). As such, there is a need to support science-related preparation/professional development for early childhood and elementary teachers.

How do we, as science teachers, deliver enactive mastery experiences in an online environment that leads to age/grade-level appropriate science content knowledge and literacy, but also collaborative experiences in the inquiry process and the nature of science?

These edited volumes will serve as supplementary texts for university teacher preparation courses and graduate programs focused on science teaching as well as a resource for in-service educators. These books will address why and how teachers use online environments to teach science content and work with students through a research-based foundation for each age group.

IMPORTANT NOTE: The current COVID-19 pandemic has created urgency in the need for high-quality science teaching in online environments. Although *Teaching and Learning Online* is not focused on COVID-19, submissions may be inspired by the current pandemic due to the methods and strategies adopted and the lessons created as a result of COVID-19's impact on education, in general, and science education, specifically.

Proposals must fall into one of the following categories:

- **Chapters** will focus on science teaching and learning in online environments for early childhood OR elementary grade levels. Chapters must integrate research, theory, and practice in a style and tone that assumes the text will be an assigned text for science methods and/or educational technology courses as well as professional development. As such, authors are encouraged to cite relevant research but to avoid being overly "research-y" and with an eye for being accessible to a wide audience and to engage readers in both the practical and theoretical aspects of teaching science online. Additionally, the authors are *strongly* encouraged to include steps to address issues of access to technology and to be mindful of supporting equitable online education.

- **Lesson plans** must be written in 5E format (engage, explore, explain, elaborate/extend, evaluate) and provide readers with classroom-ready online science lessons that address the unique needs of early childhood or elementary students and can be integrated into existing curriculum. Lessons must be aligned to the Next Generation Science Standards (NGSS) and three-dimensional learning as outlined in [A Framework for K-12 Science Education](#).
- **Cases and disputes** are designed to bring various aspects of science teaching and learning online “to life.” They are designed to showcase how the concepts and ideas discussed in the chapters and lesson plans bear on the actual practice of teaching and learning and focus on situations that may arise in the course of teaching science in online environments. The cases and disputes can be used independently or in concert with particular chapters to foster self-reflection for both new and veteran teachers and can be used to guide small-group or class-wide discussion in courses and professional development activities.

Interested authors should submit an abstract of 1,000 to 2,000 words describing their proposed manuscript by October 15th, 2020. To avoid redundancy, the editors will include a general description of COVID-19 and its impact on society and education in the introduction of the book.

Editors will review and invite selected authors to submit full manuscripts for possible inclusion in the final book. All manuscript submissions will go through peer review and must meet publication standards. An invitation to submit a full manuscript is not a guarantee of acceptance.

Submit abstracts via this [online submission link](#)

E-mail inquiries to Franklin S. Allaire and Jennifer E. Killham at
teachingandlearningonlinebook@gmail.com

Timeline:

- Abstracts due: October 15th
- Notification to authors: November 15th
- Chapters DUE to editors: February 15th - As a condition for contributing to *Teaching and Learning Online*, contributors agree to serve as a reviewer for at least one of the book’s other chapters
- Reviewer comments DUE by March 30th
- Edits completed by Summer 2021

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