

## **Editorial: Looking Back and Moving Forward: Technology and Teacher Education After COVID-19**

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With no doubt, the COVID-19 pandemic has generated the largest disruption of education structures. The closure and subsequent move to emergency remote instruction (Hodges et al., 2020) among schools and institutions of higher education has prompted educators to pave the way for innovations that utilize technology in teaching and learning. As we look into the future with renewed hope, we must take stock of our successes and failures, leverage innovative practices generated during the pandemic, and reimagine educational processes for both teachers and students. Articles in this issue present innovations at the intersection of technology and teacher education that help us reimagine the ways we prepare preservice and in-service teachers to teach with technology. They also highlight important equity considerations, which were widely exacerbated during the pandemic.

In the CITE-English Language Arts Education section, the article “[Don’t Talk About It, Be About It: Centering Blackness in a Grammar and Language English Education Course](#)” by Kisha Porcher squarely addresses inequities observed during the pandemic especially for Black students. In an attempt to reimagine the preparation of English language teachers, the author redesigned a course focusing on English Language: Grammar and Usage to center on Blackness, avoiding linguistic violence evident in English education that centers on white Mainstream English.

Similarly, the CITE-English Language Arts Education article titled [“The Opportunities and Constraints of a Virtual Field Experience During a Global Pandemic for ELA Teacher Candidates’ Learning About Culturally Sustaining Pedagogy”](#) by Melissa Schieble and Jody Polleck identifies challenges associated with preservice teacher opportunities to experience and apply culturally sustaining English language arts practices. The authors reimagined a virtual field experience within a methods course for ELA teachers, which provided participants opportunities to learn through representation, approximation of practice, and decomposition of culturally sustaining pedagogies. These types of experiences provide a glimpse of opportunity and innovation that could be sustained beyond the pandemic.

Continuing on the issue of equity, the CITE-Social Studies Education section article, [“Applying a Critical Lens to Teachers’ Use of Social Media for Civic Education”](#) by Amy Chapman and Christine Greenhow, examines the experiences of high school social studies teachers who use Twitter to teach about civics. The study seeks to alter traditional conceptions of citizenship and promote new forms of civic participation that disrupt systems of oppression through the use of social media. Although the authors found that teachers’ Twitter practices did not always align with their intentions, the study highlighted the importance of “teaching both with and about social media” in efforts to teach civics in ways that disrupt hegemonic structures.

The articles in CITE-Mathematics Education and CITE-General sections build on a line of work focusing on innovations in teacher education that utilize technology. A key component of these articles is their focus on specific theoretical frameworks that could guide teacher learning. Research in the field of educational technology has frequently been criticized for a lack of theoretical grounding (Mishra & Koehler, 2006). [“Theoretically Framing the Pedagogy of Learning to Teach Mathematics With Technology”](#) By Allison McCulloch, Keith Leatham, Nina Bailey, Charity Cayton, Kristen Fye, and Jennifer Lovett, specifically examines frameworks that influence the work of mathematics teacher educators, specifically in the way they design instruction. The authors identified 17 frameworks focusing on student learning with technology, design and evaluation of technology tools and tasks, and the manner in which teachers use and learn to use technology. Importantly, the authors identify missed opportunities among the frameworks.

Also in the CITE-Mathematics Education section, [“Comparison of Peer-to-Peer and Virtual Simulation Rehearsals in Eliciting Student Thinking Through Number Talks”](#) by Carrie Lee, Tammy Lee, Daniel Dickerson, Ricky Castles, and Paul Vos examines the use of rehearsals that help engage preservice teachers in deliberate practice within mathematics education. The authors compare the use of rehearsals within virtual simulations and traditional approaches in the manner in which participants elicited student thinking in mathematics. Results indicated that virtual simulations, which are gaining a lot of ground in teacher preparation, could provide comparable contexts for rehearsals but point to differential patterns of pedagogical moves which need further examination.

The CITE-General section article, [“Use of an Online Peer Review Tool to Support Feedback and Collaborative Skills in Preservice Teachers”](#) by Sarah Douglas, Jonte Taylor, Douglas Dexter and David McNaughton, utilizes another evidence-based practice, namely feedback in the form of self-review or peer-reviews to support preservice teacher learning. The authors compared the effect of online peer review compared to self-review in the quality of graphic organizers developed by participants to support students with disabilities in a content area. Results demonstrated the promise of online peer reviews in supporting the development of higher quality products compared to self-review. The authors identify implications for teacher education that leverage technology to support peer reviews.

The CITE-Science Education section includes a special issue with a series of three articles focusing on STEM professional development (e.g., engineering challenges, programming, and robotics) as well as STEM interventions used in teacher education methods courses:

- [STEM Literacy in the Classroom to Enable Societal Change](#)
- [Coding Connections at the Interface of Algebra and Physical World Concepts](#)
- [Elementary Preservice Teacher Coursework Design for Developing Science and Mathematics Computational Thinking Practices](#)

These interventions were used as a means to building teachers’ knowledge and use of computational tools. The activities were implemented with different cohorts of preservice and in-service teachers. Results from this work have implications for the design of curricula and activities that strengthen teacher knowledge and use of disciplinary computational thinking.

As we end this academic year and look ahead, we need to continue examining how teacher preparation could be reimagined in ways that elevate the use of technology. As we move forward, however, it is important not to reinvent the wheel. Although much innovation occurred during the COVID-10 pandemic, plenty of literature points to what works in digital learning environments, including the role of technological pedagogical content knowledge (Mishra & Koehler, 2006), the role of professional development in ubiquitous learning environments (Mouza et al., 2008; Reichert & Mouza, 2018), and the preparation of teachers for online and blended learning (e.g., Archambault & Kennedy, 2014; Dawson & Dana, 2014), to name a few. New research should *look back* and leverage existing understandings to *move our field forward*. We welcome reader commentaries on all published articles.

The *CITE Journal* editors wish readers a rejuvenating summer.

## References

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