

Editorial: A Report on the 2019 National Technology Leadership Summit

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with Glen Bull, Shawna Bu Shell, Jake Cohen, Michael Grant, Randy Hansen,
Elizabeth Langran, and Guy Trainin

On September 18-19, 2019, national teacher education leaders, editors of educational technology journals, and representatives from the nonprofit sector and industry gathered in Washington, DC, for the annual National Technology Leadership Summit (NTLS). The summit was hosted again by the American Association of Colleges for Teacher Education (AACTE) due to AACTE's connections with all of the participating teacher educator associations. NTLS was generously supported by the Society for Information Technology and Teacher Education (SITE), AACTE, and the Chan Zuckerberg initiative.

NTLS features two staple events every year: (a) a panel featuring presidents of teacher educator associations discussing contemporary and pressing issues at the intersection of technology and teacher education, and (b) a panel featuring editors of educational technology journals. This year's editors' panel continued the conversation on conceptual dilution – the ways in which over time an original concept may begin to be used in ways different from its original concept (some more productive and some less productive; see Bull et al., 2019). Additionally, editors discussed topics currently overrepresented in educational technology journals and topics that would be of particular interest given the rapid changes of technology in our society. The President's panel focused on answering questions from the audience regarding the priorities and functions of the teacher educator associations in relation to technology.

As in previous years, the 2019 NTLS was organized around three strands: (a) Diversity in Educational Technology; (b) Design, Creativity and Problem-Solving; and (c) Artificial Intelligence (AI) in Teacher Education.

The Diversity in Educational Technology strand was led by Shawna Bu Shell (Manhattan College) and Jake Cohen (Georgia State University) with assistance from Guy Trainin (University of Nebraska-Lincoln). The Diversity in Educational Technology Leadership strand arose from (a) NTLs's belief in the transformational potential of groups of leaders, particularly when those groups include individuals with diverse backgrounds and perspectives; and (b) our recognition that, like many fields, educational technology leadership does not reflect the diversity of our organizations' constituent members or the students who we aim to serve.

During this year's summit, leaders analyzed the process by which people become leaders in the field of educational technology and identified points within that process at which NTLs members could effect change to increase diversity. In particular, the strand focused on recruitment and retention of diverse graduate students and faculty in educational technology, as well as identifying opportunities for mentorship into leadership opportunities.

One of the desired outcomes of this strand is the creation of the NTLs Emerging Leaders Program. The Emerging Leaders will be doctoral students who have shown potential to become leaders in their chosen education-related field. They will be invited to NTLs as full participants, working in the various strands, attending the networking functions, and receiving one-on-one mentoring from the editors, presidents, and other summit leaders. Another desired outcome is the development of a diversity and inclusion statement to be part of NTLs's stated goals. Finally, the constituent organizations of NTLs have committed to continuing conversations related to diversity in their own organizations.

The Design, Creativity and Problem-Solving strand was led by Michael Grant (University of South Carolina) and Glen Bull (University of Virginia). Participants in the strand explored design, creativity and problem-solving through sound and music. Each participant began by constructing a Make to Learn Electric Monochord Kit using laser cut wood components (see Figure 1). The electric monochord is a one-string instrument that employs a solenoid as a transducer. Its operation served as an introduction to electrical and acoustic waves.



Figure 1. Fabricated components of monochord kit (left) and assembled monochord (right).

Participants then collaborated on a problem-solving activity in which they identified the correct placement of notes on the musical scale, marking the location for each chromatic note on the instrument. A music analysis and synthesis tool, SoundScope (see Figure 2), was used to identify the frequency of each note.

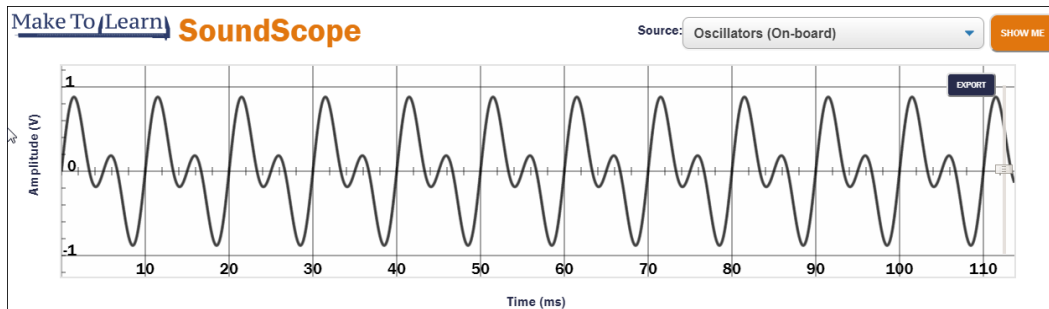


Figure 2. SoundScope: A music analysis and synthesis tool.

Rebecca Feynberg, a New York University faculty member in music technology, then introduced the littleBits (<https://littlebits.com/>) music synthesis kit (see Figure 3). Participants explored audio synthesis technologies, and each team composed and played a tune on the music synthesizer.



Figure 3. Rebecca Feynberg introducing the littleBits music synthesis kit.

Finally, participants in the strand discussed ways in which discipline-specific (e.g., science) and interdisciplinary (e.g., science, math, and music) creative and problem-solving activities can be supported using tools of this kind. The strand culminated in a concert that combined music synthesizers and electric monochords fabricated by participants. For those who would like to explore these activities, fabrication files and directions for the Make to Learn Electric Monochord Kit are available at <https://www.maketolearn.org/sound>. The SoundScope music analysis and synthesis tool is available at <https://maketolearn.org/tools/soundscope>

The AI in Teacher Education strand was led by Randy Hansen (University of Maryland Global Campus and ISTE Board of Directors) and Elizabeth Langran (Marymount University and SITE President-elect). This strand was organized around three interconnected themes: (a) identify current AI capabilities and their impact on teaching and learning, (b) identify potential research areas focusing on the role of AI in teacher education, and (c) explore pathways for incorporating AI in teacher education. There was broad agreement that AI's influence and integration into all aspects of life will increase, but defining AI and its relevant to education generated many questions.

In order for the group to have an understanding of the functionality of AI, the Thursday-morning session featured hands-on work with coding Alexa (Amazon's virtual assistant) and creating chatbots. These activities launched the group into in-depth discussions around four issues: (a) what would be relevant for teachers to know about AI, (b) how teacher educators might integrate AI into their curricula, (c) examples of AI applications in K-12, and (d) ethical and privacy concerns around AI in teacher education. On Friday, participants broke into smaller groups, one to design a research study of attitudes and anxiety around AI, and another to work on a paper with a call for guiding principles for AI in education, with a spotlight on ethical considerations and privacy concerns.

In addition, this year NTLs featured updates from Bart Epstein, Emily Barton and Dan Brown related to the work of the Jefferson Education Exchange and Katrina Stevens, director of learning sciences at the Chan Zuckerberg initiative. Our meeting concluded with demonstrations from Adam Wilson, founder and chief creative officer of Sphero and our long-time technology pioneer Roger Wagner.

Description of Current Issue

This issue includes an exciting collection of articles addressing timely issues. CITE-English Education launches the first issue in response to a special call focusing on Technology and English Language Arts (ELA) Teacher Education in Troubled Times. The purpose of this special issue is to examine innovative uses of technology in ELA teacher preparation that respond to the challenges of today's civic and political context.

["Educate, Empower, Advocate: Amplifying Marginalized Voices in a Digital Society"](#) by W. Ian O'Byrne, investigated the ways in which activists used technology to amplify marginalized voices and enact social change, as well as the manner in which acts of digital activism can be leveraged.

["I Didn't Want to Make Them Feel Wrong in Any Way': Preservice Teachers Craft Digital Feedback on Sociopolitical Perspectives in Student Texts"](#) by James S. Chisholm, Andrea R. Olinger, and Alison Heron-Hruby, investigated the role of "educational niceness" and "neutrality" in preservice English teacher feedback on sociopolitical issues in student writing. The work is conducted in the context of field experiences for several ELA methods courses at two universities, one urban and one rural.

[“A Long Arc Bending Toward Equity: Tracing Almost 20 Years of ELA Teaching With Technology”](#) by Katie Rybakova and colleagues, reports on a systematic literature review on the ways in which articles published in CITE Journal have taken up (or not) Pope and Golub’s (2000) seminal ideas originally published in CITE Journal around ELA teaching with technology. Further, the review examines how these articles addressed issues of access and equity to digital and online literacies. The work has implications for educational researchers interested in ELA teaching with technology that promotes socially just classrooms.

The CITE-Math Education article, [“Just What Online Resources Are Elementary Mathematics Teachers Using?”](#) by Emily J. Shapiro, Amanda G. Sawyer, Lara K. Dick, and Tabitha Wismer, used survey data from 601 teachers to report on teacher selection of elementary math tasks from online resources. Findings indicate that Teachers Pay Teachers was the most commonly used website and that materials that require pay may deter novice teachers from using them.

CITE-Science Education has an exciting collection of articles focusing on emerging technologies such as robotics and virtual reality. The article, [“Using Virtual Reality to Augment Museum-Based Field Trips in a Preservice Elementary Science Methods Course”](#) by Jason R. Harron, Anthony J. Petrosino, and Sarah Jenevein, examined the role of virtual reality in conjunction with face-to-face field trips in a local natural history museum. The study examined the conditions under which VR supported preservice teacher learning as well as the types of experiences they thought VR could support in their future science classrooms. The second article, [“Robotics Integration for Learning With Technology”](#) by Jiangmei Yuan, ChanMin Kim, Rogers Hill, and Dongho Kim, examined how preservice elementary teachers integrated robotics into STEM lesson designs and their rationale for their designed lessons.

The CITE-Current Practice article, [“A Professional Development Process Model for Online and Blended Learning: Introducing Digital Capital”](#) by Brent Philipsen, presents a five-step theoretical model for designing teacher professional development experiences focusing on the delivery of online or blended learning courses. Further, the article discusses unique strategies for professional development that target online and blended learning.

The CITE-General section features two articles focusing on badges and computational thinking. [“Effectiveness of Undergraduate Instructional Design Assistants in Scaling a Teacher Education Open Badge System”](#) by Daniel Randall, Tadd Farmer, and Richard West, examined how undergraduate instructional design assistants provided support with creating open badges, thus helping scale the effort without compromising the quality of the badge rubrics.

[“Preparing Elementary School Teachers to Teach Computing, Coding, and Computational Thinking”](#) by Stacie Mason and Peter Rich, presents a synthesized literature review on preservice and in-service programs that improved elementary teachers’ attitudes, self-efficacy, or knowledge to teach computing, coding, or computational thinking. Findings indicated that most studies were fairly short term and that research is needed on long-term outcomes, pedagogical knowledge and beliefs, and relationships among teacher training and outcomes.

Finally CITE-Social Studies Education features three articles. [“Barriers to the Effective Use of Technology Integration in Social Studies Education”](#) by Bulent Tarman, Emin Kilinc, and Hasan Aydin, examined barriers to technology integration in teaching and learning based on input from social studies teachers in Turkey. Findings revealed that the most

highly identified barriers were external, such as a lack of technology, restricted Internet access, and a lack of administrative and technical support.

[“The Nexus of Critical Citizenship and Social Media”](#) by Scott Durham, examined the role of social media as a location of critical analysis within the context of citizenship. The manuscript advances a rationale for and process by which social media become a site for empowering critical citizenship.

[“The Use and Utility of Video Representations in Early Social Studies Field Experiences”](#) by Alexander Cuenca and Jessica Zaker, examined the use of video representations during an early field experience to advance pre-service social studies teachers’ observation skills of classroom practice.

I hope *CITE Journal* readers enjoy these articles over the winter break. Please consider submitting a commentary!

References

Bull, G., Hodges, C., Mouza, C., Kinshuk, Grant, M., Archambault, L., Borup, J., Ferdig, R.E., & Schmidt-Crawford, D. A. (2019). Conceptual dilution. *Contemporary Issues in Technology and Teacher Education*, 19(2), 117-128. Retrieved from <https://citejournal.s3.amazonaws.com/wp-content/uploads/v19i2editorial1.pdf>

Pope, C., & Golub, J. (2000). Preparing tomorrow’s English language arts teachers today: Principles and practices for infusing technology. *Contemporary Issues in Technology and Teacher Education*, 1(1) Retrieved from <https://www.citejournal.org/volume-1/issue-1-00/english-language-arts/preparing-tomorrows-english-language-artsteachers-today-principles-and-practices-for-infusingtechnology>

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