Mouza, C. (2020). Editorial: Developing critical media literacy skills in the digital age. *Contemporary Issues in Technology and Teacher Education, 20*(1), 1-3.

Editorial: Developing Critical Media Literacy Skills in the Digital Age

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With no doubt, our lives are dominated by an abundance of information. This information is easily accessible in the palms of our hands through the proliferation of mobile technologies such as phones and tablets. Importantly, advances in mobile technologies enable users to both access and produce information in a seamless manner. The ability for virtually anyone to capture, produce, and instantaneously share information creates enormous potential for advancing human knowledge.

At the same time, it creates a number of challenges, as misinformation, dangerous information, and fake news are also in abundance online. These challenges raise a number of questions about our ability to process and evaluate information critically. As Athreya and Mouza (2016) noted, there is a need for this generation of students to "learn how to organize and process the vast amount of available information, think critically, and turn information into practical knowledge easily accessible for decision-making" (p. 2).

An important set of articles in this issue (CITE-English Education and CITE-Social Studies Education) squarely address this need by focusing on experiences that prepare preservice and in-service teachers to develop critical media literacy skills that help meet the demands and opportunities of the Information Age. Another set of articles, focuses on the skills required by educators to identify and utilize emerging technologies and frameworks to support teacher learning and ultimately student outcomes. These technologies include social media, badges, virtual manipulatives, and computational thinking tools.

The English education article, "Preparing English Teachers With Critical Media Literacy for the Digital Age," by Jeff Share and Tatevik Mamikonyan addresses the need to help both teachers and students develop critical media literacy skills. It presents a course on critical media literacy within a teacher education program and the ways in which participants applied their learning into practice with K-12 students. Results from this work illustrate the role of English teachers in helping students learn how to utilize and analyze media critically.

The English education article, "Fostering Preservice and In-Service ELA Teachers' Digital Practices for Addressing Climate Change," by Richard Beach, George Boggs, Jill Casket, James Damico, Alexandra Panos, Renee Spellman and Nance Wilson addresses a timely issue of global importance, namely climate change.

Specifically, through three distinct studies Beach and colleagues examined how preservice teachers studied visual representations of climate change and engaged students in critically analyzing online information and conflicting claims about climate change. These skills are of fundamental importance in the 21st century, given the number of hours students spend consuming digital media.

The Social Studies article, "Integrating Media Literacy in Social Studies Teacher Education," by Meghan Manfra and Casey Holmes expands the idea of critical media literacy in an era of fake news. Specifically, building on the Teacher Education Technology Competencies (TETCs), the authors present an action plan that situates media literacy competencies in the context of social studies teacher education. These skills are essential for helping teachers foster civic reasoning among K-12 students, navigate political bias, and participate in civic oriented activities online. Together with CITE-English Education, these manuscripts chart important pathways for helping teachers navigate online sources and adopting media literacy practices in their teaching.

The General section article, "Should We Ask Students to Tweet? Perceptions, Patterns, and Problems of Assigned Social Media Participation," by Daniel Krutka and Nicole Damico also addresses the increasing use of social media in society. The authors introduced assignments that fostered professional learning networks using Twitter. Despite positive views about relational and relevant aspects of Twitter use, participating pre- and in-service teachers used Twitter only for course related purposes and did not persist in their use after the end of the course. The authors argue for the need to focus on social media integration that highlights "relational and relevant engagements and content" rather than unknown future uses.

Also in the General section, "The PICRAT Model for Technology Integration in Teacher Preparation" by Royce Kimmons, Charles Graham, and Richard West reviews existing models of technology integration and advance a new framework called PICRAT. PIC (passive, interactive, creative) is related to student-technology interactions, while RAT (replacement, amplification, transformation) is related to the impact of technology on teacher practices. The authors engage in a theoretical evaluation of PICRAT using criteria of good theory but encourage empirical investigations of PICRAT to identify how it can guide teacher practice, reflection, and pedagogical change.

The Current Practice article, "Microcredentialing of English Learner Teaching Skills: An Exploratory Study of Digital Badges as an Assessment Tool," by Kerry Purmensky, Ying Xiong, Joyce Nutta, Florin Mihai, and Leslie Mendez focuses on an the emerging use of badges as a means of supporting teacher candidates' instructional skill development. The authors examined the participation and success rate in a digital badge designed to support specific English learner teaching skills. Despite successes in acquiring and demonstrating the targeted teaching skills, participation rate in the badging was lower than expected. The authors discuss implications and challenges around the use of badges, including the need for transparency around the anticipated benefits and return on investment. The authors encourage more empirical research on the impact of badges on learning and the ways in which such learning translates into classroom practice.

The Mathematics Education section article, "Why and How Secondary Mathematics Teachers Implement Virtual Manipulatives," by Lindsay Reiten focuses on a different form of promising technology: virtual manipulatives.

Specifically, the author examined why and how secondary mathematics teachers utilized virtual manipulative tasks both during and after their participation in professional development. Results from the study indicated that participants noted instructional benefits particularly around the role of virtual manipulatives in supporting students' developing understanding and differentiation. Contextual factors such as student needs, existing curricula, and time influenced teacher decision making around the use of virtual manipulatives.

Finally, the Science Education section article, "Preservice Science Teachers' Beliefs about Computational Thinking Following a Curricular Module Within an Elementary Science Methods Course," by J. Randy McGinnis, Emily Hestness, Kelly Mills, Diane Ketelhut, Lautaro Cabrera, and Hannoori Jeong focuses on a different kind of critical thinking skill for preservice teachers, namely computational thinking. The authors presented a curricular module on computational thinking integrated with elementary science methods and examined participants' beliefs about such integration. Through the analysis of field notes, drawings and other class artifacts, the authors found that preservice teachers supported the integration of computational thinking in science teaching and its role in modernizing science and supporting good science teaching practice. Nonetheless, they anticipated a number of challenges in their efforts to embed computational thinking into their science teaching. The authors discuss implications related to the implementation of computational thinking in teacher education.

The publication of the Science Education section article is a bittersweet experience as J. Randy McGinnis, a distinguished scholar and colleague, passed away in December 2019. Dr. McGinnis was passionate about preservice and in-service science teacher preparation. He was a great mentor to many junior colleagues and graduate students. He will be missed!

We hope readers enjoy this set of articles. *CITE Journal* editors look forward to seeing you at the SITE Conference in New Orleans.

References

Athreya, B., & Mouza, C. (2016). *Thinking skills for the digital generation: The development of thinking and learning in the age of information*. New York, NY: Springer.