

Chapter 103

Looking to the Future in Transforming Inservice Teachers' TPACK Through Online Continued Learning

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ABSTRACT

The design and empirical support for the online TPACK learning trajectory emerged through a multi-year research process that provided a thorough, in-depth description of how the tools (community of learners and reflection) and processes (shared/individual knowledge development and inquiry) support the scaffolding of TPACK content as an integration of subject matter content, pedagogy, and technologies, thus modeling the knowledge teachers need for teaching with technology. The learning trajectory, framed with a social metacognitive constructivist lens, engaged inservice teachers in knowledge-building communities using inquiry-based, problem-based learning, guiding them in reframing their knowledge for designing student-directed, problem-based learning with the integration of technologies. Limitations and future research extend the understanding of TPACK through online teacher education continued learning in graduate programs and other professional development programs designed to support teachers in rethinking and reframing their knowledge for teaching with technologies. Multiple factors frame the thinking about future designs for these online programs aimed at transforming inservice teachers' TPACK. Future challenges include whether and how online programs might be designed for developing preservice teachers' TPACK.

The most effective, successful professionals are constantly learning, they take the time to apply what they have learned, and they continually work to improve themselves.

~ Joel Gardner, n.d.

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INTRODUCTION

What does the future hold for online education as more and more digital technologies (hereafter referred to as technologies) are infused in K-12 educational programs? At the turn of the century, schools were engaged in rewiring projects that supported an increasing acceptance of the Internet. By 2005, Smartboards replaced chalkboards and overhead projectors were used for displaying computer output. In 2010, mobile technologies, such as iPads, were identified as having potential as learning tools – tools that students would use as much as or even in place of their textbooks. By 2012, some schools distributed iPads rather than textbooks to each student for use throughout the school year, both at school and home. In 2016, while iPads continue to be used by students, more and different mobile technologies have emerged as preferred learning tools, including laptops, tablets, and smartphones. What will happen in the next four years? Will Google Glass with its smartphone-like hands-free display format find adaptability as a learning tool? Certainly the cloud with its anywhere access will continue to play an important role for information storage and easy access for students to work at school and home as well as for their parents and teachers to communicate.

While the technologies that students depend on will continue to evolve, the future of educational technologies is actually more about the teaching and learning in which the students are and will be engaged. As urged in the Partnership for 21st Century Learning (2015) and the Thoughtful Learning Organization (2016), basic 21st century literacy now highlights the 4C's as learning and innovation skills for successful citizenship in a global society, acknowledging the importance of critical thinking, creative thinking, communication and collaboration. Will this direction be revised by 2020 to include more and perhaps different high-level expectations?

Some people think that as technology evolves and expands, teaching will increasingly be done by and with the technology rather than teachers. Actually, teachers are and will continue to be crucial players in the design and implementation of the educational experiences. Their knowledge and skills will be influential in designing appropriate instructional strategies and learning environments for facilitating students in learning and applying skills such as the 4C's as they develop subject matter competence. Such changes will be ones with which teachers are likely unfamiliar, have not experienced in their own learning, or have received little, if any, guidance in thinking about teaching and learning. In essence, these redesign challenges will continue to extend the need for teachers to think outside their traditional views of how their subject matter content is learned, communicated, and taught. And as noted by Joel Gardner (<https://elearningindustry.com/inspirational-elearning-quotes-for-elearning-professionals>), as professionals they will need to continue improving their knowledge for teaching with technologies and this challenge brings the need for continuing professional development of some nature.

Teacher professional development will be needed for guiding and supporting teachers in developing and enhancing their Technological Pedagogical Content Knowledge (TPACK) and the thinking for redesigning learning for students throughout the future of the 21st century. Does this suggest that teachers' TPACK is an ever-expanding knowledge? Probably, and online education must continue to support teachers in this adventure. Teacher educators must continue revising and redesigning online instruction for inservice teachers to provide access to enhanced understandings about how the new and emerging technologies influence educational avenues for shifting and supporting learning in the 21st century. This chapter focuses on the future of online teacher continuing education for enhancing their TPACK, the knowledge they will increasingly rely on when guiding learning of 21st century literacy recognizing the importance of inquiry tasks involving critical thinking, creative thinking, communication and collaboration.

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