Guest Editors' Introduction

Online, Hybrid, and Blended Coursework and the Practice of Technology-Integrated Teaching and Learning within Teacher Education

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This volume of *Issues in Teacher Education* focuses on the relationship between technology and teacher education. As technology in our society becomes more ubiquitous, colleges and schools of education draw students to their programs who are more proficient in using technology to manage their personal information than ever before. Technology is part of teacher education whether the instructor uses it or not. Students text message, check the Internet, participate in online games, and even take notes with regularity using technology. Response devices, RSS feeds, wikis, blogs, podcasts, serious games, and other innovations are part of many teacher education courses. Increasingly, teacher education courses are offered in a variety of formats, including online, hybrid, and blended. At the time of this writing, several large teacher preparation programs such as those at CalState TEACH and Western Governors University are fully online programs of study.

There is no doubt that the profile of the typical college of education student has changed. By 2007, technology ownership had increased to the point that 98.4 percent of students owned computers and the less

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than 2% who did not still used computers for course assignments and research. Over half of those surveyed stated that they used four or five electronic devices including computers, MP3 players, electronic games, etc. (Salaway & Caruso, 2007).

The EDUCAUSE Center for Applied Research (ECAR) study demonstrated that undergraduate students view instructional technology as a support for learning in the following ways:

> • Technology facilitates organization and control in the learning environment.
>
> • Technology facilitates communication with faculty and classmates.
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> • Technology can make content more accessible, including class materials and Internet resources.
>
> • Technology in courses is valuable when directly linked to applications useful to future employment.
>
> • Technology is an enabler of student? learning when professors use it effectively. (Salaway & Caruso, 2007, p. 16)

In our research (Swenson, 2003, 2006; Redmond, 2002)) we found that some confusion exists in the literature with regard to the definition of the terms "online," "hybrid," and "blended" when used to describe online learning. We have chosen to adopt the following definitions for this issue:

> Online: Synchronous or asynchronous online learning with 20% or less face-to-face time.
>
> Blended: Asynchronous *or* synchronous online learning combined with more than 20% face-to-face time.
>
> Hybrid: Courses that combine two or more synchronous or asynchronous online learning tools combined with face-to-face time.

The terms online and hybrid may be combined if, for example, a hybrid course is taught less than 20% online or as an *online hybrid* course. The dramatic increase of online, hybrid, blended, and substantially technology-infused teaching within K-12 schools and teacher education programs suggested that the theme of this issue was a timely and important topic for the readers of *Issues in Teacher Education*. We selected articles for this issue to support institutions of higher education and school districts in their efforts to to develop coursework and professional development that meets the needs of their audiences.

Marcia Sewall of the University of California, San Diego, describes a technology-enhanced process in which student teachers offered deeper

reflection and insights regarding their teaching. Student teachers and their supervisors audiotaped debriefing sessions during two different means of reviewing a lesson: one after the standard supervisor in-class observation; the other after viewing a videotaped lesson. Sewall's analysis of the two debriefings revealed differences in both the quality of reflection and in who did the reflecting. Her article, "Transforming Supervision: Using Video Elicitation to Support Preservice Teacher-Directed Reflective Conversations," demonstrates that adding video technology to the supervision process influenced both novice teachers and their coaches to improve practices.

In their article "eSupervision: A Technology Framework for the 21st Century Field Experience in Teacher Education," Christianna Alger and Theodore Kopcha of San Diego State University describe the influence of a web-based means of delivering instruction, online discussions, assignments, materials, and templates. In addition, they elaborate on the roles of the student teaching triad and the field experience for all participants. Communication, including sharing and problem solving, between and among participants, was improved in the eSupervision environment and there was an added benefit of the development of a sense of community online as well. Each member of the triad was provided additional support within their role and in their practice.

Teaching and learning within K-12 schools is changing. Not only do students own or have access to multiple electronic devices, but many are avid game players. Nancy B. Sardone of Georgian Court University and Roberta Devlin-Scherer from Seton Hall University, together with their secondary education students, explore the use of digital learning games in their article "Teacher Candidates' Views of Digital Games as Learning Devices." Through evaluating, teaching, and reflecting on the games and their use as teaching tools, these teacher candidates experienced a shift from teacher-centered teaching and learning to that of being a facilitator.

As online and hybrid courses are increasingly used, Ashley A. Skylar from California State University, Northridge, looked at one possible aspect of online teaching—the lecture. Her article, "Comparison of Asynchronous Text-Based Lectures and Synchronous Interactive Web Conferencing Lectures," concludes that students tend to prefer the synchronous web conferencing format, although both are effective in delivering content as evidenced by pretests, posttests, and survey data. As the technologies increased engagement, students seemed more satisfied with online activities.

Rachel M. B. Collopy and Jackie Marshall Arnold of the University of Dayton suggest that the blended format was a means to effectively

expand opportunities for reflection and synthesis in "To Blend or Not to Blend: Online and Blended Learning Environments in Undergraduate Teacher Education." They suggest face-to-face environments enhance team building while online settings offer effective communication and processing. Utilizing both, according to Collopy and Arnold, is optimal for teacher education programs and their students.

Taking on a very important question in "Online Versus In-Class Courses: An Examination of Differences in Learning Outcomes," Lisa Kirtman of California State University, Fullerton, found few differences in the learning outcomes for graduate students and participants saw value in both delivery methods. However, moving from face-to-face to online instruction required adjustment for both faculty and students.

Within the articles in this issue there is a relationship between student engagement and student satisfaction. Rigorous, high quality, engaging teaching and learning is not the province of any single modality or model of teaching. The studies in this issue demonstrated that effective coursework for today's student was enhanced by technologies. They also observed that not only were course outcomes met through online, hybrid, and blended experiences, but often the student experience was enhanced through the technology tools and their performance exceeded expectations. These studies may have been successful because technology use was embedded within the following components:

- Specific expectations regarding engagement of faculty members and students in online discussions;
- Clear, measurable objectives;
- Pedagogy that matched the objectives;
- Emphasis on active learning;
- Embedded assessments;
- Clarity on how assessments were applied and specific rubrics and other measures available to the candidates; and
- Frequent specific feedback.

As the articles in this issue underscore, technology can be a highly effective tool but it is not the complete solution.

Another common thread among these studies was instructor comfort and facility with the technology. With the release of the revised *National Educational Technology Standards for Teachers* in 2008, the International Society for Technology in Education (ISTE) significantly raised the bar for K-12 teacher use of technology in the classroom. These new

standards presented a challenge to higher education to prepare "effective teachers [who] model and apply the [following standards] as they design, implement and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues and community" (ISTE, 2008, ¶1):

- Facilitate and inspire student learning and creativity;
- Design and develop digital-age learning experiences and assessments;
- Model digital age work and learning;
- Promote and model digital citizenship and responsibility; and
- Engage in professional growth and leadership. (ISTE, 2008)

In 2008, the Innovation and Technology Committee of the American Association of Colleges of Teacher Education (AACTE) published the *Handbook of Technological Pedagogical Content Knowledge (TPCK)* and called for integration of technology, pedagogy and content knowledge that went "beyond all three components…to interaction" (Koehler & Mishra, 2008, p. 17). The handbook defined technology as tools for acquisition of knowledge that allowed teachers and learners to seek answers to questions, solve problems, and communicate ideas. In her chapter on developing TPCK in preservice teachers, Neiss (2008) explained that the TPCK framework was based on Shulman's (1986) premise that teachers needed to know more than pedagogy or content knowledge, they needed to know how to integrate the two effectively—resulting in pedagogical content knowledge. The AACTE committee contended that, in a world that is dynamically changing through global technologies, educators must embrace technology as an essential tool for exploring content knowledge through effective pedagogy and practice or TPCK (later renamed TPACK).

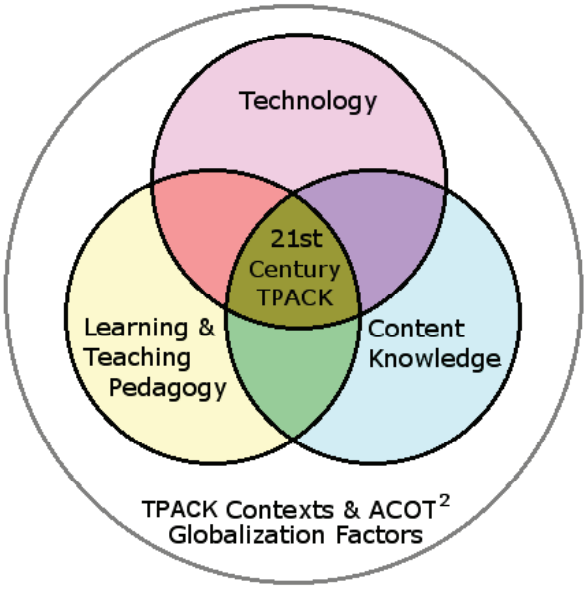
In harmony with TPACK, *The Apple Classroom of Tomorrow—Today: Learning in the 21st Century* (ACOT^2) (2008) report advocated that the intersection of technology, learning, and skills for success in a globalized society were key to preparing 21st century students for their future. It set down principles for redesigning the 21st century high school to include relevant applied curriculum, informative assessments, social and emotional connection, and a culture of creativity and innovation (p. 11) situated in a context where technology access is omnipresent. These principles concur with the AACTE committee's position that, i.e., "pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology…help[s] redress some of the problems students face"

(Koehler & Mishra, 2008, p. 18). Figure 1 illustrates the intersection of Koehler and Mishra's TPACK and the ACOT^2 21st century learning model and graphically represents the complexity of factors to be considered when analyzing the technological context in which teachers and teacher educators must develop greater expertise in designing instruction.

The studies in this issue are a foray into this complex learning system represented in Figure 1. From the point of view of teacher education and program development, this model has implications for the design of learning experiences for teacher candidates and professional development. To fully integrate TPACK into the learning context and prepare teachers to meet the needs of the future of education, IHE instructors must consider how technology, learning, and teaching pedagogy and content knowledge should be integrated to create optimal learning experiences.

For some, there is concern that the move to technology-based courses and projects will result in the technology itself taking on too great a role in the student's work and, as a result, a less rigorous subject matter content focus (Partnership for 21st Century Skills, 2004) . A response to this concern was offered by the Partnership for 21st Century Skills

Figure 1:
Intersection of TPACK and the ACOT2 Learning Model in which Globalization Becomes Part of the Larger Context for TPACK



Source: Adapted from http://www.tpack.org and the ACOT^2 report, p. 9.

which redefined rigor in the technology enhanced classroom "to encompass not just mastery of core academic subjects, but also mastery of 21st century skills and content" and went on to state that "graduates need to be critical thinkers, problem solvers, and effective communicators who are proficient in both core subjects and new, 21st century content and skills" (¶ 5).

While this special issue of *Issues in Teacher Education* attempts to shed light on the many possibilities of using technology to improve teacher preparation, there is still much to explore and learn about how to leverage innovative learning tools to create effective and appropriate learning experiences in K-12 and higher education. Overcoming faculty reticence to apply these potentially effective tools is one area of research. Another is to identify and apply what is known about the intersection of technology, learning, and the complex skills for success in teacher education. An ancient Chinese proverb says, "May you be blessed to live in interesting times." As teachers and teacher educators, we are living and working in dynamic, changing, and highly interesting times.

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