Introduction to the Special Issue on Blended Learning in the Health Sciences

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In January 2014, *The Chronicle of Higher Education* conducted an opinion survey of college and university presidents (N=349), on their views regarding change in higher education. *The Innovative University: What College Presidents Think about Change in American Higher Education*, provided insights into what campus leaders think about higher education's response to the wave of online technology that has inundated all aspects of human endeavor since the debut of the Internet and World Wide Web in the 1990s. In terms of instructional modalities, an overwhelming majority (81%) of presidents responded that hybrid courses that blend both face-to-face and online components are the future and will have a positive impact on higher education. In addition, when it comes to initiating change, most college presidents believe that government officials, politicians, and private industry have too much influence. Almost 80% believe that technological change should come from the faculty (Selingo, 2014).

This special edition focuses on the experiences at one university that exemplify faculty-led change. It is premised on the idea that faculty know their subject matter, curricula, and most importantly, their students better than outside drivers, and are in a pivotal position to affect change that provides meaningful improvement to their academic programs. The articles also provide evidence that online technology can be effective in instruction but is also in need of on-going adjustment and improvement.

Digital technology has the potential to transform higher education by increasing access, reducing costs, and improving learning outcomes (Means, Toyama, Murphy, Bakia, & Jones, 2010). Moreover, recent high school graduates will anticipate using instructional technology in their undergraduate programs based on current widespread use in K-12 education (Means et al.). Nevertheless, even though research indicates the growth of online learning in the United States, many institutions and disciplines remain heavily reliant upon traditional models of learning and have yet to fully incorporate digital technology in their curricula. Research and knowledge sharing among institutions and across disciplines may support adoption of online technologies by demonstrating how to address common barriers, including:

- Perceptions of inferiority of learning outcomes
- Lack of institutional support
- Faculty reliance upon traditional models of learning
- Perceptions of increased faculty workloads (Bowen, Nygren, Lack, & Chingos, 2013; Ocak, 2011)

The series of articles presented in this issue reveal how online learning is being promoted at The George Washington University School of Medicine and Health Sciences (GW SMHS) in disciplines heavily reliant upon traditional, face-to-face models of teaching and learning, such as is typical in physician assistant and physical therapy programs. Educators at this institution hope to share knowledge on their efforts to respond to challenges to health professions education by encouraging adoption of technology-enhanced and blended models of delivery. Health professions education has long recognized and struggled with the challenges of teaching both knowledge and skills while adjusting to ever expanding curricula. However, it is only more recently that online learning has been adopted in select disciplines, particularly in the field of nursing, as a potential answer to how we are going to educate the quantity of professionals required to meet the expanding needs of the population and how to do so in a cost effective way. Adoption of digital technologies in most health disciplines has not matched the pace of that in nursing, due in part to the heavy reliance upon traditional models of learning delivery (Prober & Heath, 2012). This article series considers the need for better integration of technology in the education of healthcare professionals and presents the efforts of one institution to promote integration of online technology into face-to-face courses. For the purpose of the articles series, the following courses modalities are defined as follows:

Technology-Enhanced

Augmenting a traditional face-to-face course with online technology (Allen & Seaman, 2013) *for a specific pedagogical purpose with no reduction in class time.*

Blended

Integrating online activities with traditional face-to-face class activities in a planned, pedagogically valuable manner while reducing face-to-face class time (Picciano, 2009).

Online

An asynchronous course offered fully online with no face-to-face class activities.

Overview of the Special Issue

Health professions education must graduate professionals capable of adjusting to an ever changing healthcare environment. In the first article in this series, *Information and Communication Technology to Facilitate Learning for Students in the Health Professions: Current Uses, Gaps, and Future Directions*, Costello and colleagues discuss the challenge of meeting the continually evolving expectations of health professional education considering the changes to the US Healthcare System and the need to develop forward thinking, adaptable graduates capable of immediate integration into a complex system of care. Authors consider current efforts to address the needs of health professions education to develop higher order thinking and to integrate current technology within curricula, while continuing to meet competency based expectations. The article also identifies how these efforts fall short of anticipating the totality of needs of future practitioners, offering insight into how use of technology might be enhanced going forward to promote critical thinking, communication, and psychomotor skills. Ultimately, the article emphasizes the need for educators, regardless of discipline, to be forward thinking in anticipating the knowledge and skill required by future graduates to identify how to address gaps in current education models.

While technology has the potential to address some of the challenges to health professions education, encouraging adoption of new learning models in disciplines heavily reliant upon traditional, lecture-based instruction is not easy. Institutional support is required for successful implementation of technology-enhanced and blended learning models (Graham, Woodfield, & Harrison, 2013). Faculty should receive instruction on the design and facilitation of new learning models and receive technological and instructional design support for course redesign and course facilitation. McDonald and colleagues, in

Educational Mixology: A Pedagogical Approach to Promoting Adoption of Technology to Support New Learning Models in Health Science Disciplines, discuss faculty development initiatives at GW SMHS aimed at promoting increased use of technology across curricula. Authors describe a multifaceted approach to faculty development including training in course development, a peer review process for course redesign, instructional design assistance, and technological support. A multidimensional approach was adopted to assess the impact of faculty development initiatives. Findings indicate both faculty and student satisfaction with changes made in online and technology-enhanced courses. Findings also indicate that the faculty development initiatives resulted in improved course quality, learning outcomes, and learner engagement across modalities. Yet, students were less satisfied with course redesign in blended courses than in technology enhanced courses. Future research is required to explore responses of students to blended courses design.

In addition to institutional support, faculty also require practical approaches to supporting pedagogical goals such as active learning, collaboration, reflective practice, and higher order thinking through the use of technology. Ruckert and colleagues, in *Using Technology to Promote Active and Social Learning Experiences in Health Professions Education,* present a model of how to incorporate technology to overcoming challenges to health professions education. The model emerged from data collected following the purposive redesign of four face-to-face courses as either technology enhanced or blended course. Faculty selected a course design to promote active learning, social learning, and collaborative learning. Authors share the results of formative and summative assessments conducted in each course indicating overall improvement of course quality and impact on student learning. The exemplars presented in this article demonstrate the importance of selecting technologies that promote achievement of learning objectives. Authors present "lessons learned" in relation to each exemplar that are valuable when considering course redesign, particularly in disciplines reliant upon traditional, lecture-style models of learning delivery. Results indicate that, when selected appropriately and aligned with learning objectives, technological integration can extend learning experiences beyond the boundaries of the traditional classroom to simulated clinical experiences and clinical experiences.

In the final article of the series, *Learning Partnerships: Students and Faculty Learning Together to Facilitate Reflection and Higher Order Thinking in a Blended Course,* McDonald, Straker, Schumpf, and Plack discuss the results of a student/faculty partnership to promote reflective practice in a blended physician assistant course. Faculty redesigned introductory physician assistant course from a face-to-face course to a blended courses to promote reflective practice and higher order thinking. Facilitation of reflective practice required new learning on the part of both faculty and students. Faculty learned to provide additional instruction on types of learning, levels of reflection and types of reflection to increase learner familiarity with the reflective process. They also learned to craft reflection prompts guiding learners toward higher levels of reflection. Students learned more about the reflective process while participation in reflective journaling. Results from a comparison of initial reflective writing with reflective journal post-intervention indicate increase level, depth, and breadth of reflection as well as an increase in occurrences of higher order thinking. The authors conclude that the purposive design combined with a partnership in learning can affect positive learning outcomes.

Higher education is in flux as faculty and administrators address concerns regarding access, quality, and completion rates; grapple with challenges related to increasing costs and decreasing space; and respond to societal concerns regarding the value of higher education the purpose of higher education--knowledge transmission of skill development (Advisory Committee on Student Financial Assistance, 2012; Berrett, 2011; Oreopoulus & Pteronijevic, 2013; Taylor, et al., 2011). Change is required system-wide to address these challenges. These articles provide a model for creating and sustaining educational organizational change. They show the organizational approach, the faculty that supports change, and the effects on students and on learning outcomes. Health science is the context, but the model offers a way to look at building technology into a higher education system to ensure that graduates are capable of meeting the demands of an increasingly complex social environment.

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