Creating a Continuously Learning Health System Through Technology: A Call to Action

Technologies have become a ubiquitous, integral, and seemingly necessary part of our daily personal lives. They also serve as critical tools for communication, data management, and clinical decision making that support the health care delivery system in which health professions students learn.

Over the past several decades, schools of nursing have embraced increasingly sophisticated technologies to facilitate the teaching–learning process in the delivery of didactic content, the acquisition of clinical skills and development of clinical judgment, and the application of these to actual clinical practice. Advances in educational technologies have opened options and opportunities for students to learn at their own pace; to practice increasingly sophisticated clinical interventions in simulated, safe learning environments; and to demonstrate their learning through such technology-enabled tools as unfolding simulated cases and computer-adaptive testing. Technology also has made it possible to reach students at disparate distances and times, thereby increasing access to quality nursing education, addressing learning goals of individual students, and improving nursing workforce distribution, especially in underserved areas.

In April 2015, the Josiah Macy Jr. Foundation sponsored an invitational conference focused on exploring the promise and impact of new technologies on the future of health professions education. Macy is the only national foundation dedicated solely to improving the education of health professionals, guided by the belief that such education has as its raison d’être to serve and improve the health of the public. Macy invited 38 leaders from health professions education, higher education, health care organizations, patient advocacy, and technology development representing diverse institutions and perspectives to gather and generate “recommendations around the use of existing and emerging technologies to enhance health professions teaching, learning, and performance assessment across the learning continuum—from entry into their chosen fields, through graduate education, continuing professional development, and maintenance of lifelong competency” (Stuart & Triola, 2015, p. 26).

Three papers were commissioned to provide a common foundation for the conference (available in the full report; see Stuart & Triola, 2015). These papers served to focus the dialogue and conferees to consider and come to agreement on several core themes after much lively deliberation and debate. First and foremost, participants were adamant that technology must not be viewed as an end in itself but rather as a resource to support and enhance the teaching–learning process and expand the opportunities for collaboration, teamwork, and partnership between faculty and students, among the different health professions, between educators and practitioners, and with patients, families, and communities.

Participants also agreed that for all its potential benefits, technology cannot and should not serve as a substitute for the critical personal interactions that occur between teachers and learners or between providers and patients—interactions that are essential to learning and healing. Equally important, technology cannot and should not replace faculty or health care providers but rather be leveraged to free them to more fully embrace and realize their roles as teachers and caregivers. In fact, when technology is used appropriately, it can enhance work efficiency and thereby give teachers and learners, as well as providers and patients, more time to engage face to face with each other in the caring, reciprocal, and meaningful ways essential to human well-being and to achieving successful learning and health outcomes.

Conferees were also adamant that technology cannot and should not be considered as a replacement for faculty but rather be valued as a resource that offers the opportunity to expand faculty’s reach, efficiency, and, ultimately, impact. To achieve these changes, training and developing faculty in using and fully leveraging the capabilities and benefits technology has to offer become essential. Faculty also must be supported in developing the skills necessary to shift from traditional teaching modalities to new roles as coaches, guides, mentors, and, perhaps most importantly, co-learners in a new technology-enabled teaching–learning system. A critical challenge in this process will be to determine when and how technology offers the best option for a given situation and to be ever mindful of the importance of balancing technology-enhanced education and clinical practice to free teachers, learners, and practitioners for those times and interactions when person-to-person contact simply cannot be mediated or improved through the use of technology.

A closely related final theme was acknowledging the importance of using
the robust data collection and analysis capabilities that technology and software make possible to track student progress and adapt the educational process to the learning needs of the individual student in support of student progression and academic success. Such data-based technologies give learners the ability to track their individual learning progress over time and ensure the portability of a continuous academic portfolio across their professional practice lifetime. Further, real-time community and population data that reflect community needs and priorities can be used to design or modify curriculum content and learning experiences to more closely link student learning with the most likely scenarios and situations they will encounter in practice.

After coming to agreement on the themes outlined above to serve as guiding assumptions for shaping the conference recommendations, participants shifted their attention from how technology can infuse and improve the teaching–learning process for both teachers and learners to the real power that technology offers for improving both health professions education and health care delivery by integrating and aligning the two into a seamless whole. This collective insight led participants to create a consensus vision statement that advocates for “a technologically enhanced and fully integrated health professions education and care delivery system” and to name this concept a “Continuously Learning Health System” (Stuart & Triola, 2015, pp. 29-30). The consensus statement includes:

In our vision for the future of health professions education, intelligent use of educational and information technologies supports the linkage between education and delivery systems to create a Continuously Learning Health System. In this system, teachers, learners, and clinical data inform continuous improvement processes, enable lifelong learning, and promote innovation to improve the health of the public.

Although the participants’ focus on the ways in which educational technology offers promise for improving health professions education was not abandoned, the consensus statement shifted their collective lens from viewing technology solely in terms of improving the educational process to viewing it as a tool by which health professions educators prepare students to not simply be successful in their academic programs. Rather, the statement calls for teachers and learners alike to situate themselves as fully participating, lifelong, continuous learners who practice in the larger context of an aligned and integrated education–practice health system that grounds health professions education—and all its participants (faculty, students, care providers, patients, families, and communities)—in a shared commitment to its ultimate raison d’être: improving the health of the public. In this system, technologies are leveraged to more fully align and integrate education and care delivery in ways that lead to continuous improvement of both, facilitating lifelong learning of health professionals across the learning and practice continuum, and advance innovations aimed at improving health care delivery and the health outcomes of patients, families, and communities.

The full conference report, with six specific recommendations, was recently released and serves as a call to action for health professions schools to harness the full range of communication, information, data management, and clinical technologies to improve the effectiveness and efficiency of the teaching–learning process, the student academic experience, and, ultimately, care delivery (Stuart & Triola, 2015). Each of the six recommendations that form the core of the report offers new ways of imagining the roles of nurse educators and the ways in which technologies can strengthen and support the teaching–learning experience, the transition from student to practitioner, and the shared investment with clinical practice in preparing lifelong learners with the knowledge, skills, and commitment to improve the system of care and its success in improving the health of the public. Perhaps most notably, the recommendations shift the focus from simply infusing technology into the academic environment to achieve goals of discrete learning experiences or a particular degree program to the potential that technologies hold for reconceptualizing and recreating health professions education and health care as an integrated whole that begins at entry to a profession and continues seamlessly throughout one’s professional career.

Nurse educators have long embraced and, in many ways, have been at the forefront of leveraging technology to support and further the goals of nursing education in preparing a practice-ready nursing workforce. The Macy conference recommendations provide a timely opportunity for nurse educators to review and reflect on the extent to which technologies are changing the fundamental nature of nursing education and to consider the possibilities that technologies offer for transforming pre- and postlicensure education. They also advocate for nurse educators to become fully participating partners in the continuous learning and improvement processes necessitated by the ever-evolving health care system.

Opportunities abound for the nursing education community to take advantage of the insights and recommendations offered by this latest Macy Foundation report. Nurse educators can work individually and collectively to consider the implications the report offers for transforming the lens through which we view and enact our teaching, research, and community service missions and roles. Consider the following opportunities and ways they may be adapted to individual learning experiences, courses, and curricula to better prepare our students to practice in the envisioned Continuously Learning Health System:

- Creating opportunities for competency-based learning or personalized learning pathways to competency for specific learning goals and documenting student acquisition of required competencies.
- Building students’ capacity for self-assessment, teamwork, and self-regulated learning to achieve learning outcomes and instill a commitment to lifelong professional development.
- Expanding learning opportunities unbound by time and place to improve access and enable continuous, lifelong, just-in-time learning and professional development.
- Expanding interprofessional learning opportunities by overcoming barriers of disparate curriculum structures and schedules.
- Leveraging distance technologies and social networking tools to enhance
interprofessional teamwork and partnerships with patients, families, and communities.

- Blending educational technologies with in-person learning engagement (faculty as coaches, mentors, and advisors) to support student success and achieve desired learning outcomes.
- Evaluating student learning and tracking student progress by using learning analytics to identify those in need of special academic support and guidance.
- Modifying promotion and tenure requirements to encourage and reward faculty for scholarly innovations in using technologies to support student learning.

Academic nurse leaders have the opportunity and a responsibility to work with their respective leadership teams and in partnership with colleagues in information technology, instructional design, institutional research, accreditation and regulation, and clinical partners and employers of graduates to implement the following:

- Secure and allocate resources to develop and support faculty in the best uses of educational technologies in designing curricula, organizing and delivering content, and coaching, advising, and mentoring students.
- Support an interprofessional, cross-institutional bank of best practices for using technology to support learning throughout professional life, including access to learning opportunities anytime, anywhere for students, faculty, and employers.
- Advocate for policies to support the use of open educational resources, which also offers promise for reducing educational costs.
- Provide faculty development and resources to incentivize and support nursing education research, including support for the scholarship of teaching.
- Collaborate more closely with clinical partners to ensure that students have opportunities to access and learn to use authentic clinical data (electronic health records and population health measures), as well as participate in continuous improvement and quality and safety activities, to ensure their readiness for practice and more seamless transition from school to professional practice.
- Work with partners in nursing education, clinical practice, and research to improve systems for sharing data, content, and innovations within and across institutional boundaries to achieve scalability of educational strategies; more effectively deploy limited resources; reduce duplication, inefficiency, and cost; and accelerate improvements and systems learning in both education and health care.
- Collaborate with accreditors and regulators to create improvements in using data-based technologies to simplify and streamline documentation of compliance with accreditation standards and regulatory requirements, including reciprocity and transferability across jurisdictional and organizational boundaries.

The Macy conference recommendations offer nurse educators a new way to think about the uses and benefits of technologies in creating a broader learning continuum from entry-level student to lifelong professional practitioner. Ultimately, these new recommendations are a call to more fully engage with clinical practice partners to build the Continuously Learning Health System envisioned by the Macy conference participants. Reconceptualizing the scope of work of nurse educators to encompass a lifelong learning partnership with students, graduates, and colleagues in clinical practice tightens the link between the education and care delivery systems and offers the promise of improving the learning and professional socialization experiences of students, the teaching and care delivery experiences of faculty and clinical partners, and, most importantly, the experiences and, ultimately, the health of the patients, families, and communities they will serve.

Reference

Janis P. Bellack, PhD, RN, FAAN, ANEF
Editor

George E. Thibault, MD
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