

# The Influence of Technology in Nursing Education



Stephen D. Krau, PhD, RN, CNE

## KEYWORDS

- Text mining • Data mining • Technology • Meaningful use • Telehealth • HIT
- Nursing education

## KEY POINTS

- The complexity of the relationship between nursing and technology becomes greater with the advent of new technology and technological devices.
- Faculty who are in the clinical area on a limited basis, and for nurses who are not involved in decisions related to the adoption of technology, terms and concepts related to technology can be misconstrued or misunderstood.
- Some major terms used in reference to technology and technological approaches such as meaningful use, as well as data mining (DM), along with concepts related to telehealth can only enhance the intricate relationship between nursing and technology.
- Keeping current with new technologies and concepts that affect optimal patient outcomes is a mandate for all nurses as they work with the technology and guide patient education related to technology.

## INTRODUCTION

There is much progress in the development of new technology and technologic modalities for either directly or indirectly improving patient care, as new innovations are created every day. There has been a great deal of discussion regarding how new technology has been seen as a hindrance to patient care by decreasing the time nurses spend in patient care, as well as regarding expenses that have emerged in purchasing programs and providing education and the rapid evolution that literally makes yesterday's invention, obsolete today. Nurses have identified that technology also has the potential for depersonalization and objectification of patients. The potential for technology to affect patient individuality and subjectivity and create an alienation between the

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School of Nursing, Vanderbilt University Medical Center, 461 21st Avenue South, Nashville, TN 37240, USA

E-mail address: [steve.krau@vanderbilt.edu](mailto:steve.krau@vanderbilt.edu)

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patient and health care providers with their caring purpose is clear. The complexity of the relationship between technology and nursing care is not new.<sup>1</sup>

This complexity is further intensified by the new terms and concepts that continue to inch into the vocabulary and discussions; this is evident not only in nursing practice but also in the society as a whole. For example, who could have guessed a decade ago that there would be talks about “sexting,” much less all of the legal and ethical issues that have ensued.<sup>2</sup> Understanding the various terms to describe technology in health care and conceptual terms related to health care is an ongoing task. For nurses who are not involved in technological decisions, and for faculty who have students in a clinical setting on a limited basis, the exposure to these concepts and terms can be restricted. Terms and concepts are heard in discussions, and in a nonsystematic context, can be misinterpreted or misunderstood. As part of an ongoing process, there are some basic terms and important concepts used in the arena of technology that should be understood by all nurses. There are many technology formats for education and learning, as well as simulation; the focus in this article is on technology seen in the clinical arena and research and often discussed by nurses. Students may overhear these words and come to the instructor for clarification. Nurses at the bedside may be unclear about what some of these concepts and terms actually entail. Understanding these terms and concepts is integral to the use and discussion of some of the many technological innovations.

When discussing technology, the focus could be on any one of a thousand concepts; the concepts explained in this article include terms related to health information technology (HIT) and meaningful use. Slipping from other technological areas are those terms that center on data management and data use such as text mining and DM. Monitoring devices and telehealth systems continue to carry some mystique for the novice nurse and nursing students. In addition, the recent importance of early warning systems (EWS) has emerged, because these systems provide a valuable tool for the early detection of deterioration in patient status, prompting quick intervention. Even when the names and concepts make sense in general, the meaning that these terms hold for nurses and nursing students can easily be misinterpreted or misunderstood.

### ***Health Information Technology***

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The report from the Institute of Medicine on the future of nursing makes a recommendation that nurses be involved in the development of new approaches to technology such as HIT, to advance as well as to improve health care.<sup>3</sup> HIT systems are those that are based on technology and are used to access, exchange, automate, and enhance decision making; provide support to health care professionals as well as patients; and promote behaviors that enhance health and wellness.<sup>4</sup> As such, HIT has the potential to affect health and health care in a myriad of ways. For example, this impact can be focused on improving the quality and the cost of health care; it can also expand the range of health care. There is recent evidence that it can play a significant role in the management of disease processes.<sup>5,6</sup> HIT specifically refers to those technologies that permit health care professionals to improve outcomes by sharing and using information, gather information from electronic health records (EHRs), collaborate through sharing information via secure information networks, allow electronic prescribing, as well as engage patients and their families in care via technological methods.<sup>4</sup>

### ***Meaningful Use***

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Although the term meaningful use carries a strong semblance to the suggestion of the term's connotation, the term has been operationalized to have specific

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