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## Utilizing On-line, Interactive, Adaptive Technology in Nursing Education

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## **Utilizing on-line, interactive, adaptive technology in nursing education**

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### **ABSTRACT**

**Background:** The COVID-19 pandemic is affecting health care institutions and is disrupting the training of future nurses. It is more important than ever to ensure that the educators and students have access to high-quality educational materials and technologies to ensure trainee preparedness for clinical and global health challenges. To help meet this challenge, online tools have become a viable option with the recent development of information technology. E-learning can be used to enhance a classroom course, or as a stand-alone course. These online tools include online labs, videos, high resolution images (X-ray, CT-scan, histology), cadaver labs and adaptive, interactive technology such as practice exams, virtual patients, and learning games. At its core, such systems are intended to identify what a student does and doesn't understand, identify and provide content that will help the student learn, assess again, help again, etc., until some defined learning goal is achieved. One of its greatest potentials is to target instruction at just above the student's ability level (to challenge but not discourage the student) and at the student's specific content needs.

**Objective:** This workshop will show how interactive online resources can be used by nursing educators to enhance a classroom course or for distance learning, including self-directed modules and learning activities that could be converted to virtual interactions. It will showcase the technology that is available and how to incorporate it into existing courses to utilize what research has shown increases student acceptance and learning outcomes. This workshop is aimed at nursing educators, education program coordinators and managers.

**Methods:** A literature review was conducted on the reported research of utilizing on-line, interactive, adaptive technology in nursing education. In addition, e-learning tools were incorporated into medical education courses taught by the author in blended and online courses.

**Results:** The assessment of suitability revealed that interactive online tools, online cadaver lab and subject-specific assignments for teaching medicine were predominantly viewed as constructive teaching tools. A strong causative factor in improved learning was the interactive, adaptive portions of the e-learning tools.

**Conclusion:** The understanding, study, and use of e-learning educational tools, their place in the hype cycle, and their application in the education of nurses are increasingly important. There is no single solution in moving forward with innovative teaching and learning techniques. Technology changes and advances, learners come in all types and learning styles as do faculty, and time and money are almost always at odds with the day to day operations. However, taking a step and trying out even one new technique, technology, or training experience can create a huge step in a new direction to improving nursing education even more dramatically over the next decade.

### **RECENT PUBLICATIONS**

- Deshpande, S., Ritzenthaler, D., Sun, A., Rudert, N., & Lewis, J. (2020). A unique flipped classroom approach shows promising results in physician assistant education. *Medical Teacher*, 42(3), 285-290.
- Feldman, J., Monteserin, A., & Amandi, A. (2015). Automatic detection of learning styles: state of the art. *Artificial Intelligence Review*, 44(2), 157-186.
- Gavriushenko, M. (2017). On personalized adaptation of learning environments. *Jyväskylä studies in computing*, (272).
- Kellman, P. J. (2013). Adaptive and perceptual learning technologies in medical education and training. *Military Medicine*, 178(suppl\_10), 98-106.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—where are the educators?. *International Journal of Educational Technology in Higher Education*, 16(1), 39.

## **BIOGRAPHY**

Dr. Zilola Khashimova is a medical doctor specializing in Obstetrics-Gynecology and Laparoscopic Surgery with experience in Family Medicine. She has taught medical students and residents for over 15 years as a part of teaching hospital and Physician Assistant students for the last 5 years at Francis Marion University and Dominican University of California. Dr. Khashimova has several peer-reviewed publications in medical journals. She has experience presenting at conferences, trainings, and seminars, and is certified in Hospital Administration, Ovarian Failure, Oncology, and Ultrasound Diagnostics.

Dr. Khashimova was awarded the distinction of Honorary Faculty Fellow at Dominican. She is a member of the South Carolina Ob/Gyn Society, the European Society of Gynecology (ESG), the Physician Assistant Education Association (PAEA), and the European Women's Management Development International Network (EWMD). She has an MBA from Francis Marion University, is a member of the Beta Gamma Sigma honor society and is certified as a Strategic Planner.

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