

## Chapter 52

# The Importance of Mobile Augmented Reality in Online Nursing Education

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### **ABSTRACT**

*The main topic of this chapter is the importance of mobile augmented reality in online nursing education. Firstly, imbalance nurse supply- demand will be discussed in the world and Turkey. Solution proposals of important institutions and organizations will be handled to increase the number and quality of nurses. One of these proposals is online nursing education. Secondly, the importance and use of mobile technology will be handled in online nursing education, and where mobile technology is used in nursing. Lastly, the use of mobile augmented reality will be tackled in theoretical and practical areas of online nursing education, and suggestions will be presented to online nursing education providers.*

### **INTRODUCTION**

In last century, the provision of health services has changed. The changing and developing healthcare system affects the basic health requirements of people, and also the nursing education. Some of these changes are very fast the increase in the world population, also increase the demand for health services, scientific advances, especially prevention of diseases, the development of diagnostic methods, the changing treatment methods, and technological developments. Because of these changes, the nurse educators have greater responsibilities. Nurses should have more comprehensive knowledge, enrich their care experiences, use technology and evaluate nursing purposes for support patients in complex system (American Association of Colleges of Nursing, 1998). Also, redesign of professional health education is necessary and timely, in view of the opportunities for mutual learning and joint solutions offered by global interdependence due to acceleration of flows of knowledge, technologies, and financing across borders, and the migration of both professionals and patients (Frenk et al., 2010). The purpose of this chapter is to address the situation of nursing in the world and in Turkey, to discuss solutions and to emphasize the use of mobile technologies, and the importance of mobile augmented reality practices in nursing education.

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## **BACKGROUND**

International Council of Nursing (ICN) (2006) stated that there is a link between the size of qualified nurses and health services to the community. There are the evidences on the increase of supply and demand imbalances of nurses, and major differences in nurse ratio in the world. ICN (2006) noted that the demands for both low and high- income countries have not been met.

In the United States, there are 140 thousand nurse shortages. It is expected to be 800 thousand nurses until 2020. According to the data of the World Health Organization, in 57 countries, it remains per thousand less than 2-3% nurse, midwife, and doctor. This ratio shows that some people in the world cannot receive even basic health care (Callister, 2012). According to Turkish Statistical Institute, there is only one nurse for every 549 people (TUIK, 2013). This number is very important to think situation of the healthcare services in Turkey.

Changes in the healthcare system, increasing number of the aware patients, and increase in the health care costs has also affected the nursing education. The focus is on specialized content knowledge and skills to prevent medical errors and ensure patient safety. On the other hand, nurses are expected to have high-level skills in working environments. These skills are access, analysis, synthesis, and evaluation. In this context, due to the increasing complex and vast amount of new data, nurse students have to know the ways of access to information. Thus, educators should pursue advances in technology and adopt effective teaching strategies to provide more effective learning. New tools are being developed to assist educators and nurse students to keep pace with the growing amount of new information. The work of educators is increasingly difficult. They have to gain students critical thinking and complex problem solving skills in many areas. In this context, in nursing education, technology can assist them to manage these expectations and make future health practitioners successful in their field (Ducut & Fontelo, 2008).

Tri-Council encourages for education on graduate, master and doctoral levels (TriCouncil, 2010). In health system, the higher-educated nurses are expected to work much more effectively (American Association of Colleges of Nursing, 1998). Aiken, Clarke, Cheung, Sloane, & Silber (2003) pointed out that nurses with Bachelor's and Master's degrees on average have better critical thinking skills than nurses with Associate's degrees. Because of this, hospitals recruit the higher educated nurses in order to reduce mortality rate. Also, authors add that hospitals strongly encourage their nurses to return to school to obtain higher degrees. In this context, online programs have a cost-effective option for both institutions and registered nurses who may not have access to traditional education to maintain a baccalaureate degree (McAlpine, Lockerbie, Ramsay, & Beaman, 2002; Ostrow & DiMaria-Ghalili, 2005). For this reason, the education that based on computer and Internet technology is seen as an alternative solution to increase the education levels of nursing (TriCouncil, 2010). In brief, the nurse shortage and the idea of increasing the level of vocational education has led to the growth of education programs that based on computer and Internet technologies (Schnetter, Lacy, Jones, Bakrim, Allen, & O'Neal, 2014).

According to American Associate of Colleges of Nursing (AACN) (2016) all nursing education programs delivered merely or in part via distance learning environment must meet the same academic program and learning support standards and accreditation criteria as programs provided in face-to-face formats, including the following:

- Student outcomes are consistent with the stated mission, goals, and objectives of the program.

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