New Technologies for Health Literacy Education:
Perspectives on Distance Learning

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Abstract
The revolution of new technology is transforming the delivery of health promotion. Health literacy has united with the technical environment for distance learning. Approaching social media with health messages raises critical attitudes and awareness. Information is transit and new technologies link health with the community. Health communication is fully equipped with modern technology and provides a social context for online learning. This article examines the integration of new media online tools which are influencing health literacy across cultures, and generations. The findings from this literature review will include pedagogical advancement in the areas of health information access and new technology platforms for distance learning.
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The purpose of this paper is to address the impact of new technology on health literacy education. The increasing interest in new technologies for distance learning has heightened awareness among health professionals. Of particular interest and complexity are new media tools for delivering online health promotion education. Some of the new technology platforms for online course delivery include educational courseware, satellite training and distance education. Other new technologies altering the health information landscape are video conferencing equipment, mobile device instruction and Web 2.0 applications.

Recently, there has been a growing interest in open course web-based educational courses. Currently, Johns Hopkins Bloomberg School of Public Health (JHSPH) is using an educational courseware for transmitting health knowledge, called the Open Courseware (OCW) project (Kanchanarakse, Gooding, Klaas & Yager, 2009). The rationale for allowing open access to course content is to advance science and disease prevention around the world (Kanchanaraksa, 2009, p. 40). The OCW project is transmitted into countries with limited accessibility to public health information. The Bloomberg School of Public Health network provides free open access to university courses which include university lectures on: health, culture, politics and economic development. The use of OCW influences the advancement of health information, collaboration and public health (Kanchanaraksa et. al). In addition to open courseware education the use of satellite broadcast is an effective technology for delivering health knowledge.

According to a research study in 2007, satellite broadcasting combined with classroom learning improved public health continuing education (CE) (Peddecord et al., 2007). The purpose of the study was to evaluate the effects of pre-training and post-training satellite CE training. The satellite distance education course was funded by the Center for Disease Control (CDC). The CE
satellite training was standardized for all health professionals. The primary topics for the CE modules were: bioterrorism, disaster preparedness, workforce development and mass vaccinations. The research indicates that the uses of satellite trainings can be effective for health care distance education (Peddecor et al., 2007).

The expansion of distance education has generated wide interest in new technologies. The study of information technology has become an important aspect to distribute health care information at the World Health Organization (WHO) (Lintonen, Konu, & Seedhouse, 2008). According to the WHO, information technology has grown exponentially over the past few years (Lintonen et al., 2008). Many recent studies have focused on media tools to transmit health care information. Knowledge of video conferencing, mobile device technology, and Web 2.0 applications has great importance for improving health literacy. A central issue in health care communications is the lack of access to quality health information.

**Video Conferencing**

The role of new technology is to distribute knowledge and reach a population base in underserved rural areas. One of the methods used to transfer knowledge is video conferencing. In a preliminary report at Spencer Gulf Rural Health School (SGRHS) and the University of South Australia (UniSA), six rural centers were established for undergraduate medical, nursing and allied health students (Newbury & Mckenzie, 2004). The clinical cites adopted an equatorial satellite ground station for connectivity. The video conferencing system broadcasts data to students via electronic white boards, jointly with audio and video images (Newbury & Mckenzie, 2004). The incorporation of video conferencing with health education provides rural medical students greater opportunities for learning.
Additionally, video conferencing usage has expanded from health professionals to health consumers. One seminar sponsored by Women’s Health Queensland Wide (WHQW) was designed to reach a demographic audience which was predominately women. (Faulkner & McClelland, 2002). The seminar focused on women’s health issues. The seminar was organized under the umbrella of the Women’s Justice Network (WJN), with an established video conference base of 20 sites including 11 rural sites (Faulkner & McClelland, 2002). The results from the video conference were favorable with 113 attendees at the 11 rural sites and 45 at the seminar site, resulting in an audience of 158. Notably, 75 attendees were health consumers, and 53, health professionals, primarily women with two male participants. The seminar reached both local and rural audiences expanding health literacy to both health professionals and health consumers. In addition to video conferencing, mobile device instruction is on the rise in health literacy education.

**Mobile Device Technology**

The field of health sciences has progressed from a digital community to a wireless health network. Many recent investigators have turned to mobile devices to connect quality health information with remote areas in developing countries. In a recent report, Frohberg, Goth and Schwabe (2009) defined mobile learning as: a handheld device connecting learners in the transferring of information. The development of mobile learning has lead to the hope that quality health information will be readily accessible. In developing countries urgent access to health information is essential to save lives.

In order to save lives, the data base infrastructure must be established to allow the flow of information among professionals. According to Ikhu-Omeregbe (2008) the architecture of mobile technology is “multi-tiered” between health centers, mobile medical staff, pharmacists,
and radiologists. Ikhu-Omoregbe (2008) interfaced a mobile instruction model connecting Physicians to patient’s data. Physicians log on to a secure central server via the mobile phone device. The design is called the “Doctor Information Module” which allows health practitioners to record and share patient information (Ikhu-Omoregbe, 2008). The result is immediate exchanges of information meeting the needs of underserved populations. The collaborative efforts by health professionals using mobile technology increase workforce capacity in developing countries.

**Web 2.0 Applications**

Although there have been considerable advances in mobile technology, the new media generation of technology is Web 2.0 applications. This new generation of internet users frequent social networking sites, rss feeds, wikis, blogs and pod-casts (Hansen, Thackeray, Barnes, Neiger, & McIntyre, 2008). In order for health information to be used as a public health strategy, health promotion experts must incorporate the Web 2.0 platform into their practice. The culture of social media reaches a diverse audience and expands dialogue with two-way communication channels.

Additionally, Web 2.0 applications show great potential to raise consciousness about health topics on blogs and wikis. The socially connective environment of interactive technology is an opportunity to promote health education (Chaney, Chaney, & Stellefson, 2009). For health promotion advocates, social networking platforms are an effective online tool in disease prevention. Most advocates agree that access to quality health information is a priority and Web 2.0 has the capacity to influence health lifestyles.
Conclusion

The main purpose of this paper has been to critically analyze the impact of new technology on health literacy education. The integration of distance education with health literacy impacts health professionals as well as health consumers. It should be noted that technology influences health literacy across cultures and generations. The review of the literature suggests that distance learning has no boundaries in health education. For this reason content development of quality health information must be designed to attract health consumers who utilize social media.

The interrelations of distance education and health literacy are extremely complex. On one end of the spectrum is OC and Satellite broadcasting, on the other end is video conferencing mobile learning and Web 2.0. applications. In the end there is no separation of the two spectrums. Distance education in the context of online learning, shares a common purpose in a collaborative environment. The result of linking distance learning with health education is the promotion of healthy living and saving lives. The vehicle for delivering quality health education is distance education.
References


