Chapter 22

An Elusive Formula:
The IT Role in Behavior Change in Public Health

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ABSTRACT

One approach to understanding transformative learning is to see it as a strong shift in basic understandings that changes how an individual and people interact with each other and the world; ultimately, this culminates in the power to make positive changes—to promote self-actualization and social justice. Change occurs in a multi-step process—from becoming aware of one's own thinking and actions, to understanding a need for positive change, and then developing the skills, emotional readiness, and tools to make those changes. This may involve the institutionalization of that change through habituation. The ability to create change through online learning and information technology has implications for many knowledge domains. This chapter summarizes some of the research and practices in behavior change technologies in public health. An inductive argument will be made for some design approaches to the use of IT for behavior change in public health, a critical issue of social justice and equity.

AN ELUSIVE FORMULA: THE IT ROLE IN BEHAVIOR CHANGE IN PUBLIC HEALTH

That ability for individual and societal change is especially relevant in public health, which has wide-ranging implications for generations in terms of well being and longevity, and the public good of cost-savings, environmental health, and productive citizens. The role of information technology (IT) in promoting healthy change has been growing with creative simulations, sensor networks for rich awarenesses, technological adoptions, the design and implementation of behavior change devices, and the popularization of social networking technologies.

Transformational Learning

Transformative learning, drawing from Mezirow's meta-theoretical Transformative Learning Theory

(1990, 1991, 2000), focuses on rational sense-making, and from that knowledge, critically reflecting, conducting reflective discourse, and then taking action (Merriam & Caffarella, 1999, p. 321). In the social realm, transformational learning may promote social justice and change (Freire, 1970s, as cited in Merriam & Caffarella, 1999, p. 324). Change may be highly personal and idiosyncratic, and may involve extra-rational factors such as emotions, intuition, personality, relationships, and culture. Transformational online education in public health seems to be quite piecemeal and to be applied in unique and disparate contexts. Forming a more coherent overall strategy may offer more gains in terms of human behavior modification.

Defining Public Health

The mission of public health is to "fulfill society's interest in assuring conditions in which people can be healthy" (Tor, Fowler, Harlow, Jasti, & Chen, 2006, p. 15). A people's health is one indicator of their well-being in terms of nutrition, standard-of-living, lifestyle, culture, education, and emotions; their health may be an indicator of their own government's efficacies. In a global context, public health manifests in different ways. The goals of public health generally include the following:

• The promotion and support of responsible individual health behaviors;
• The prevention of common diseases and epidemiological outbreaks;
• The protection against environmental hazards;
• The promotion of healthy behaviors, and the prevention of negative addictive behaviors;
• The promotion of mental health;
• The prevention of injuries;
• The support for universal access to quality public health resources;

• The protection of the food supply and agricultural infrastructure (Boddie & Kun, 2008) —in terms of safety, security, and nutritional value;
• The protection of animal and agricultural health;
• The enhancement of structural issues to enhance human life (such as the promotion of sidewalks in a neighborhood to encourage exercise);
• Crisis planning and response in case of public health emergencies (whether intentional, accidental, or natural), and support for community recovery, and
• Public health surveillance and early warning.

Those who work in public health hail from a number of fields: public health, human medicine, veterinary medicine, food science, kinesiology, research science, and security, among others. The formal structures of public health work include "clinical practitioners, health departments, laboratories, disease programs, researchers, and social services," with much coordination and interactions between them (Baker, 2006, p. 4).

Their focus is on so-called "herd medicine" or trying to change mass population behavior and improve mass health for broad-based benefits. Public health involves near-term changes as well as long-term changes; it cuts across societies and cultures and peoples. This work involves complex and multi-faceted interventions.

Public health understandings involve a wide level of knowledge. One underpinning involves a biological life sciences understanding of a microbial universe and the risks of naturally occurring microbial agents as well as human-made toxins risks. In a world of global travel, social intimacies, and fast-evolving pathogens, the shapes of the disease risks are huge—particularly for epidemics and pandemics. One aspect of this involves zoonotic diseases or those that may be

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