Chapter 7

Enhancing Nutritional Learning Outcomes within a Simulation and Pervasive Game– Based Strategy

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EXECUTIVE SUMMARY

The chapter outlines the design of a game to raise nutritional awareness within primary school-aged children. The game uses a blend of simulated and pervasive elements using ubiquitous technologies to enhance children's capacity to make informed choices with regard to their own eating habits. Nute's Adventures in Nomland is a project currently being undertaken at an Australian university to explore the potential of a casual game can be used to help parents and children understand the different nutritional values of the food they eat. The game contains both pervasive and simulation elements. The pervasive nature of the game is evident in the use of mobile phones to scan nutrition labels as part of a shopping activity. This shopping is then brought into a simulation game that allows learners to explore the effects of their decisions on a virtual pet, Nute, and then identify strategies to address shortfalls in that decision-making.

BACKGROUND

Australian and international evidence confirms that the early years of a child's life are critical to his or her future development. It is at this time that a child's brain is rapidly developing and the foundations for learning, behaviour and health over the life course are set (FaHCSIA, 2010). While the National Nutrition Survey (NNS) was conducted in 1995 and the last National Physical Activity Survey was in 1985, the intervening decades have seen substantial changes in the Australian physical exercise, food supply and eating habits. These include an increase in technologies that facilitate sedentary behaviour (e.g. video games and mobile phones) and changing family life and structure (e.g. increased participation of both primary and secondary care-givers in the workforce). All of these factors are likely to impact on what children eat and what they do. Indeed, the prevalence of overweight and obesity has rapidly increased since the mid-1980s. State-based surveys indicated that currently 5% of Australian children are obese and a further 20% are overweight using internationally agreed criteria. This trend is not only a national one. In the UK it is estimated that 10% of children between 2 and 10 years old are obese (UK Department of Health, 2011) while USA figures are even more alarming, with the prevalence of childhood obesity at over 17%, almost tripling over the last 20 years (Ogden, Carroll & Flegal, 2008). The World Health Organisation has gone so far as to claim childhood obesity is 'one of the most serious public health challenges of the 21st century' (WHO, 2012).

Effective health communication to young people should be based on a sound understanding of their perceptions of healthy and unhealthy eating habits, their perceptions of the various socialising agents and other sources communicating healthy eating habits to them, and their perceptions of different communication appeals regarding healthy eating. Scholars generally agree that healthy eating habits are developed through a process of socialisation, in which families, schools, the community, the government and international health organizations may all play an active role (Kelly et al., 2006; McGinnis et al., 2006; Raiha et al., 2006). Parents serve as role models and influence adolescents' purchase behaviour directly (McNeal and Ji, 1999). Empirical data supports the notion that parental support for healthy meals and nutrition skills has a positive association with adolescents' healthy food choices and healthy eating habits (Raiha et al., 2006; Young and Fors, 2001). Schools also disseminate nutrition and health information through the formal curriculum as well as extracurricular activities. Schools can support healthy eating by monitoring the nutrition values of the food supplied in lunches and snack shops (Nutbeam, 2000). Interestingly, however, peers have been shown to have a negative influence on healthy eating (Kelly et al., 2006). Conflict between parental influence and peer influence may prompt young consumers to refuse to bring healthy food to school

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