Chapter 10
Designing a Simulator for Teaching Ethical Decision-Making

Michael Power
Laval University, Canada

Lyse Langlois
Laval University, Canada

ABSTRACT

This chapter deals with a simulation-based learning environment called Ethical Advisor (EA). This case-based tool is aimed at immersing learners in a computer-generated, open learning environment in which they are challenged to identify relevant information using embedded clues and to analyze them in light of several theoretical models provided. Users resolve ethical dilemmas and moral problems related to everyday events as they learn how to manage information flow and select relevant items. The simulated environment reflects everyday situations drawn from a databank of over 200 case studies in educational administration. In our view, this learning environment is enabling development of a high level of competency in ethical decision-making and, as such, represents an excellent means of linking learning theory to technological advancement.

INTRODUCTION

The film *The Matrix* and its sequels introduced an old idea to a new crowd: what if life, as we know it, isn't? Of what can one be sure? Descartes was so preoccupied with this idea that his original thinking launched a scientific revolution (Burnham & Fieser, 2006). On the Internet you can listen to Oxford University philosopher Nick Bostrom (http://www.nickbostrom.com/) positing that we do indeed live in a matrix of sorts, but far less sexy than Neo and Trinity's (and did I mention Persephone's?). So, is there any sure way of knowing? Click on Hume, no, go back to Descartes…

So, thinking about reality and about whether we can know it is not new. Indeed, thinking about alternate realities and about simulating reality has become relatively commonplace, receiving huge twentieth- and twenty-first-century impetus from the entertainment world. In training and education, computer-generated simulation is entering its heyday as a viable means of providing learners with

DOI: 10.4018/978-1-61520-731-2.ch010

new ways of interacting with real-world realities in a threat-free, error-leveraged environment. Indeed, in the military, you don't do it until you've simulated it, over and over again.

This chapter deals with a modest simulation-building initiative aimed at immersing learners in a computer-generated, open learning environment which prompts them to identify relevant information, analyze it in light of several theoretical models provided, and resolve ethical dilemmas and moral problems related to everyday events.

BACKGROUND

Simulations in Education and Training

Advances in educational technology in the fields of e-learning (Garrison & Anderson, 2003), blended learning environments (Garrison &Vaughan, 2008) and blended online learning (synchronous and asynchronous) environments (Power, 2008) as well as computer-based simulations (Lean, Moisier, Towler, & Abbey, 2006) result in the development of highly innovative teaching and learning tools (de Jong & van Joolingen, 1998). In their landmark study, Brown, Collins, and Duguid (1989) come to the conclusion that "learning methods that are embedded in authentic situations are not merely useful; they are essential" (p. 33). Simulations present students with just such authentic situations. Moreover, such tools, combined with problem-based learning strategies (Gredler, 1992; Kaufman & Schell, 2007), allow learners to experience situations that were formerly either too expensive, too complex or simply too difficult to emulate (Aldrich, 2004).

In this chapter, we go beyond the "computer-based simulations" definition presented by Lean et al. (2006, p. 230), preferring to situate the simulation described here as a "computer-simulated open learning environment." This emphasizes that: a) the simulation is computer-generated; b) it is used as part of an open learning environment involving more educational resources than simply the simulation in and by itself (the latter being a component of the overall learning environment); and c) "open" is used in the sense of relating to a socioconstructivist-inspired learning environment, which places the individual firmly in charge of managing available data and resources, identifying critical components and ultimately exercising personal judgment when making decisions. Furthermore, in reference to Lean et al.'s typology, which identifies three types of computer-based simulations (gaming, training, modeling), we would suggest a fourth type, "discovery" or "exploratory," to best describe the simulation in this chapter.

Professionals in widely varying fields such as business (Crichton, Flin, & Rattray, 2000), engineering (Ross, 2004), medicine and health care (Bergin & Fors, 2003), education (Gredler, 2004), and others increasingly have access to powerful and realistic simulators and simulated environments. Simulations, especially those which implement actual case study-based databases (Dobson, Ha, Ciavarro, & Mulligan, 2005), have proven to be highly motivating (Hertel & Millis, 2002) as well as cost-effective (Brandon–Hall, 2006) learning tools in providing both initial and ongoing training to students. For instance, in the field of management, Crichton et al. (2000) report evidence of "increased confidence, better understanding of the nature of the crisis management, less reliance on standard operating procedures, willingness to take risks and learn with colleagues" (p. 215). In a medical setting, it has been reported that "simulations provide optimal opportunities toward assessment and training in real-world-like medical task settings that never put a patient at risk" (Streufert, Satish, & Barach, 2001, p.165). (see Chapter 3 for a detailed discussion of simulation in medical settings.)

Yet, despite the advantages that simulations offer, prohibitive design- and development-related costs limit wide-scale implementation of such