
Chapter XII

Design Cycle Usability Evaluations of an Intercultural Virtual Simulation Game for Collaborative Learning

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ABSTRACT

The present chapter describes the design cycle employed to create a computer-mediated social-process simulation called the DomeCityMOO. Participants created cultural identities that reflected the power imbalances in society and noted how their power and cultural identity were negotiated through their communication with others. Usability evaluation methodologies employed include design ethnography, contextual inquiry, task analyses, prototyping, and quantitative evaluation. The results indicate that the intercultural problem-solving simulation (DomeCityMOO) designed for a multiuser virtual learning

environment may make it easier for educators and learners to explore the essence of cultural identity awareness and intercultural relations skills expressed through one's communication. To date, intercultural real-time simulations are only designed for face-to-face. The DomeCityMOO is the first computer-mediated intercultural, multiuser, real-time simulation designed specifically to address issues of power and identity. The design principles employed in the DomeCityMOO challenge the popular belief that aspects of tacit culture and intercultural awareness can only be taught successfully face-to-face.

INTRODUCTION

Simulation is a relatively new social science research methodology. The field of simulation in the social sciences has been growing at a fast pace in the last 15 years, although simulation was first introduced over three decades ago (Axelrod, 1997). In the social sciences, simulation is defined as an environment used to replicate and teach behavioral models and processes that employ the use of a human in a particular role, actual or simulated (Shubik, 1975). Simulations are used in a variety of professional contexts to model complex systems. The purposes for which a simulation is valuable to social scientists are: prediction, performance, design, training, entertainment, education, proof, discovery, and theory building (Axelrod, 1997; Dawson, 1962).

Social-process simulations are usually designed for and conducted face-to-face. Gredler (1992) argued that the focus of social-process simulations is human interaction, reflection on one's actions, the development of empathy, and the post-simulation discussion. Simulations are often used in education for teaching intercultural communication principles and skills. Intercultural communication describes the exchange, and co-creation, of information and meanings by individuals or groups when at least one party perceives itself to be different from others. Social-process simulations focusing on intercultural relations usually put participants in a frustrating situation in order that they learn to function better in the negative condition. For example, certain early stages of culture shock are often cited as a "negative condition." Unfortunately, placing face-to-face participants in even a *simulated* negative condition (such as culture shock) often produces negative unintended effects (Byrnes & Kiger, 1992; Erickson & Erickson, 1979; Williams & Giles, 1992).

Until recently, designing a social-process simulation for a computer-mediated context did not make design sense. However synchronous computer-mediated contexts such as multiuser dimensions object-oriented (MOOs) and collaborative virtual environments (CVE) can be multiuser settings that provide several new opportunities for social-process simulations (Raybourn, 1997a). MOOs and CVEs are described in greater detail in subsequent sections of the present chapter.

Face-to-face interaction is frequently taken as the benchmark for ideal interaction in a computer-mediated environment (Hollan & Stornetta, 1992). However, instead of striving to make computer-mediated environments more like face-to-face

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