

## Chapter 2.2

# Designing for Social Interaction and Social Competence in a 3D–VLE

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### EXECUTIVE SUMMARY

*The purpose of the iSocial project is to support the development and practice of social competence for individuals with Autism Spectrum Disorders (ASD) through a social-skills curriculum and online social interaction delivered via a 3D virtual learning environment (3D-VLE). This chapter describes the background and rationale for developing iSocial, gives an overview of the system, and reports some of the results from a field test of a partial system implementation. The field test provides lessons about the initial system design and recognition of challenges to be faced. The key challenges include (1) finding best approaches for adapting effective teaching approaches to a 3D-VLE, (2) supporting online social interaction for a target population challenged to be social, and (3) amplifying the engagement of youth in support of achieving desired learning outcomes.*

### BACKGROUND

The iSocial project is a collaboration by two faculty members and a number of students and represents a joint effort between the Thompson Center for Autism and Neurodevelopmental Disorders (TC)

and the School of Information Science and Learning Technologies at the University of Missouri (MU). One faculty member, Janine Stichter, is a researcher in the field of social competence for youth with ASD and has developed a curriculum for teaching social competence to these youth. The 10-week curriculum, Social Competence

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Intervention based on a framework of Cognitive Behavioral Intervention (SCI-CBI), applies cognitive behavioral strategies to the development of social competence for youth with ASD. The second faculty member, Jim Laffey, is a researcher in the field of learning technologies and human-computer interaction. His research has included the development of a number of digital media systems and networked learning environments and includes a focus on social ability among members of these environments. As with many joint efforts in life, the collaboration began with a few casual conversations about their mutual interests and then escalated to a commitment to work together. In a 12-month period Stichter and Laffey wrote 4 failed proposals (two to MU-based granting agencies, one to the U.S. Department of Education and one to the National Science Foundation) in efforts to establish funding for the project. However, with each failed proposal the idea for iSocial came into sharper focus. The team continued to write funding proposals, but saw an opportunity with some personal and departmental resources, as well as a doctoral student ready to embark on his dissertation (Matt Schmidt), to begin development of a prototype system.

These initial stages with a fairly ad hoc collection of volunteers and some paid hours by a student programmer spanning a set of tasks that included identifying and building competence with a development environment, designing ways to adapt a face-to-face instruction into a 3D-VLE, and teaching ourselves how to succeed at both the collaboration and the development work. In the spring of 2008 two awards were made on the second submissions of revised proposals to the MU-based granting agencies which provided seed money to turn our prototype work into a pilot system for one unit of the social competence curriculum. As of fall 2008, funding support has come from the Thompson Center's Scholars Fund, the University of Missouri Research Board and Autism Speaks, a non-profit foundation devoted to autism research. This funding enables the project

to continue developing a key design concept of "social orthotics" and to test for system efficacy. Support for building a full implementation of the curriculum and for providing the iSocial system to youth outside a controlled field test context is being sought.

As the iSocial project demonstrates, a university is fertile ground for building and refining ideas for innovation. However, external funding is needed to develop and sustain a project, and the level of funding needed to develop complex systems is hard to achieve. The team's commitment to persevering through the many steps needed to get the project started and the rationale for external funding come from the potential of 3D-VLE to address a substantial need for helping youth with ASD develop social competence. Participation in iSocial will engage members in curriculum activities that target the remediation of core deficits in social functioning. According to the Center for Disease Control (2007), from 1994 to 2005 the number of children and youth ages 6–21 years receiving services for ASD increased from approximately 20,000 to 200,000. Children identified with ASD have deficits in social competence that can lead to problematic social behavior and social isolation (Stichter et al., 2007). The outcomes of these deficits, if untreated, can lead to a lower quality of life as well as deficits in other developmental areas such as language and cognition. To date there is an extensive body of research that supports using cognitive behavioral strategies for social skills training that are typically implemented in face-to-face instruction for individuals with ASD (Rogers, 2000). However, access to evidence-based interventions for youth with ASD for social skill instruction is limited. The iSocial project is an effort to test the potential of new technologies, such as internet-based 3D-VLEs to provide access to interventions, qualified guides, and social cohorts; all while maintaining fidelity to core features of the curriculum and intervention programs.

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