

# Chapter 1

## Virtual Worlds for Children with Medical Conditions: Experiences for Promoting Positive Youth Development

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### **ABSTRACT**

*This chapter describes an innovative, technology-based intervention for children with critical medical conditions that utilizes the Zora virtual world. Most specifically, the chapter describes two experiences, one with post-transplant pediatric patients and the other with pediatric cancer patients who participated in Zora. The virtual experience was designed to address issues of school transition and medical adherence, while offering psychosocial support in the context of a virtual community of peers. The design of the Zora virtual world is informed by the Positive Technological Development (PTD) framework which was inspired by Positive Youth Development (PYD). In Zora, users can communicate with each other via real-time chat and participate in open-ended guided activities to create a social network of peers. They can also build the personal and public spaces in the virtual city, create interactive characters and write stories for three-dimensional objects.*

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## SCENARIO

*Peter is a 14-year-old boy. He connects to Zora, a virtual city built and inhabited by 11 to 15 year olds. Peter is happy because he feels that the virtual home he created in Zora is almost finished. He put pictures of his favorite things and people, and wrote stories about his family and friends. Peter decides to go around the virtual city. He quickly navigates through Zora's different public spaces: the Transplant Experience House, the Homework Help Cabin, the Medical Center and the Smart Object House. Upon entering the Smart Object House, a virtual doctor welcomes him. "This is clever!" thinks Peter, "I will program a pill box to tell me when to take my medicine!" The Smart Object House is populated by other smart objects and characters created by youth who have experienced a transplant. At first sight, there is an interactive robot that helps you with medical procedures, alarms that sound when you need to fill a prescription, and a teleportation machine that takes you to the beach when one is tired of the hospital. Peter navigates around the three-dimensional space and encounters many different objects. Peter decides to add a pill box to the Smart Object House that sounds an alarm whenever it is time to take his pills. Peter programs the box to say the color of the pill when it sounds so that it's easier to know which to take. He associates the value "organization" to the pillbox and defines it in the Zora Collaborative Values Dictionary as "it is very important to organize your medicine. That way, you can stay healthy after your transplant." As he is about to leave the Smart Object House, he finds a calendar placed by Elena earlier that week. The calendar lists the many medical-related appointments Elena has scheduled that month. He also sees that Elena has used the Zora Values Dictionary to create a new value, "planning", and linked it to the calendar. As Peter is reading Elena's definition of planning, he recalls that he has an appointment in two weeks, and quickly*

*searches for his own calendar to see if it had been written down.*

This scenario describes an actual engagement by young people participating in a virtual community for post-transplant pediatric patients with a three-dimensional multi-user environment, called Zora. Zora is a virtual world that provides easy-to-use tools for children to design and program their own virtual city and, in the process, learn about school transition and medical adherence, as well as form peer relationships (Bers, 2001; Bers et al, 2010). Children are put in the role of producers, instead of consumers, of information, knowledge, and habits of mind.

This chapter describes an innovative technology-based intervention for children with critical medical conditions. It presents two case studies that show two potential ways of using a virtual world. The first involved a group of post-transplant youth from two different hospitals, who used Zora from their homes to specifically address issues of medical adherence and school transition in the context of a peer-support network. The second case involved a group of youth with cancer, sickle cell, and healthy siblings participating in a summer camp for children with illnesses and their families. They were introduced to the technology while participating in the face-to-face summer experience and then participated in an intervention that used Zora to sustain the friendships and levels of hope attained during camp, once they were back at home.

This chapter focuses on the virtual curriculum that was designed and implemented within the virtual world while offering psychosocial support in the context of a virtual community of peers. Activities, lead by e-mentors, are designed to foster relationships, teach technological skills, and facilitate the formation of a support network of peers and mentors. The chapter presents both case studies, introduces the Zora technology and the virtual curriculum as well as the theoretical framework upon which it was designed, Positive Technological Development.

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