

**Introducing Zora Camp4All:
A Virtual Community to Augment Pediatric Camping**

A thesis

submitted by

Kathryn Cantrell

in partial fulfillment of the requirements

for the degree of

Master of Arts

in

Child Development

TUFTS UNIVERSITY

February 2010

Advisors:

Marina Bers, Ph.D.

Donald Wertlieb, Ph.D.

Kerri Modry-Madell, Ph.D.

Abstract

Camp has a positive impact on adolescents with serious illnesses; in fact, camp increases hopeful attitudes by decreasing levels of anxiety related to the illness (Briery & Rabian, 1999; Turuk et al., 2006). The downfall with camp, though, is that it typically ends in a week and the hopefulness derived from the experience may dissipate when the camper returns to the chronic stress of his/her illness (Hinds, 1988b).

Since May 2009, in collaboration with Camp For All, a camp for children with serious illnesses, a 3D virtual environment resembling the facility was created as an arena for campers to maintain their friendships from camp and explore concepts like hope and community. The technology called Zora Camp4All was introduced to 40 adolescents with cancer and blood disorders and their siblings during their week at Camp For All in June 2009. After that week, they accessed the network through home or hospital computers and joined one another in a virtual Camp For All.

This research had three main goals, to discover if Zora Camp4All could: (1) sustain the campers' hopefulness after their week of camp, (2) sustain the campers' feeling of connectedness after their week of camp, and (3) promote the campers' technological confidence after using the program. The results from this study suggest that Zora Camp4All contributes to sustaining hopefulness, social connectedness, and positive technological development within the campers. Aspects of the program that aided in the sustainability remain to be determined. The campers who are siblings and the campers from an urban community scored significantly lower in each of the three areas. These findings call for future technological interventions catered to the developmental needs of these populations.

Acknowledgements

The journey to complete this thesis was certainly not done alone; many individuals provided support, encouragement, and ideas for which I am endlessly grateful. First and foremost, I would like to thank Professor Marina Bers, of the Eliot-Pearson Department of Child Development, who has served as an advisor and mentor during my transition into the field of child development. Accepting me with open arms despite my limited knowledge, her encouragement led me to pursue my deep interest in pediatric camping without hesitation. Her insights have been invaluable on this journey.

Next, I would like to thank mentor and committee member, Professor Kerri Mordry-Mandell, whose support has given me the comfort needed to merge my personal experiences with my academic interests and whose expertise has enlightened me to the importance of the sibling experience within pediatric communities.

I would also like to thank my third advisor, Professor Donald Wertlieb of the Eliot-Pearson Department of Child Development for his scholarly expertise in pediatric psychology and the clinical implications of interventions for adolescents and their families experiencing cancer and blood disorders. Also, I would like to thank him for his last minute availability to serve on my committee and his flexibility with the tight deadline.

In addition, other members of the Eliot-Pearson community have provided support and insight. In particular, I would like to thank my program advisor, Professor George Scarlett for his endless encouragement and enthusiasm for the mission of child life and other psychosocial programs.

I would like to thank the DevTech Research Group under the guidance of Professor Marina Bers at the Eliot-Pearson Department of Child Development for eagerly wel-

coming me into the research and being patient with my steep learning curve. To Keiko, Clement, Nauman, and Laura, thank you for your guidance, your friendship, and your willingness to help.

I would like to wholeheartedly thank Kurt Podeszwa and the community at Camp For All, the host of the project's initial phase, for allowing me to come back to an old home and explore the many facets of the inspiring and beautiful facility. To the Camp For All staff, thank you for welcoming me and allowing me to take time out of the busy week to introduce technology into the world of recreation.

I would like to thank my wonderful support system that has listened to my brainstorming sessions, edited drafts, and baked cookies to make this process easier and more colorful. Danny, Christine, Dara, Julie, Melissa, Becky, and Heather, thank you for your patient friendship.

Finally, I would like to thank my parents, Curtis and Mary Ellen Cantrell, for providing me a strong educational foundation upon which to build my masters work, support, love, and a deep appreciation for the passion behind my work with adolescents experiencing cancer and blood disorders. Above all, to my father, Curtis J. Cantrell, Jr., whose life of service and compassion will be remembered and honored in my work as I continue to build my career; thank you for believing in me.

The material in this thesis is based upon work support by the National Science Foundation under grant # IIS-0447166 and the Deborah Monroe Noonan Memorial Fund. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation (NSF) or the Deborah Monroe Noonan Memorial Fund.

Table of Contents

Chapter One: Introduction	1
Chapter Two: Literature Review.....	5
Overview of Constructs	5
Hopefulness.....	5
Social Connectedness	6
Positive Technological Development.....	7
Hopefulness in Adolescents with Serious Illnesses and their Families.....	9
Hopefulness and Interventions.....	12
Social Connectedness in Adolescents with Serious Illnesses and their Families	13
Social Connectedness and Pediatric Camping.....	15
Positive Technological Development in Adolescents with Serious Illnesses & their Families.....	17
Positive Technological Development and Virtual Communities.....	19
Chapter Three: Contexts of the Intervention.....	22
Context of the Intervention: Camp For All.....	22
Context of the Intervention: Zora Camp4All.....	27
Curriculum	29
Chapter Four: The Intervention.....	34
Phase 1: Pre-Camp and Consenting	34
Phase 2: At Camp.....	35
Phase 3: At Home.....	38
Chapter Five: Methodology	39
Research Goals.....	39
Overview of Methodological Design	39
Population Sample.....	41
Data Collection Sequence.....	42
Quantitative Tools	43
Hind’s Hopefulness Scale for Adolescents.....	43
Lee’s Social Connectedness Scale- Revised.....	44
Bers’ Positive Technological Development Questionnaire	44
Camper Demographic Form.....	45
Qualitative Tools.....	45
Semi-structured Interviews	45
Zora Camp For All Logs.....	45
Data Analysis	46
Chapter Six: Program Usage and Patterns	49

Participation	50
Facilitator’s Presence.....	54
Motivations	57
The Builder: testwizard.....	58
The Storyteller: sofiagarcia.....	60
The Connector: KirahBoo09	62
Curriculum Participation.....	63
Session 1	64
Session 2	65
Session 3	67
Session 4	67
Session 5	68
Session 6	69
Chapter Seven: Sustaining Hopefulness.....	71
Hopefulness After Camp For All	71
Hopefulness After Zora Camp4All	78
Chapter Eight: Sustaining Social Connectedness	84
Social Connectedness after Camp For All.....	84
Social Connectedness After Zora Camp4All.....	89
Chapter Nine: Sustaining Positive Technological Development.....	94
Positive Technological Development After Camp For All	94
Positive Technological Development After Zora Camp4All.....	98
Chapter Ten: Conclusions, Future Research, Implications, and Limitations.....	104
Conclusions.....	104
The Sibling Concern	105
Demographic Discrepancies.....	106
Efficacy of Curriculum	107
Future Research.....	108
Clinical Implications	109
Limitations	111
Program Feedback	112
Personal Reflection.....	113
Appendix A.....	116
Appendix B.....	117
Appendix C.....	119

Appendix D.....	124
Appendix E	128
Appendix F	129
Appendix G.....	133
Appendix H.....	137
Appendix I.....	143
References.....	145

List of Tables

<i>Table 2.1 Comparison of Theoretical Constructs</i>	8
<i>Table 2.2 Six C's of Positive Technological Development (Adapted from Bers, 2009)</i>	18
<i>Table 3.1 Camp For All Group Comparison</i>	25
<i>Table 3.2 Camp For All Daily Schedule</i>	26
<i>Table 3.3 Zora Camp4All Curriculum</i>	33
<i>Table 4.1 Overview of Phases</i>	34
<i>Table 4.2 At-Camp Session Schedule</i>	35
<i>Table 5.1 Hospital-Group Demographic Distribution</i>	41
<i>Table 5.2Diagnosis Distribution within Sample (N=40)</i>	42
<i>Table 5.3 Data Collection Timeline</i>	43
<i>Table 6.1 References to Zora Usage in Interviews</i>	49
<i>Table 6.2 Explanations for Decrease in Participation (N=10)</i>	57
<i>Table 6.3 Zora Camp4All User Profiles</i>	58
<i>Table 6.4 testwizard's Usage</i>	59
<i>Table 6.5 softiagarcia's Usage</i>	61
<i>Table 6.6 KirahBoo09 Usage</i>	62
<i>Table 6.7 Participating Cohort Demographics (N=10)</i>	64
<i>Table 7.1 Basline HSA Results</i>	72
<i>Table 7.2 Campers' Definitions of Hopefulness</i>	74
<i>Table 7.3 Experiences Contributing to Hopefulness</i>	75
<i>Table 7.4 Mean HSA Scores after Camp For All</i>	76
<i>Table 7.5 Descriptive Statistics of HSA after Camp For All</i>	76

<i>Table 7.6 Aspects of Camp that Contribute to Hopefulness</i>	77
<i>Table 7.7 Program Usage Patterns in Cohorts</i>	78
<i>Table 7.8 Mean HSA Scores after Zora Camp4All</i>	79
<i>Table 7.9 Descriptive Statistics of HSA Scores after Zora Camp4All</i>	79
<i>Table 7.10 Tested Relationships between Zora Usage and Change in HSA Scores</i>	80
<i>Table 7.11 Aspects of Zora Camp4All that Promote Hopefulness</i>	82
<i>Table 8.1 Baseline SCS-R Results</i>	85
<i>Table 8.2 Campers' Definitions of Camp Community</i>	86
<i>Table 8.3 Mean SCS-R Scores after Camp For All</i>	87
<i>Table 8.4 Descriptive Statistics for SCS-R Scores after Camp For All</i>	87
<i>Table 8.5 Aspects of Camp For All that Contribute to Community</i>	88
<i>Table 8.6 Program Usage Patterns in Cohorts</i>	89
<i>Table 8.7 Mean SCS-R Scores after Zora Camp4All</i>	90
<i>Table 8.8 Descriptive Statistics for SCS-R Scores after Zora Camp4All</i>	90
<i>Table 8.9 Correlations between Zora Usage and Change in SCS-R Scores</i>	91
<i>Table 8.10 Aspects of Zora Camp4All that Promote Community</i>	92
<i>Table 9.1 Baseline PTD Scores and Confidence Aggregate</i>	95
<i>Table 9.2 Factors that Contribute to Confidence</i>	96
<i>Table 9.3 Mean PTD Scores after Camp For All</i>	97
<i>Table 9.4 Descriptive Statistics for the Change in PTD</i>	97
<i>Table 9.5 Aspects of Camp For All that Promote Confidence</i>	98
<i>Table 9.6 Mean PTD Scores after Zora Camp4All</i>	99
<i>Table 9.7 Descriptive Statistics of PTD Scores after Zora Camp4All</i>	99

Table 9.8 Changes in the Six C's of PTSD after Zora Camp4All..... 100

Table 9.9 Correlations between Zora Usage and Change in PTSD Scores..... 101

Table 9.10 Aspects of Zora Camp4All that Promote PTSD 102

Table 10.1 Results Summary for each Hypothesis 105

Table 10.2 Camper Feedback on Zora Camp4All Program (N=40)..... 113

List of Figures

<i>Figure 3.1 Pre-Built Camp Gate in Zora Camp4All</i>	28
<i>Figure 3.2 Pre-Built Gathering Hall in Zora Camp4All</i>	29
<i>Figure 3.3 Pre-Built Lake in Zora Camp4All</i>	29
<i>Figure 4.1 Dreamcatcher Boys Session A</i>	36
<i>Figure 4.2 Dreamcatcher Girls Session B</i>	37
<i>Figure 6.1 Aerial View of Zora Camp4All after Completion</i>	50
<i>Figure 6.2 Login Frequency by User (N=40)</i>	52
<i>Figure 6.3 Hours Spent Online by User (N=40)</i>	53
<i>Figure 6.4 Number of Completed Curriculum Objectives by User (N=40)</i>	54
<i>Figure 6.5 Log-In Frequency Over Project's Entirety</i>	56
<i>Figure 6.6 testwizard's Living Room</i>	59
<i>Figure 6.7 testwizard's Bar</i>	59
<i>Figure 6.8 testwizard's Park</i>	60
<i>Figure 6.9 sofiagarcia's Hope Object</i>	61
<i>Figure 6.10 Camp Memory Message Board</i>	66
<i>Figure 6.11 Arts and Crafts Barn</i>	66
<i>Figure 6.12 The Rope Shack</i>	68
<i>Figure 6.13 LLewis' Story</i>	69
<i>Figure 6.14 Hope Hut</i>	70
<i>Figure 10.1 Proposed Model for Future Projects</i>	107

INTRODUCING ZORA CAMP4ALL: A VIRTUAL COMMUNITY TO AUGMENT PEDIATRIC CAMPING

Chapter One: Introduction

As soon as a person walks onto the crisp grass of Camp For All in Burton, Texas, and hears the laughter of children from across the 1000 acres of woods, hills, and lakes, he or she has already begun to understand how a week of nature can make a camper experiencing cancer or blood disorders feel like a normal child again. Away from the confines of the hospital and the restraint of protocol, a camper forgets about the worries that limit them during the year, and instead, just plays. Camp creates a strong community through fostering relationships built on a foundation of common struggles, fears and hopes. The campers can finally be with others who know exactly what they are going through. Though clinical emphasis is generally placed on the multiple psychosocial benefits of pediatric camping for children and adolescents with serious illnesses, fundamentally, camp is a safe haven of hope where every camper is loved.

Camp For All's motto, *Love Laughter Hope and Healing*, is expressed within the facility's programming by embedding and promoting positive psychology constructs such as hope and optimism within the activities throughout the week that are meant to promote the development of positive coping styles. In past research, camping interventions for youth with cancer and blood disorders have been shown to increase the youth's sense of hopefulness (Hinds, 2004). But what occurs when the youth return home to their routines of doctor's appointments and medical testing? Unfortunately, little literature addresses the re-entry phase of the camp experience; Hinds (1988b) found that hopefulness scores

decreased two weeks after camp's completion, indicating that the positive, goal-oriented attitude camp instilled evaporated as campers assimilated back into their normal routine.

As a former camp counselor, I have multiple memories of campers recalling how their week at camp was the only thing they looked forward to during the year. This consideration followed me through my journey with the Developmental Technologies Research Group as I saw patients connect across barriers such as distance and medical condition (Bers, 2008). Keeping the words of my campers in mind, I set out to discover how technology could play a role in enhancing the camp experience, even after the week comes to a close.

Using the Zora platform, a multi-user virtual world was developed mirroring Camp For All (Bers et al., 2001). First introduced to adolescent campers (aged 13-17) with cancer, blood disorders, and their siblings during their week at camp in July, the virtual world allowed users to chat with their friends from camp, share memories, and construct objects that represent their week. Upon returning home, the secure program became accessible 24/7, and provided facilitated group activities that combined hopefulness (Hinds, 1988b) with the spirit of Camp For All. The virtual world, named Zora Camp4All remained open until October 1, 2009.

Hope has gained significant recognition in its value in enhancing quality of life for individuals experiencing an illness (Herth, 2001; Hinds, 2004). Being hopeful is a significant determinant of psychosocial adaptation among adolescents with chronic illness; likewise, the outcomes of being hopeful among these adolescents are a commitment to treatment, adaptation to symptoms, and taking care of problems (Hinds and Martin, 1988). Hinds (1988b) determined that the hopefulness of adolescent campers with a sub-

stance abuse history decreased once reentering the context they left. The same can be said for many adolescents who find hopefulness while at camp and then return to hospitals, iv poles, and lab coats.

Technological interventions, specifically virtual worlds, have been shown to benefit an individual's need for community (Donath, 1996). Erikson (1982) explains that the adolescent's stage of development, identity versus role confusion, makes social interaction and connections vital for exploring one's identity and adult roles. For adolescents with an illness in the family, opportunities for social inclusion are often interrupted by disease-related activities such as hospitalizations or treatments (Snyder, 2000b). The inclusion of a virtual world within camp programming is an additional vehicle for campers to maintain their social connections as it provides community when the adolescent is unable to attend camp or is isolated within the hospital.

Technology is not ordinarily part of camp programming, at least not activity-centered, outdoors-based, camping for children with serious illness. In fact, when making initial contacts in regards to bringing computers to camp I received the following reaction, "but electronics aren't allowed at camp." Technology is a tool that lends itself to portability and twenty-four hour access. While it lacks the crisp morning air or the smell of horses, it provides a safe, loving community for the camper once the week at camp is over. Exploring ways to use technology to bring campers together should be considered further as it adds an entirely new dimension to camping, one that for future projects might be accessible year-round. Finally, technology is everywhere and technological literacy is an important skill for adolescents to maintain.

The goals of this research were to determine if the hope-based, camp inspired tool of Zora Camp4All can 1) sustain the campers' sense of hopefulness after their week of camp, 2) sustain the campers' sense of social connectedness after their week of camp, and 3) promote positive technological development. In addition to these three main goals, I also set myself to explore the overarching awareness of the campers' satisfaction with the program and the feasibility of introducing technology into recreation programs.

This thesis will first introduce the three constructs of interest: hopefulness social connectedness, and positive technological development. Second, it will describe the intervention, the methodology behind the research, and the procedures for data collection. Third, it will examine program usage and the campers' satisfaction with the program. Fourth, it will address the three research goals described previously, using data collected during the project to gain an understanding of Zora Camp4All's effects on the sample. Fifth, this thesis will conclude with exploring the implications of the findings, propose areas for future research, and examine user feedback.

Chapter Two: Literature Review

The foundation for this project rests within three constructs that are relevant both to the clinical world of pediatric psychology and the communities of therapeutic recreation and learning technologies: hopefulness, social connectedness, and positive technological development. The literature defining these constructs will be examined in this chapter; in particular, interventions using these constructs as models within similar populations will be explored.

Overview of Constructs

The following section introduces the three constructs and describes their relevance to this project.

Hopefulness

The term hope is central to Camp For All's culture; ubiquitous in the language of the staff, it even appears within the camp's ambitious motto, *Love, Laughter, Hope, and Healing*. Hope, according to the camp staff who work tirelessly to create a barrier free culture and programs that encourage optimism, is "the idea that the world can get better for youth with illnesses" (Kurt Podeszwa, Camp For All director). Academically, the construct of hopefulness has morphed from the initial definition of "a desire to seek goals" to the now multi-faceted positive psychology theory that defines hope for adolescents as "the degree to which an adolescent possesses a comforting or life-sustaining, reality-based belief that a positive future exists for self and others" (Korner, 1970, p. 134; Hinds, 2004, p. 928).

Hope has its roots in “intrapersonal, interpersonal, and environmental/sociological experiences;” that is, hope is developed within an individual between individuals, and among individuals in a community or society (Ferran, Herth, Popovich, 1995, p.8). Its foundation is set early in life as Erikson (1982), in his theory of development, suggests that intrapersonal and interpersonal “hope emerge during infancy, the first of three crucial stages of life, and out of the antithesis of basic trust versus mistrust” (p. 55). When individuals or groups direct their energy and emotions toward a common goal, the term hopefulness arises. The active element of this construct, where individuals and groups pool their energy, is a basic element of the camping culture as it demonstrates the power of coming together for a common goal. Additionally, because Camp For All utilizes the term hopefulness throughout their culture, this construct was chosen as the foundation of this project in an effort to inform the intervention so that it mirrors the Camp For All experience.

Social Connectedness

As previously stated, Ferran, Herth, and Popovich (1995) describe hope as having its roots in “intrapersonal, interpersonal, and environmental/sociological experiences;” that is, hope emerges within the connections individuals make with themselves, those around them, and society (p.8). Likewise, Frydenberg and Lewis (1993) explain that within adolescent coping, connections with others and hopefulness relate as adolescents tend to rely on social ties to inform their hopeful thinking patterns. A sense of connectedness grows during adolescence and extends throughout the adult life. The maturing self, having successfully maintained companionships without any threat to self-esteem, is able to feel comfortable and confident within larger social context than family or friends

(Lee, 1995). This sense of connectedness allows people to maintain feelings of being human among humans and to identify with those who may be perceived as different from themselves (Kohut, 1984). Like that of hopefulness, the exact definition of social connectedness varies among researchers; for this project, though, the definition provided by Lee and Robins (1998) will be used. Lee and Robins (1998) describe social connectedness as, “the subjective awareness of being in close relationship with the social world” (p. 338).

A sense of connectedness is pivotal to the pediatric camping as community is stressed and utilized as a resource for campers. Likewise, for many adolescents with a serious illness or their siblings, the camp community acts as a support network of others who share the same struggles. At Camp For All, a sense of connectedness is encouraged; thus, connectedness was incorporated into this project to promote an extended community.

Positive Technological Development

Cantrell and Lupinacci (2004) argue for a direct relationship between hopefulness and self-esteem. In their study of 45 adolescents with cancer and 45 adolescents who were healthy, “the correlation between these two variables was strong and highly significant;” and thus, they argue that self-esteem acts as a predictor of hopefulness (p. 483). Likewise, self-esteem has been linked to coping strategies such as the hopefulness used when adolescents are faced with a health concern either of their own or of someone in their family (Hendricks et al., 2002).

Because confidence is so important to the individual developing hopeful coping strategies, Ber’s (2009) framework of positive technological development was used to

inform the technology and the curriculum. This interdisciplinary framework “offers a way to understand positive youth development in a technology-rich context” (Bers & Chau, 2009, p. 7). The framework extends the six C’s of positive youth development into the world of technology, including Confidence and Competence, critical elements of hopeful thinking. This framework not only acts as a foundation for the technology, but also informed the incorporation of Zora Camp4All into Camp For All as it was important to provide a positive, safe, and empowering extension to their program.

In order to understand the multi-faceted components of the constructs and the many programs developed from their foundation, the remainder of this chapter explores the literature that defines the constructs, their impact on adolescents and families with cancer or blood disorders, along with cited interventions.

Table 2.1 Comparison of Theoretical Constructs

	Construct		
	Hope	Social Connectedness	Positive Technological Development (PTD)
Definition	“the degree to which an adolescent possesses a comforting or life-sustaining, reality-based belief that a positive future exists for self and others” (Hinds, 2004)	“the subjective awareness of being in close relationship with the social world” (Lee and Robbins, 1998).	framework used to design and evaluate technology-rich programs that promote positive development by placing an emphasis on the strengths of youth
Origins	Positive Psychology	Social Psychology	Child Development/ Constructionist Theory of Learning
Key Authors	Hinds, P.	Lee, R.	Bers, M.
Intervention Formats	Support groups, on-line hope programs	Group support networks, pediatric camping	Technology interventions, virtual communities, robotics workshops

Hopefulness in Adolescents with Serious Illnesses and their Families

Hopefulness places an individual in an advantage when faced with a situation that requires coping. The stress and coping paradigm has guided considerable health-related research for the past two decades and during this time, hope has been cited as an important variable within the paradigm. Lazarus and Folkman (1984) claim that hope can act as both an emotion-focused and problem-solving coping strategy and as a method of cognitive appraisal. In Synder's (2003) definition of hope, hopefulness requires action-based thoughts and behaviors leading to a goal, actions that mirror the problem-focused coping strategies such as defining a problem, identifying alternatives, comparing alternatives, and selecting an alternative.

Hope is consistently cited as an essential psychosocial resource for adolescents who are coping with a critical illness and the treatments that accompany the experience; additionally, coping strategies that employ hope are often cited as beneficial for the teen (Hinds, 2004; Hinds and Martin, 1988; Ritchie 2001). Also, it has been shown that "people who have good medical information and who demonstrate a hopeful, active coping style are likely to deal more effectively when faced with an actual illness experience" (Taylor, 2000, p. 361). When adolescents experience a chronic or life threatening illness, their cognitions about efforts to cope with treatment and its painful side effects have an important impact on their adjustment. In fact, an adolescent who initially comes into the hospital hopeful can, after round one of chemotherapy or their first pain crisis, have an adjusted concept of their goals and their ability to complete them. But, according to Taylor:

By remaining “actively involved in goal-pursuits and by maintaining high levels of agentic and pathways thinking, these cancer patients are able to cope effectively and remain engaged with the world. The hope for recovery and return to one’s healthy life are implicit in the cancer patient’s fighting spirit.” (Taylor, 2000, p.363)

Hinds has pioneered the study of hope in adolescents. Hinds’ (1988b) quantitative investigation of hope as experienced in a camping environment was a longitudinal study of adolescents during treatment in a substance abuse recreation program. During the program, researchers measured hope three times using the Hopefulness Scale for Adolescents (HSA): upon admission (Time 1), prior to leaving the program (Time 2), and approximately a month after discharge (Time 3) (Hinds, 1988b). The results of the study show that the score for hopefulness was much higher during Time 2 than Time 1. Unfortunately, after discharge and once back into their previous context, the adolescent’s hopefulness dropped again one month later. Thus, the findings raise questions about the ability to create a lasting impact on adolescents once the examined program is complete. This implies that with a program involving hope it is important to impact the adolescent’s long-term attitude.

A qualitative, interview-based study stemming off the previous research observed adolescents who had been diagnosed with cancer (Hinds & Martin, 1988). Two interviews took place, one to collect data and the second to confirm the researcher’s impressions. Based on the interviews, hope (as described by Hinds & Martin, 1988) was redefined as: *the degree to which an adolescent possesses a comforting or life-sustaining, reality-based belief that a positive future exists for self or others* (Hinds & Martin, 1988).

Hinds & Martin (1988) indicate that adolescents show more hopefulness than adults and are more willing to articulate their thoughts concerning hope. Thus, maintaining conversations with the adolescent that explicitly include hope is important to include in an intervention.

In a more recent study, Ritchie (2001) looked at the psychosocial functioning of adolescents with cancer and examined the variations of hopefulness amongst gender and age. The study, which included 45 adolescents with cancer, examined the relationships among stages of adolescence, gender, self-esteem and hopefulness. Mean scores for self-esteem and hopefulness were comparable to normative data reported for healthy adolescents on each scale. Perceived levels of self-esteem and hopefulness did not significantly differ between boys and girls overall; early, middle, and late adolescents; or between boys and girls within each stage of adolescence. The greatest determinant for hopefulness was not age or gender, but instead self-esteem. This is important for the psychosocial therapy of an adolescent with cancer as it reminds the facilitator, or the leader of the intervention, to reinforce not only hope, but self-esteem as well.

The sibling experience, though, is completely different and while the patient is able to draw hope from the healthcare team that works to maintain a positive attitude, the sibling might not have the same resources. Cantrell and Lupinacci (2004) found that individuals without an illness experienced lower mean scores of hopefulness when measured with the Hinds' Hopefulness Scale for Adolescents (HSA) compared to individuals with an illness. Additionally, adolescent siblings of individuals with an illness are at increased risk for internalizing disorders including depression, anxiety, and obsessive-compulsive symptoms (Stawski, 1997). Unfortunately, far less research on hopefulness

has been conducted on family members of those individuals with a serious illness. Lanin-Kettering (2009), though, demonstrated that the social support program, SuperSibs!, increased the siblings' sense of hopefulness; in fact, 75% of siblings noted that they felt stronger and more hopeful after receiving SuperSibs! services. Kylma & Juvakka (2007) explored parents' hopefulness after their child's diagnosis of a serious illness but still the sibling piece is missing; because this population is so important to this project, the siblings' definitions of hopefulness will be discussed within Chapter 7.

Hopefulness and Interventions

Qualitative studies across the age and health-illness continuums have identified potential hope-fostering strategies and interventions and have laid the groundwork for future intervention studies in clinical populations (Gelling & Prevost, 1999; Herth, 1990, 1993a, 1993b, Koopmeiners et al, 1997). Specifically, interventions employing hope as their theoretical backbone have been introduced to adult populations experiencing cancer (Ferran et al, 1992). Herth (2001), for example, employed the Hope Intervention Program (HIP) in a study with 38 adults with first recurrence of cancer. The Hope Intervention Program (HIP) consisted of 8 sequential, weekly sessions employing a small group interactional format. Data suggested that HIP positively affected the participants' rebuilding and maintenance of hope. Additionally, 92% of the participants "felt that having an opportunity to meet and share with group members, feeling support of others, and realizing that they shared many similar thoughts and feelings was extremely helpful" (Herth, 2001, p. 1016).

Cantrell and Conte (2008) chronicled the outcome of an online intervention aimed at enhancing hope in adolescent female cancer patients. The eight-week program also

employed Herth's (2001) Hope Intervention Program Curriculum. The six participants and the researchers met online as a group once a week for 2 hours each session. The main goals of the research were to determine the feasibility of the program, assess the participant's receptivity to the program, determine if trusting relationships were built, and conclude if study participants perceived the time spent online as worthwhile and valuable. Overall, the participants spoke optimistically about being able to interact with other survivors their age; additionally, "of all the HIP sessions, the participants responded most positively to those sessions in which they shared their thoughts and objects of hope with the other participants" (Cantrell & Conte, 2008, p. 376). Participants mentioned that just the ability to share their stories promoted a feeling of trust and hopefulness within the group and months later, participants still considered the group to be a valuable addition to their lives.

While interventions employing hope have been introduced to adolescents diagnosed with cancer, the same cannot be said for adolescents with sickle cell disease, hemophilia, or siblings of adolescents with serious illnesses. This project, though, extends the sample to include campers with blood disorders and campers who are siblings of individuals with a critical illness. The combination of these populations within the sample will provide an understanding of how interventions like Herth's (2001) HIP can be employed in other arenas.

Social Connectedness in Adolescents with Serious Illnesses and their Families

"Connectedness seems to buffer against social isolation, perhaps through the individual's increased willingness to take interpersonal risks" such as friendship formation or

sharing personal experiences (Townsend and McWhirter, 2005, p. 191). The individual who struggles with feeling connected begins to see themselves as different and distant from society and those individuals who comprise their immediate social network. This person may try to relate to others but feel frustrated when unable to do so. In an extreme case, the person may distance themselves from those around them and from society and lead a solitary life. Illness plays a role in feeling distant or different from immediate circles of influence. Many adolescents with a serious illness claim to be misunderstood or unable to fit in, and while this feeling may fade with recovery, the process of healing can lead to a feeling of disconnectedness.

The isolation of illness can act as a risk factor for youth experiencing cancer, or a blood disorder, and for their siblings. Each experience limits interpersonal, social, and academic opportunities due to illness-related factors such as hospitalizations during critical periods of cognitive, emotional, and social development; Schaffer et al. (1999) explains that this absence is a risk factor that could lead to social and peer difficulties in this population.

Noll et al. (2007) examined social connectedness between youth with sickle cell disease and their peers. Youths with sickle cell disease were selected less often as a best friend and girls with sickle cell disease were rated by their peers as less sociable and less well accepted.

Woodgate (2006) explains that adolescents battling cancer favor having a “special friend” that is there to support them, one that demonstrates consistent loyalty (p. 126). She explains that these stable, constant friendships are more valuable for the teens than multiple friends who provide limited contact and presence. The camping community

places value within facilitating friendships between their campers can act as catalyst for these relationships, especially if the campers have a similar desire for friendships that emphasize loyalty.

Social Connectedness and Pediatric Camping

Many social support interventions, through their inherent design, contribute to positive feelings associated with social connectedness including a strengthened sense of community and stronger peer relationships. This section explores the specific arena of pediatric camping interventions and while literature investigating adolescents within pediatric camping is sparse, there is an overall consensus that adolescents gain a positive community experience within camping.

Camp enhances positive attitudes by decreasing levels of anxiety around thoughts of illness. For example, Briery and Rabian (1999) looked at 90 adolescent campers who attended Camp Aldersgate. The campers made up three illness groups, 37 children with asthma, 32 children with diabetes, and 21 children with spina bifida. Overall, the children in the sample reported more positive attitudes about their illness and less anxiety at the end of a 1-week camp session than at the start. Additionally, the rate change within positive attitudes was not specific to one population, but instead was seen consistently throughout each illness group, implying that camp benefits all ages regardless of diagnosis. Although the study does not specify which aspect of camp resulted in the increase, it can be assumed that the community and peer support created within the week were a major influence of attitude, especially for adolescents who depend so heavily on peer acceptance.

Turuk et al. (2006) studied 97 adolescent campers living with cancer and diabetes completed scales addressing self-esteem, self-efficacy, and anxiety pre-camp, post-camp, and 2 months follow-up. Significant positive changes were observed regarding self-esteem and self-efficacy and similar to Briery et al. (1999), “the type of illness did not appear to significantly influence adolescent’s responses to camp” (Turuk et al., 2006, p. 447).

Camp also enhances positive attitudes by improving self-concept in children. For example, Zimmerman et al. (1987) used the Piers-Harris Children’s Self Concept Scale (Piers, 1969) on a sample of 63 children with diabetes and the children significantly increased in self-concept scores after camp. Because camp programming is typically designed to reinforce efficacy and confidence not only with skill sets but also with acquiring peer relationships, the atmosphere during the week sets the children up for success and a confidence boost.

Unlike interventions promoting hopefulness, camping communities have made a mark on the sibling population; in fact, camp can be an environment that provides well-siblings and patients with the same opportunities for self-discovery and socialization. Wellisch et al. (2006) studied campers experiencing cancer and their siblings to learn if both groups retained (remembered) pleasurable camp activities 4-6 months following the camp experience. “For patient and sibling campers alike no differences were observed in the data,” indicating that both groups recalled the joy of camp (Wellisch et al, 2006, p. 64). This study implies that the camp experience can provide positive memories for both patients and their siblings. Additionally, Packman et al. (2004) studied Camp Okizu, a camp that addressed the emotional concerns of siblings, and concluded that the camp had

a positive impact on the campers. From pre- to post-camp, the siblings reported statistically significant decreases in symptoms of posttraumatic stress and anxiety, and statistically significant improvements in quality of life and self esteem (Packman et al., 2004, p. 201). Additionally, Murray (2001) found that healthy siblings aged 7-12 years old who attended summer camp scored higher on the Personal Attribute Inventory for Children (PAIC) than healthy siblings who did not attend camp.

Positive Technological Development in Adolescents with Serious Illnesses & their Families

The third construct behind the project is positive technological development, a theoretical framework used to design and evaluate technology-rich programs that promote positive development by placing an emphasis on the strengths of youth instead of focusing on risk-taking behavior (Bers, 2009). The framework expands on the notion of positive youth development which involves cognitive, personal, social, emotional, and civic aspects of young people, known as the six “C”s, and incorporates the C’s into a technological context (Lerner et al., 2005). Bers and Chau (2009) explains that the “C”s within positive technological development include the following aspects, (explained further in Table 2.2) Competence, Connection, Character, Confidence, Caring, and Contribution. Bers and Chau (2009) expands by saying:

PTD is an attempt to develop a theoretical framework that integrates both psychological and sociocultural dimensions of identity. Thus the emphasis is on investigating both intrapersonal characteristics that might impact the use of technology (such as competence, confidence, and character) and interpersonal ones (such as

caring, connection, and contribution) that situate the individual within a larger social context. (p. 25)

Beals and Bers (2008) explain the importance of considering applied developmental science when designing programs for youth as all other “environments for children, including their homes, schools, and playgrounds,” accommodate their age and developmental level; thus, it makes sense that technology designed for youth, especially virtual environments, would follow the same requirements (p. 53). Additionally, “the term “positive” connotes the promotion of valued characteristics and activities that would lead a young person toward a good developmental trajectory” (Bers, 2009, p. 6). This ideation is shared within the pediatric camping community.

Table 2.2 Six C's of Positive Technological Development (Adapted from Bers, 2009)

Six Cs of Positive Technological Development					
Competence	Connection	Character	Confidence	Caring	Contribution
An ability to use technology, to create or design projects using the computer in order to accomplish a goal, and to debug projects and problem-solve	Positive bonds and relationships established and maintained by the use of technology	Awareness and respect of personal integrity and moral and social values while using technologies in responsible ways and an ability to express oneself using technology.	A sense of oneself as someone who can act and learn to act successfully in a technology-rich environment and find help when necessary and have perseverance over technical difficulty	A sense of compassion and willingness to respond to needs and concerns of other individuals, to assist others with technical difficulties, and to use technology as means to help others.	An orientation to contribute to society by using and proposing technologies to solve community/social problems

The need for technology to have a developmental lens is especially important to populations experiencing the stress of a serious illness such as cancer, sickle cell, and

hemophilia. Adolescents within Erikson's (1982) stage, "identity versus role confusion," struggle with establishing their social and occupational identities while also looking toward the future and projecting their adult roles. Adolescents experiencing a serious illness, on the other hand, must also struggle with the many stressors that accompany their diagnosis and how these stressors will develop as the adolescent ages. In particular, this population can feel isolated from their peers, both physically and emotionally, as they are removed from normal routine for hospitalizations, appointments, or treatments. This isolation makes technology, especially virtual communities, an ideal vehicle for maintaining connections or continuing social development; however, designers must create curriculum with developmental and illness specific considerations in mind.

Positive Technological Development and Virtual Communities

Technological interventions, specifically virtual worlds, have been shown to benefit an individual's need for community (Donath, 1996; Bers et al. 2001; Bers et al. 2007; Bers, 2009). Additionally, technology has also benefited adolescents' physical adaptation to illness. In fact, even in the 1980's, Redd et al. (1987) theorized that STARBRIGHT World, a virtual world provided at many hospitals in the country, served as an enhanced external distraction technique, and for adolescent cancer patients offered an escape from treatment-related pain.

In a pilot study conducted by Bers et al. (2001) at Boston Children's Hospital's pediatric renal department, seven participants ranging from seven to eighteen years old used the virtual community, Zora, while receiving dialysis. Logs of interactions online were analyzed and overall, "participants reported that they were very satisfied with Zora and that they enjoyed very much participating in the experience" (Bers et al., 2001, p.

384). Zora also acted as a catalyst for new interaction as “patients reported that using Zora helped them make friends or get support from other kids on dialysis” (Bers et al., 2001, p. 385). While the community of Zora was small with just seven participants, the patients still felt that a community was growing and that they were contributing to friendships.

The implementation of STARBRIGHT World to the hospital setting has been widely publicized and observed. Battles and Wiener (2002) studied the psychosocial effects of SBW, an interactive virtual world for children with life-threatening illness. Thirty-two outpatient caregiver-child dyads participated from across the United States. The mean age of the children who participated was 13.5 years and 78% were living with HIV, 12.4% with cancer, 6.3% with chronic granuloma disease, and 3.2% with neurofibromatosis. Upon the study’s completion, researchers discovered that “SBW appears to provide a sense of connectedness to sick children who may feel otherwise disconnected from their peers” (Battles and Wiener, 2002, p. 62). Particularly impressive was that children who use SBW only four times for one hour or less over a period of 6 to 9 months experienced “less loneliness and appeared to their parents to be less withdrawn than they were before they used it” (Battles and Wiener, 2002, p. 62). Simply knowing that others are out there and can be contacted seems to provide significant comfort for children who are confined.

Bers’ (2007) current work at Boston Children’s Hospital brings the support of technologies to post-organ transplant youth. Preliminary results of the study indicate that the youth benefit from the social extension that the program provides. Additionally, participants discussed how, prior to meeting others in Zora, “they felt isolated because other

peers ‘don’t really get the seriousness of the matter’ and ‘no one really understands’” (Bers et al., 2007, p. 3). The project was described as a success by children, parents, and medical staff, “based on high participation in the Zora virtual world and general satisfaction and changes it brought about in some of the patients” (Bers, 2009). One such change within a participant was a greater feeling of normalcy and belongingness within their social context (Bers, 2009).

Chapter Three: Contexts of the Intervention

The intervention, Zora Camp4All, is a virtual community using the Zora platform created for the campers at Camp For All in Burton, Texas. The program was introduced to the campers while they were attending their week-long session. This thesis, though, examines the effects both camp and the technology, Zora Camp4All, had on the campers; thus, it is important to understand the two contexts of the intervention: the physical, Camp For All, and the virtual, Zora Camp4All.

Context of the Intervention: Camp For All

The adolescent experiencing a serious illness either directly or within the family, is at a greater risk for experiencing higher levels of hopelessness and psychosocial concerns, including behavior problems, poor self-concept and social withdrawal (Briery & Rabian, 1999; Austin, 1989). Summer camps, though, address these concerns through a design that focuses on maintaining normalcy and instilling hope for the child who is critically ill and their sibling (Briery & Rabian, 1999). Camps throughout the country vary in their overall philosophical standing, but promoting a positive adaptation to illness is a common goal within the pediatric camp community. These programs are typically described through the rich recreational opportunities they provide such as horse-back riding, ropes courses, canoes, arts and crafts, theatre, sports, archery, and many, many more. In the past 15 years, much has been learned about the benefits of therapeutic camping for physically ill children, adolescents, and their families. Over 80 camp facilities in the United States have been built specifically for children with chronic and severe illnesses. These facilities create spaces that not only encourage growth and play, but also ensure

state-of-the-art medical care. Similarly, camps for children with disabilities are also on the rise as they supply an adaptive environment that provides opportunities to feel uninhibited. In many cases, these camps are designed to include the campers that would be excluded from mainstream camps, giving them the opportunity to experience camp through the use of specially trained medical staff and facilities.

Camp For All, the facility where this research was conducted, provides an environment that facilitates efficacy in peer relationships, and an atmosphere that is caring and hopeful. Camp For All (CFA) was established as a nonprofit organization in 1993 and is a community-based organization that serves other community-based organizations, agencies, associations, and institutions to meet its mission. The camp facility was planned in collaboration with nineteen health organizations interested in special needs camping. These groups now use the facility and continue to partner with CFA into equal sharing of costs and responsibilities. The site is located on a 206-acre property in Burton, Texas, an 80-mile distance from Houston. The property includes a 7-acre lake with fishing pier and canoe dock, as well as 100,000 square feet of building space that includes a main lodge with a health center, dining hall, kitchen, gathering hall, and administrative offices; 18 cabins; staff and retreat center; gymnasium; lakeside gazebo; nature learning pavilion; chapel; and an arts and crafts barn (please see Appendix A). Additional outdoor facilities include swimming and therapy pools, a horse riding ring and trails, a large tree-house, an amphitheater, challenge (ROPES) course, archery range, athletic field, and nature trails. All buildings and facilities are wheelchair accessible and barrier free.

Camp For All is open year-round and serves some 7,000 people annually. Groups serving people with HIV/AIDS, burns, muscular dystrophy, epilepsy, cerebral palsy, mul-

tiple sclerosis, childhood cancer, spina bifida, asthma, kidney disease, developmental and learning disabilities, hemophilia, lupus, phenylketonuria (PKU), neurofibrosis, hearing and sight impairments, gastrointestinal disorders, cardiovascular diseases, spinal cord and brain injuries, juvenile arthritis, rehabilitative needs, and hospice needs currently attend CFA. Camp For All's philosophy rests within the idea of inclusivity. Through barrier-free activities, all campers are able to participate in a curriculum that aims at providing opportunities to gain "self-esteem and independence while having fun, learning new skills and bonding with others who share their challenges" (CFA).

Experience

During the week that this intervention was conducted at Camp For All, two groups were in attendance (Table 3.1). Camp For All hosts the hematology/oncology departments from the Children's Hospital at Scott and White in Temple, Texas (called Camp Dreamcatcher) and the University of Texas Medical Branch Children's Hospital in Galveston, Texas (called Rainbow Connection). Much of the community is comprised of individuals who are not new to camp and instead consider Camp For All their second home. Many of the counselors and staff are former campers and the directors of the two hospital groups work directly with the families during the year. The two different groups represent two diverse cultures that merge while at Camp For All and the differences between the groups must be taken into consideration when designing an intervention.

Table 3.1 Camp For All Group Comparison

	Groups Hosted at Camp For All from June 28 th -July 3 rd , 2009	
	Camp Dreamcatcher	Rainbow Connection
Hospital	Children’s Hospital at Scott and White	University of Texas Medical Branch Children’s Hospital
Community	Temple, Texas (rural)	Houston and Galveston, Texas (urban)
Staff	Child life specialists, nurses, college students, former campers	Nurses, college students, medical students, former campers
Population	Oncology, hematology, siblings	Oncology, hematology, siblings
Number of Campers	200	180
Staff to Camper Ratio	1:3	1:4
Camper Age Range	6-17	7-16
Ethnicity Breakdown	73% European American 23% African American 4% Latin American	56% Latin American 33% African American 11% European American
Rate of New Campers	32% first-year campers 68% returning campers	37% first-year campers 63% returning campers

Notable discrepancies between the two groups are the number of campers, the breakdown of ethnicities, and the hospitals’ locations. Located in a rural town north of Austin, the Camp Dreamcatcher group is comprised mostly of European American campers who attend small school districts. Rainbow Connection, on the other hand, is comprised of mostly Latin American and African American campers who attend inner-city school districts. These differences will be addressed further in Chapters 7, 8, and 9 as results of data collection paint a better picture of the differences.

As a former employee at Camp For All, I can attest to the spectacular atmosphere of this particular session and the inspirational stories the campers share during their week. The days at camp are filled with dozens of activities, each one aimed at challenging and

empowering the campers (Table 3.2). In addition, the groups are broken into cabins based on gender and age. The cabins, seen as the main unit for community development, are comprised of 10-12 campers and 3-5 counselors.

Table 3.2 Camp For All Daily Schedule

Time	Activity	Location
7:00-7:50	Optional Early Morning Fishing	Fishing Dock
7:50-8:00	Flag-raising	Flag Pole
8:00-9:00	Breakfast and Morning Aerobics	Dining Hall
9:00-10:00	Activity 1: Horses	Horse Arena
10:00-11:00	Activity 2: Cooking	Arts and Crafts Barn
11:00-12:00	Activity 3: High Ropes	Ropes Course
12:00-1:00	Lunch	Dining Hall
1:00-3:00	Cabin Time	Cabins
3:00-3:30	Canteen Time	Gymnasium
3:30-5:00	Pool Time	Pool
5:00-6:00	Activity 4: Canoes	Lake
6:00-7:00	Dinner	Dining Hall
7:30-9:00	Evening All Camp Activity (i.e. Carnival)	Gymnasium
9:00-10:00	Oldest Camper Activity	Gathering Hall

As campers age, their experience shifts at Camp For All because they gain more responsibilities and independence. Oldest campers also have more opportunities during the week to socialize with their peers as their schedules are not as structured as campers within younger cabins. Because of this, the friendships created within the oldest camper community become a vital aspect of the Camp For All culture. Another cherished aspect of the Camp For All culture is the bond created between counselor and camper. The staff at camp work tirelessly to create an environment that is safe and structured for their campers. These aspects of the camp experience was considered when developing the intervention.

Context of the Intervention: Zora Camp4All

The Zora Camp4All virtual world was created as a platform for campers to virtually return to the connections made during their week and continue sharing in the spirit of camp. In order to facilitate this process, several elements were set into place including the technological foundation of Zora Camp4All and the curriculum inspired by Herth's HIP (Herth, 2001).

Technology

The platform utilized for the project, Zora, was developed by Professor Marina Bers (Bers, 2001; Bers, 2007). The Zora platform allows for the development of virtual worlds that are tailored toward multiple research venues including hospitals (Bers, 2008) and academic settings. For this thesis, though, Zora acted as the platform for the development of the virtual Camp For All designed for the campers that attend the facility. Zora is a multi-user graphical environment developed to provide opportunities for participants to construct and explore a virtual camp. Multiple users can interact within Zora through real-time chat and interactive avatars that represent each participant. Within the world, they can build objects, characters, and buildings to develop their virtual space. The program was designed based on the positive technological development framework as it allows adolescents to explore issues of identity. Drawing upon Papert's (1999) Constructionism which "asserts that people learn better when they engage in personally meaningful projects and share them with others," Zora encourages users to play an active role in learning by creating objects that share their stories (Bers et al., 2007). In this manner, while the campers are engaged in constructing representations of their week, they are also gaining technological skills to aid in their development.

Before arriving at Camp For All in June of 2009, I created the virtual camp and constructed main elements of the campsite, including the Camp Gate, the Gathering Hall, and the Lake (Figures 3.1, 3.2, 3.3). These three locations on camp were chosen because they each represent a different, pivotal aspect of the week. For example, the Camp Gate symbolizes the entrance into inclusivity and safety while the Gathering Hall represents the community meeting together. The most important element to the pre-built world was the lake as it hosts the closing ceremony of the week. During this ceremony, campers light a candle to represent their hopes for the future and then together, the candles are cast into the lake. Using these landmarks as a starting canvas, the remainder of the world was left to the campers to create once they began constructing virtually.

Figure 3.1 Pre-Built Camp Gate in Zora Camp4All

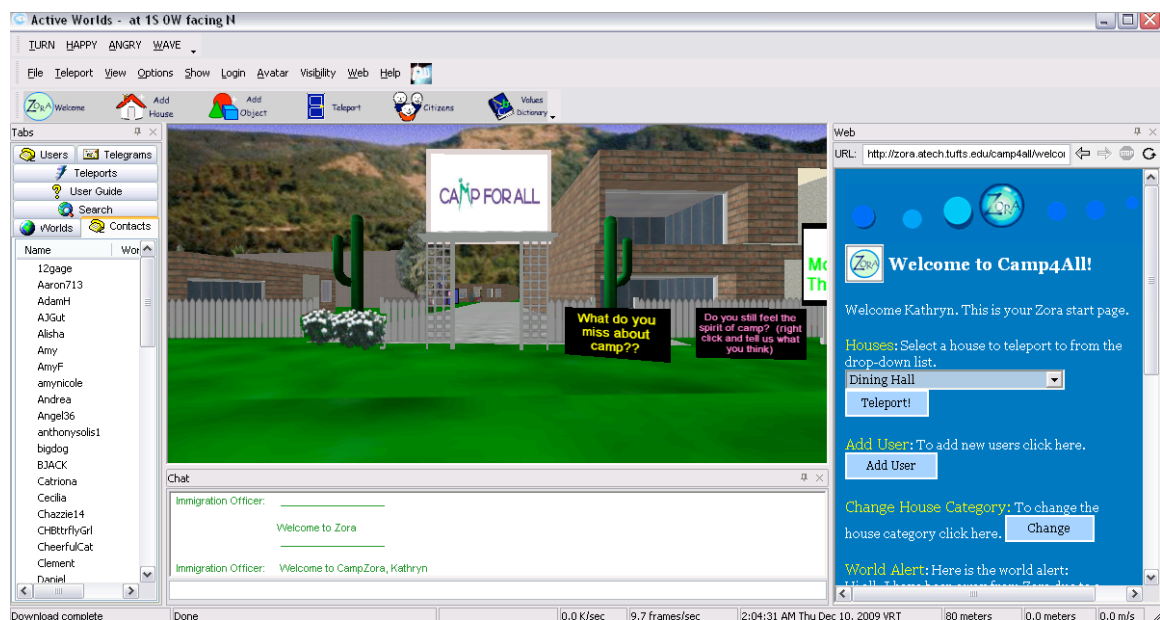


Figure 3.2 Pre-Built Gathering Hall in Zora Camp4All

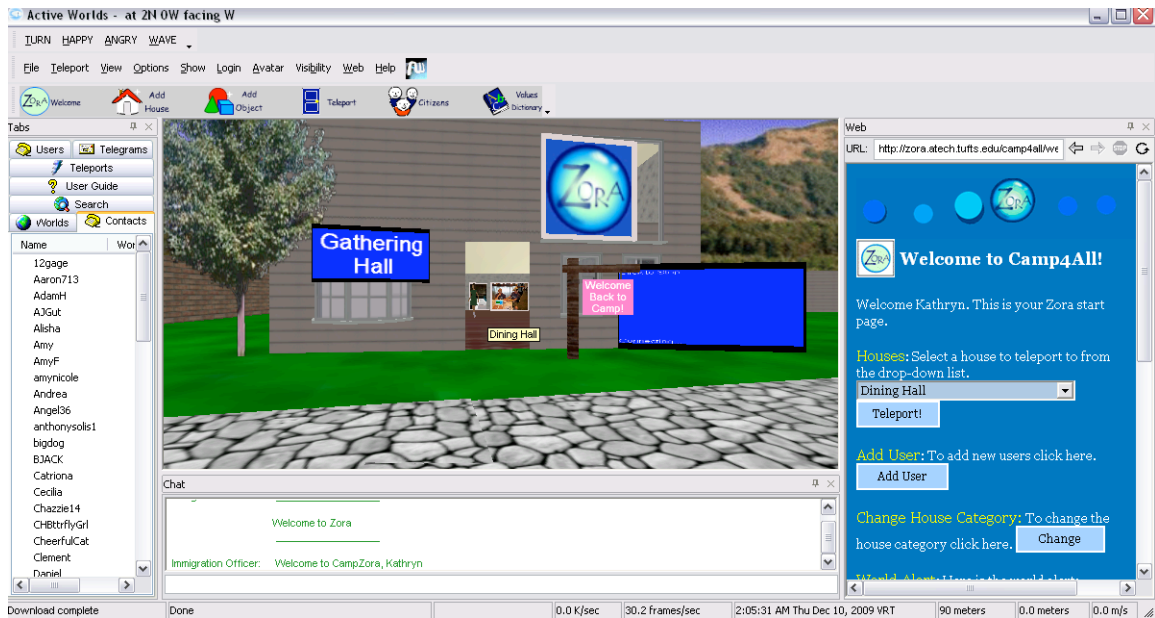
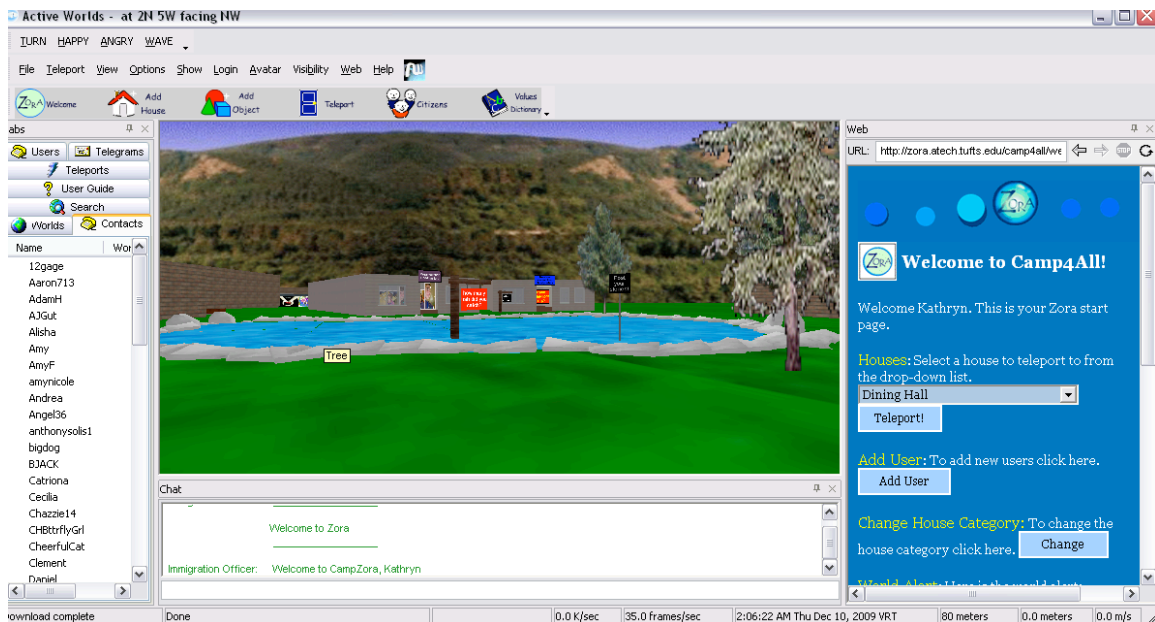


Figure 3.3 Pre-Built Lake in Zora Camp4All



Curriculum

In addition to maintaining connections established at camp, the virtual world was developed to include activities intended to promote hopefulness, social connectedness,

and positive technological development within the group of campers. The Zora Camp4All curriculum enhances hope through the use of specific strategies, delivered during 6 sequential sessions, using a small group interactional format. The curriculum was based on the Hope Process Framework by Ferran et al. (1990), developed from an interdisciplinary lens that integrated data on hope from philosophy, theology, nursing, medicine, psychology, and sociology. Herth (2001) utilized the Hope Process Framework when designing the intervention titled Hope Intervention Program (HIP) which was designed to promote hopefulness in adults with a recurrence of cancer. Herth's (2001) framework was focused on adults and did not include adolescents; thus, the Adolescents Self-sustaining Model created by Hinds and Martin (1988), developed exclusively for adolescents, served as an additional theoretical base for the Zora Camp4All curriculum. In addition to synthesizing these two formats, curriculum goals that addressed social connectedness and positive technological development were also included (Table 3.3). The curriculum does not include the introduction the campers received while they were at camp (explained in Chapter 4), but instead began as the campers returned home.

Session 1 was the introductory session in which participants engaged in becoming reacquainted with one another and participated in activities designed to re-start the process of building a sense of community. Within the session, participants acknowledged how they had been feeling since camp, identified elements of camp that they missed, and began decorating areas of the world with memories from camp. The sense of community was the most fundamental constituent to Session 1 because it is inherent in almost all hope-inspiring strategies, "as community has been found to increase feelings of support

and control, thereby decreasing fear and anxiety” (Herth, 2001, p. 1011; Clark, 1995; Cohen & Ley, 2000).

Session 2 expanded on Session 1 by allowing the campers opportunities to vocalize their favorite memories and activities from camp. Herth (2001) used Session 2 as a format for “searching for hope;” similarly, this curriculum asked campers to recognize elements from camp that made them feel motivated and hopeful, including other individuals (p. 1011). Upon identifying individuals or experiences that contributed to their sense of hopefulness, campers were encouraged to use the memory as a catalyst for positive, goal-oriented thinking. Classification of motivating memories is essential to this curriculum as “identifying the personal meaning in the suffering [leads] to seeing the disease or treatment as a positive influence” (Ferran et al., 1995). Through this, the campers could create stored images and memories to use whenever they felt hopeless.

Session 3 pushed the campers toward solidifying their thoughts for the future through creating objects and a timeline to act as a guide for desired accomplishments. Herth (2001) utilized a “success map” with the adults who participated in the HIP; similarly, the campers were asked to create a check-list of steps leading to their goal. Additionally, the group acted together in completing a goal by designing and building one object to represent hope; the end of the session was planned to discuss how the group came together and completed the goal.

Session 4 brings the camper back to the connections made at camp to once again draw upon the positive memories and images from the experience; as Tracy et al. (1999) explains, “by recalling happy and joyful times, families can focus on positive aspects of the relationships and buffer future difficult times” (p. 122). During this session, campers

were encouraged to identify small joys in life and re-build the moments as a way to gain an appreciation for the creative expressions of hope. In order to emphasize connectedness, campers were also asked to expand on how to help others identify hopeful moments.

Session 5 focused on agency and on how to use the momentum of hopefulness to help others (Snyder, 2003). During this session, campers expanded on how they can provide hope to others and utilize their illness experience as a resource for hopeful thinking. Because hope is interpersonal, it was anticipated that empowering the camper to be the expert on hopefulness would propel the positive mindset into interactions with others (Ferran et al., 1995).

Session 6, the final session, acted as a time for reframing and concluding the experience. Campers were asked to once again list future goals and casually discuss how they will accomplish them. The session was designed to be informal so that identifying goals and envisioning hopeful images would be a relaxed process; this atmosphere to the session was anticipated to reinforce the fact that hopefulness is a practiced mindset that gets easier with time (Hinds, 2004).

While this section was meant to frame the curriculum, Chapter 6 goes into greater detail on the participation levels and the objects that resulted from the activities.

Table 3.3 Zora Camp4All Curriculum

Session	Hope Prompt	Hope Objective	Conn. Prompt	Conn. Objective	Confidence Prompt	Confidence Objective
1	How have you felt since you've been home? What do you miss?	Identifying hope	Decorate Dream-catcher and Rainbow Connection space	Continuing camp comm.	Personal cabin, explore other's cabins, decorate spaces w/ pictures from camp	Learning way around, picture skills
2	How does camp make you feel hopeful? Are you hopeful about the future?	Identifying hope	What was your favorite memory from camp? Who did it include? Send them a note of appreciation.	Narrating comm. values	Add stories from camp to Treehouse walls. Who did it include? Send them a note of appreciation.	Learning way around, message board skills
3	What is a goal you have for the future? How will you accomplish it? Create a timeline for doing so.	Creating pathways for goals	As a group, make an artifact of Hope. What other goals can the group create?	Create group pathways	Create an artifact with assigned values	Assigned values skills
4	Do you still feel the spirit of camp? How can the spirit motivate you and keep you positive?	Creating agency for completing pathways	As a group, create a resource for peers that teaches how to remain hopeful about the future.	Creating positive extended connections	Decorate fire ring with lyrics, songs, and videos from camp. Decorate GH w/ suggestions for staying positive	Uploading skills
5	How can you help inspire others who have been affected by illness?	Displaying agency for others	As a group, create a resource for others that inspires and provides hope	Creating positive global connections	Fill IH with suggestions and ideas for inspiring others	Cont. message board skills
6	What goals will you complete in the future?	Follow-through, goal displays	As a group, create a "group future board"	Visually representing connections	Create and store an "individual future board" in personal cabin	Cont. construction skills

Chapter Four: The Intervention

This chapter will describe the intervention in its entirety from introducing it to the campers at Camp For All to saying “goodbye” during the final session on Zora Camp4All. The facilitation of the virtual world occurred in three phases, from the first consenting process to the final collection of exit data. While Table 4.1 gives an overview of the phases, this chapter will go in-depth on the three phases that contribute to the overall design of the research.

Table 4.1 Overview of Phases

Phase	1	2	3
Dates	May 1 st - June 28 th	June 29 th -July 3 rd	July 4 th - October 1 st
Location	Before Camp	At Camp For All	From Home
Content	Preparation Consenting/Assenting Baseline Measures	Facilitation Sessions Mid-Point Measures	6 week Curriculum 4 week Interruption* End-Point Measures

*Interruption explained in Chapter 6

Phase 1: Pre-Camp and Consenting

In the Spring of 2009, I received institutional review board approval from Tufts University to extend the current Zora program to the population at Camp For All. Following approval, the Camp For All team, lead by director Kurt Podeszwa, and myself planned out the logistical components of the week at camp. Before arriving in Texas for the week of camp, preparations were made to ensure that the process of collecting data would be feasible for the researcher and unobtrusive to the camp staff. Ten computers installed with the Zora program accompanied me to the campsite so that during facilitation sessions, each camper would have their own computer. Families received a “Zora

Camp4All” brochure prior to camp so that during the consenting and assenting process, the families were familiar with the project (Appendix B).

During the first day of camp, June 30, 2009, Phase 1 began. As the campers were getting checked-in, a Zora booth was set up for families to complete the consenting process and for campers to sign the assent form and the code of conduct form. After assenting, the campers received a packet of baseline measures that were completed in a separate, private area. During the consenting and assenting process, the campers also signed an agreement to respect a code of conduct in using Zora Camp4All.

Phase 2: At Camp

While planning the week, the representatives from each camp requested that the research project not cut into any activity time or into meals. In order to respect this wish, the only time that was available was the Cabin Time periods that fell after lunch. These two-hour periods are seen as a break within programming and typically require that the campers rest from their morning. While at camp, the two hospital groups primarily remain separate and thus, during facilitation sessions, I would only see one hospital group at a time. In order to make sure that each hospital group was able to see the program twice, the groups received two hour-long sessions during the week (Table 4.2).

Table 4.2 At-Camp Session Schedule

Time	Date			
	6/31	7/1	7/2	7/3
1:00-2:00	Dreamcatcher Girls (n=11)	Dreamcatcher Boys (n=11)	Dreamcatcher Girls (n=11)	Dreamcatcher Boys (n=11)
2:00-3:00	Rainbow Connection Girls (n=9)	Rainbow Connection Boys (n=9)	Rainbow Connection Girls (n=9)	Rainbow Connection Boys (n=9)

The sessions were intended to teach the campers how to navigate the system so that once they logged in from home, curriculum could begin right away. Unfortunately, in large groups, it was difficult to assist each participant and answer all of the questions. In particular, there were many technical glitches that took time out of the lessons including multiple computers losing internet connection. The campers, though, remained patient throughout the sessions and were eager to continue exploring the program. During these sessions, I learned how important it is to have the support of the camp staff, which will be discussed further in Chapter 10. The figures below provide a glimpse into the set-up of the sessions.

Figure 4.1 Dreamcatcher Boys Session A



Figure 4.2 Dreamcatcher Girls Session B



After each group's second facilitation session, I met one-on-one with each camper to conduct the semi-structured interview. The interviews, examined further in Chapter 5, also provided the campers with the opportunity to provide any feedback or concerns with the program or the facilitation sessions.

At the end of the week, prior to leaving so the campers were not emotionally influenced by good-byes, a second set of measurements were given to assess hopefulness, social connectedness, and technological confidence after the camp experience. Upon leaving for the week, the campers received a CD to install the program on their computers at home. Although all campers had computers at home, computers were also provided at their respective hospitals to ensure access was available for each family.

Phase 3: At Home

Phase 3 included the curriculum within Zora Camp4All. As mentioned in Chapter 3, the groups met online every Tuesday and Thursday for approximately 1-2 hours of curriculum based on Herth's (2000) Hope Intervention Program. This curriculum began as the campers arrived home on July 3rd. Unfortunately, due to my own family emergency, the curriculum was interrupted during the 3rd week and it was paused from July 25th-Sept. 3rd, 2009. Curriculum picked up again from Sept. 3rd-October 1st, completing the six components. Campers were also allowed to meet within the world whenever they chose, not just during facilitated times. The space was theirs to build and make their own, filling it with stories and memories from camp.

At the end of the curriculum during the week of October 1st, participants completed a third set of measurements and participated in an exit interview. This step within the data collection was the most intensive as many of the participants had stopped coming online. Through email, though, I was able to gather 38 of the 40 surveys (95%). The others were completed over the phone at the campers' convenience.

Chapter Five: Methodology

In this chapter, I will discuss the research goals and the subsequent methodology for data collection that was used for the three phases of the research design. In this section, I also include a description of the data-collection tools that were used. Finally, I conclude this chapter with a discussion of the techniques used for data analysis for this research.

Research Goals

Based on the existing literature on the topic of technology interventions, the constraints of the sample population, and my own experience with pediatric camping, I formulated three major research goals: (1) to study if Zora Camp4All can help sustain the campers' hopefulness after their week of camp; (2) to study if Zora Camp4All can help sustain the campers' sense of connectedness after their week of camp; (3) to explore if Zora Camp4All promotes positive technological development within the campers. In addition to these three inquiries, I am also interested in a fourth question: (4) to explore the campers' patterns of usage and satisfaction with the program as an assessment of the program's feasibility. My research methodology was designed based on these four goals.

Overview of Methodological Design

In order to study if the program sustains hopefulness, connectedness, and promotes positive technological development, a mixed methodology was chosen. The intent in using this design was to bring together the "differing strengths and non-overlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small N, details, in depth)" (Creswell, 2007, p.63). For the pur-

pose of this study, I used qualitative methods to validate or expand on quantitative results (Creswell, 2007, p.62). This extension of the methods is important to the goals of the research as the chosen quantitative measures only provide a glimpse into the campers' sense of hopefulness, connectedness, and positive technological development. Qualitative expansion provided insight into Zora Camp4All's role in the quantitative results.

Specifically, for this research I employed the validating quantitative model of the triangulation design as cited by Creswell (2007). The model explains that while both quantitative and qualitative data are collected simultaneously and analyzed separately, the results of the qualitative data are used to interpret the quantitative results. Creswell (2007) explains that the researcher merges the two data sets "by bringing the separate results together in the interpretation" in order to "embellish the quantitative survey findings" (p.64; p.65).

The role of the researcher within the chosen methodology followed the constructivist paradigm in assuming a subjectivist epistemology, one where the researcher and participant create an understanding that they are transactional and interactively linked (Denzin & Lincoln, 1994). The paradigm assumes multiple criteria; the two that are most relevant to this thesis include: 1) trustworthiness and 2) authenticity, where the qualitative trustworthiness replaces the positivist criteria assuming that the objectivity of the researcher is free of bias and self-interest (Denzin & Lincoln, 1994). Considering my previous relationships with the campers and their enthusiasm to "help with the project," it was important to keep the constructivist paradigm in mind as to remain credible and reliable in the transactional behavior with the campers.

Population Sample

In order to participate in the study, campers were in the age range of 13-17 (the developmental stage the program targets) and receive permission from their camp director (some were omitted by the directors due to behavioral concerns). Of the 120 camp attendees, 45 were eligible for inclusion in the study and 40 assented, resulting in a participation rate of 89%. Forty campers between the ages of 13 and 17 enrolled in the project at Camp For All, 22 from Children’s Hospital at Scott and White (Temple, Texas) and 18 from University of Texas Medical Branch Children’s Hospital (Galveston, Texas) (Table 5.1 describes the hospital break-down).

Table 5.1 Hospital-Group Demographic Distribution

	Camp Dreamcatcher N=22 (Temple, Texas)	Rainbow Connection N=18 (Galveston, Texas)
Mean Age	14.6	15.4
Gender Dis- tribution	13 Females 9 Males	10 Females 8 Males
Diagnosis Distribution	9 siblings 3 blood disorder 10 cancer	9 siblings 3 blood disorder 6 cancer
Ethnicity Dis- tribution	16 European American 4 African American 2 Hispanic American	10 Hispanic American 6 African American 2 European American
Rate of New Campers	17 first-year campers 5 returning campers	15 first-year campers 3 returning campers

Twenty-three participants were females and 17 were males. Eighty percent of participants were returning campers. The ethnicity of the sample was 45% European American, 30% Hispanic American, and 25% African American. Of the participants, 45% were siblings, 40% had been diagnosed with cancer, and 15% were being treated for a blood disorder (Table 5.2).

Table 5.2 Diagnosis Distribution within Sample (N=40)

Category	Diagnosis	N (%)
Oncology (N=16)	Stomach cancer	1 (2.5%)
	ALL	7 (17.5%)
	Testicular cancer	1 (2.5%)
	Langerhans cell histiocytosis	1 (2.5%)
	Osteosarcoma	1 (2.5%)
	Brain tumor	2 (5%)
	Liver tumor	1 (2.5%)
	Hodgkin's lymphoma	1 (2.5%)
	Burkitt's lymphoma	1 (2.5%)
Hematology (N= 6)	Hemophilia	2 (5%)
	Sickle cell disease	4 (10%)
Sibling (N=18)	No diagnosis	16 (40%)
	Asthma	2 (5%)

As Table 5.2 describes, the diagnosis distribution within the week was diverse. The large range within the table demonstrates the myriad of concerns that are utilized throughout the week; additionally, the campers are each at varying stages of their illness experience. For example, of the 16 campers who have experienced cancer, 2 were currently within treatment protocol, 14 others were off treatment, and 2 of the campers had experienced recurrence.

Data Collection Sequence

Data collection sequence follows the three phases that were mentioned within Chapter 4. Phase 1 included baseline data collection of each of the scales, the code of conduct, the consent and assent forms, and the demographic form (Appendix C and D). Phase 2 began as camp ended and included the mid-point measurements of the scales along with the semi-structured interview. Phase 3 concluded the project after the six weeks of curriculum with exit scales and an exit interview (Table 5.3).

Table 5.3 Data Collection Timeline

Measurements	6/30	6/31-7/3	7/3	7/4-7/25	absence	9/3-10/1	10/1
	Phase 1	Week at Camp	Phase 2	Curriculum from Home			Phase 3
Code of Conduct	X						
Assent	X						
Demographics	X						
Hopefulness Scale for Adolescents	X		X		X		
Social Connectedness Scale-Revised	X		X		X		
Positive Technological Dev. Questionnaire	X		X		X		
Interview			X		X		

Quantitative Tools

Three scales were chosen to assess the three main goals of the research: the HSA to assess if hopefulness was sustained within the campers, the SCS-R to assess if connectedness was sustained within the campers, and the PTDQ to assess if positive technology development was promoted within the campers.

Hind’s Hopefulness Scale for Adolescents

The first quantitative measure, the Hinds’ Hopefulness Scale for Adolescents (Appendix F), was used to address the study’s first research goal, that the program, Zora Camp4All, sustains the campers’ hopefulness after their week at camp. The HSA contains a 24-item 6-point likert scale designed to measure the degree of positive future orientation that an adolescent feels at the time of the measurement. This scale was chosen because it had been tested by Hinds and colleagues in diverse samples of adolescents, including those who are well, those who are in residential treatment programs, and those experiencing a battle with cancer (Hinds et al., 1999; Hinds et al., 2000). “The internal

consistency estimates have ranged from .82 to .93,” indicating moderately strong reliability.

Lee’s Social Connectedness Scale- Revised

The second scale, the Social Connectedness Scale- Revised (Lee et al., 2001), addresses the study’s second goal, that the program, Zora Camp4All, sustains the campers’ sense of connectedness after their week of camp. The scale (Appendix G) measures the personal attribute reflecting closeness with the social world in general. The items portray a general emotional distance between self and others that may be experienced even among friends or close peers. The measurement is a 20-item 6 point likert scale where higher scores indicate more social connectedness with a possible range from 20 to 120. When Lee et al. (2001) calculated the coefficient alpha, results revealed an alpha of .91, suggesting strong internal reliability.

Bers’ Positive Technological Development Questionnaire

The third scale, the PTDQ, was “constructed based on the PTD framework to provide a way to measure the multifaceted use of technology in learning contexts in a way that is relevant to the 21st century” (Bers et al., 2009, p. 8). The questionnaire is framed by the six C’s of applied developmental science and provides a way to measure change after a technological intervention (Bers et al., 2009). Addressing the study’s third goal, that the program, Zora Camp4 All, can promote the campers’ positive technological development, the PTDQ (Appendix H) contains 29 items on a 5-point likert scale. Results from Bers et al. (2009) support the validity and reliability of the six C’s structure of the PTDQ and confirms “good internal consistency” (p. 15).

Camper Demographic Form

The Camper Demographic Form (Appendix E) was created to gather information regarding diagnosis, camp attendance, and school patterns. The items within the demographic form provide additional variables to test survey results for correlations.

Qualitative Tools

Semi-structured Interviews

Semi-structured personal interviews were conducted both at camp and upon returning home. The interviews contained 5 items addressing the youth's attitude toward hope, 5 items addressing the youth's attitude toward social connectedness, and 5 items that addressed the youth's attitude toward technology (Appendix I). Interviews were audio recorded and transcribed verbatim immediately after. Exit interviews were conducted by telephone. Berg (2007) explains that telephone interviews are "quite productive when they are conducted among people with whom the researcher has already conducted face-to-face interviews or with whom he or she may have developed a rapport during fieldwork" (p. 108). Since existing relationships were held between the interviewer and the campers, it was felt that the telephone would not be a hindrance to the process. The interviews were recorded and transcribed verbatim. Transcripts were coded to identify recurrent themes.

Zora Camp For All Logs

All activity within the virtual world is logged in order to maintain records of what is built and to ensure safety. An online log provides opportunities for both qualitative

(activities and coding of 3D creations) and quantitative data (e.g. log-on frequency and number of objects created). Logs will be parsed to assess the number of objects, characters, and virtual spaces created as well as the number of on-line interactions that occurred during the study. The observation of logs and objects do not directly relate to the research goals but aid in understanding *how* Zora Camp For All sustains hopefulness, social connectedness, and technological confidence.

Data Analysis

For data analysis, I collected three major forms of raw data, as described above: questionnaires, personal interviews, and Zora Camp4All logs. Each of the questionnaires addressed one of the three research goals stated previously. The interviews and Zora Camp4All logs, while contributing to the goal as further validation, also act as a tool for understanding the program's incorporation into the world of pediatric camping and its feasibility for future projects.

The three scales were measured independently for differences across data collection phases employing the Wilcoxon rank-sum test, used instead of Student's t-test because normal distribution could not be assumed. According to Hinds & Gattuso (1991), the Hind's Hopefulness Scale for Adolescents can be completed in 4-9 minutes and scores can range from 6-144, the higher scores indicating higher levels of hopefulness. As noted in Lee et al. (2001), the second measure, the Social Connectedness Scale- Revised consists of all 20 original items (10 positive and 10 negative) "where the negatively worded items are reverse scored and summed together with the positively worded items to create a scale score with a possible range of 20 to 120" (p. 312). Thirdly, the 29-item PTDAQ measures the six C's of Ber's framework, positive technological development, in-

cluding confidence with technology. The variations between scores from each phase of data collection will aid in addressing each of the research goals. The results of these scales was analyzed for correlations with demographic considerations such as diagnosis as well as Zora Camp4All log data including number of log-ins and number of curriculum objectives completed.

All qualitative data including interviews and logs was analyzed using an ethnographic approach aimed at gathering a rich set of data to construct an understanding of how Zora- Camp 4All assimilated into the pediatric camping community. The logs of on-line interaction as well as the interviews were coded for recurrent themes, including those that address hopefulness, social connectedness, technological confidence, and the camper's attitude toward the program. I began the analysis process by coding all the interviews, in Atlas ti 5.0 (a qualitative data analysis software package), and conducted across-case analyses. This process employed Miles and Huberman's (1994) method of using charts and matrices for within-case and across-case analysis. The steps involved *open coding*, *constructing partially ordered code lists*, *conceptual organization*, and *conceptual verification*. Open coding, the initial step, involved coding the interviews with codes that emerge from the data and consist of the respondents own words and phrasing. As is usual with open coding, the process generated an overabundance of codes and coding categories too numerous to analyze. A partially ordered list was created through clustering codes into themes and patterns, a step "productive when the number of cases and/or the data overload is severe" (Miles & Huberman, 1994, p. 246). The next step, conceptual organization, involved conceptualization or the process of uncovering underlying dimensions of the themes by making contrasts and comparisons, noting frequencies

of code occurrences, and organizing the codes into a conceptually coherent system.

Through this process, the codes were narrowed down in order to create a system that was optimally organized. After the conceptual coding system was created, the next step, conceptual verification, involved applying codes to the entire data set to verify patterns and relationships. The final system of charted codes was used to expand upon and embellish the quantitative data.

Chapter Six: Program Usage and Patterns

As phase 3 of the program began, I was unsure of what to expect from the youth. While the enthusiasm was encouraging as I passed out the many installation CDs, and many of the campers referenced using the program once they arrived home (Table 6.1), I knew that busy summer schedules and eventually a new school year would distract them from Zora Camp4All. Upon arriving home on July 4th (the session ended on July 3rd), I immediately checked the logs and was astonished by the number of logins; in the twenty-four hours after camp ended, there had been 147 logins (Figure 6.2). This number was likely high because campers were installing the program, which required them to login multiple times. Regardless, I was encouraged by the positive start to the program.

Table 6.1 References to Zora Usage in Interviews

Questions	Codes	Frequency	Illustrative Quote
Will you use Zora Camp4All from Home?	Yes	35/40	Yea I'll definitely use Zora cause it was pretty cool to be an avatar and I can keep in touch with people.
	No	1/40	I don't think I will cause I am pretty busy and stuff.
	Maybe	4/40	It depends on how much I miss it here I guess you know. Maybe I won't miss it much and I won't need to use it.
Why would you want to use Zora Camp4All?	Maintaining Contact	31/40	Because you can still keep in touch with your friends and be able to contact each other and still talk and stuff.
	Building or Gaming	4/40	Because we can keep doing activities together and keep working together.
	Share Camp Experience	5/40	Because we can remember the funny stuff from camp and you know, post stories about it and stuff.

During the first week of the program, group sessions ranged from 15-18 campers logging on and participating in the chat. These numbers were so high that it became difficult for me to facilitate the curriculum. Nevertheless, I remained encouraged by the

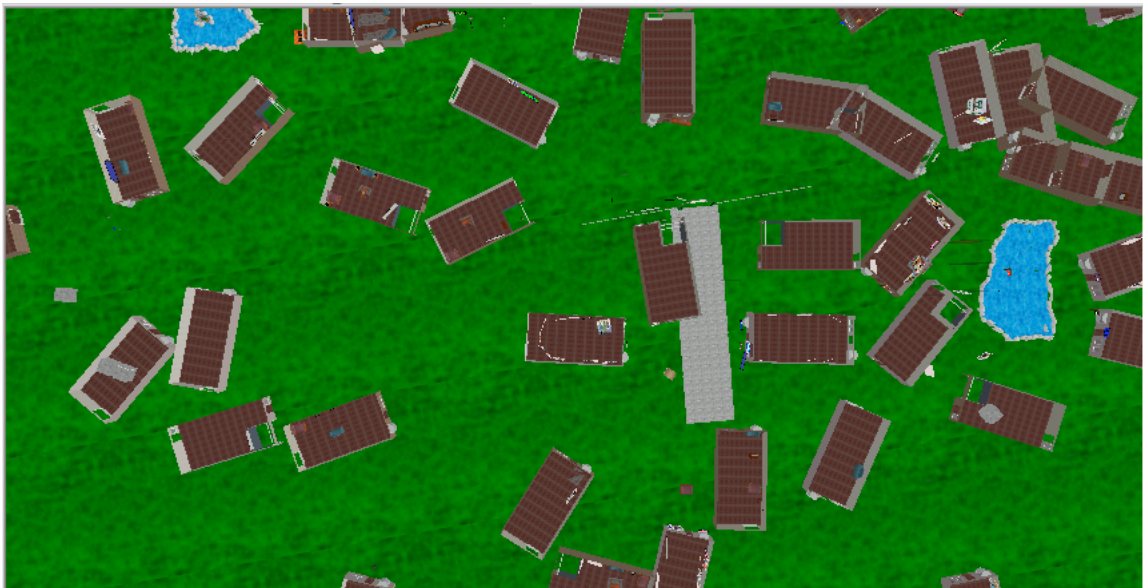
high numbers. By the second week, fewer and fewer participants were joining in on the group sessions and before long, there remained a core group of ten participants who regularly came online during group times.

The ten who consistently completed the curriculum act as their own cohort in the following chapters of data analysis; additionally, the participants who did not follow through with the curriculum act as a natural comparison group to the main cohort.

Participation

Figure 6.1 is an image of the world after the project's entirety; as previously stated, before participants came online, the only objects that were built were the camp gate, the gathering hall, and the lake.

Figure 6.1 Aerial View of Zora Camp4All after Completion



Participation was measured in multiple ways through the Zora Camp4All logs. Overall, the virtual community of Zora Camp4All created over 2240 objects, 1788 lines of chat, over 24 stories, 16 values, and 2 interactive characters. While these variables contribute

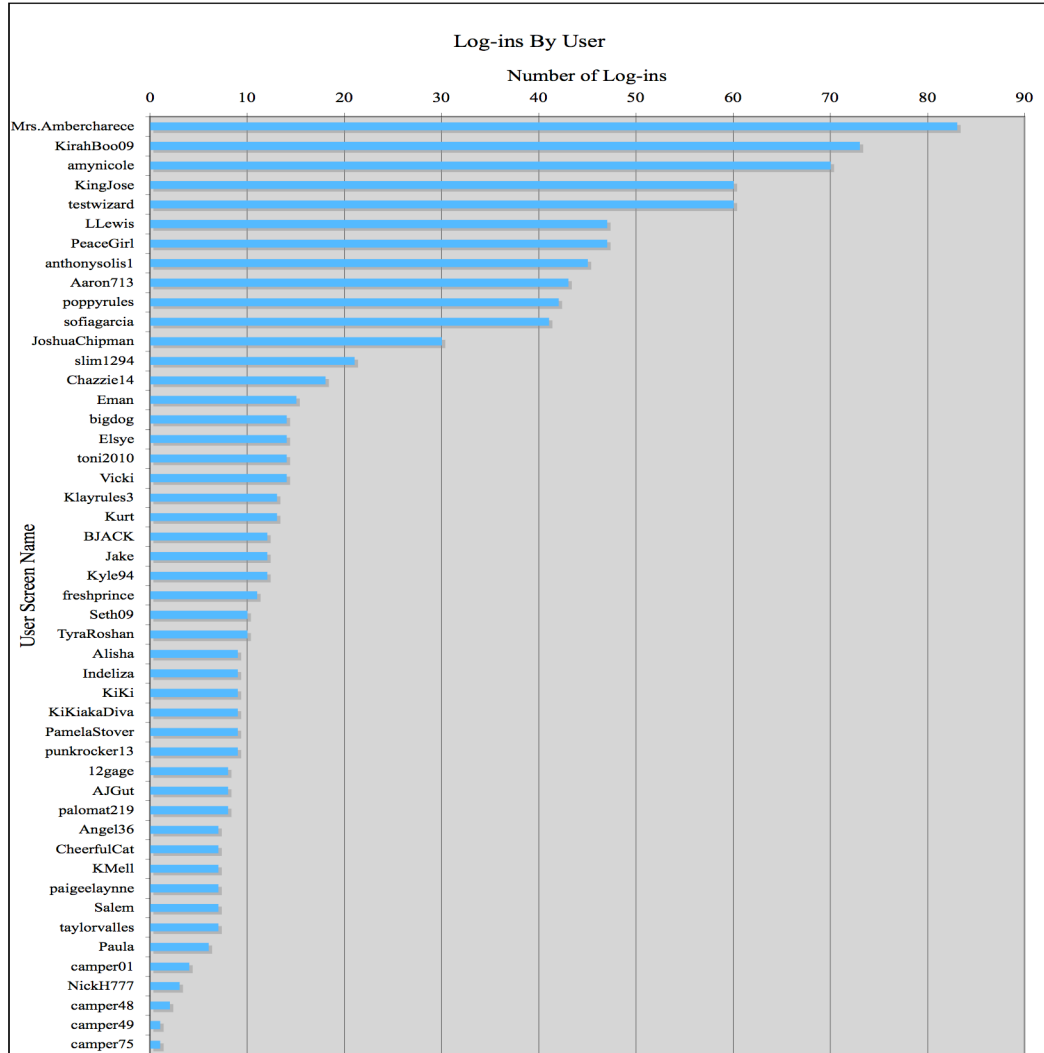
to an understanding of how the world was growing, three variables will be examined within this section that each attest to participation patterns across the sample. The three that will be discussed within this section include number of logins, time spent online and number of completed curriculum objects.

Number of times logging in provides an understanding of user patterns. For example, Figure 6.2 indicates the frequency of logins by user name over the course of the project (from July 3rd-October 1st); the figure shows that user KingJose had one of the highest number of logins. KingJose, though, had never attended a group curriculum session and many of his log-ins occurred late at night when no one else was online. KingJose, while online, would build many objects at a time and averaged 10 objects per login. Later in this chapter, I will discuss user patterns and how they translate into three different categories including the builder, the storyteller, and the chatter, each one describing a different developmental need expressed by the participant. KingJose would be labeled a “builder” as he never chatted with another participant yet filled his house with a plethora of objects that he created.

Amount of time spent online provides depth to the previous consideration. Login frequency, while it depicts the number of times an individual comes online, does not demonstrate if the participant is staying online. Figure 6.3 depicts the varying levels of user time online by the entire group. There are two outliers of individuals who stayed logged in for long periods of time, possibly leaving their computer while they were still within the Zora Camp4All program. For example, Vicki, the participant who spent approximately 120 hours within the program, would open the program at her computer in the morning, leave for school, and then log off in the evening. Additionally, it is impor-

tant to note that the individuals who participated in the curriculum all fell within the range of 12-20 hours spent online.

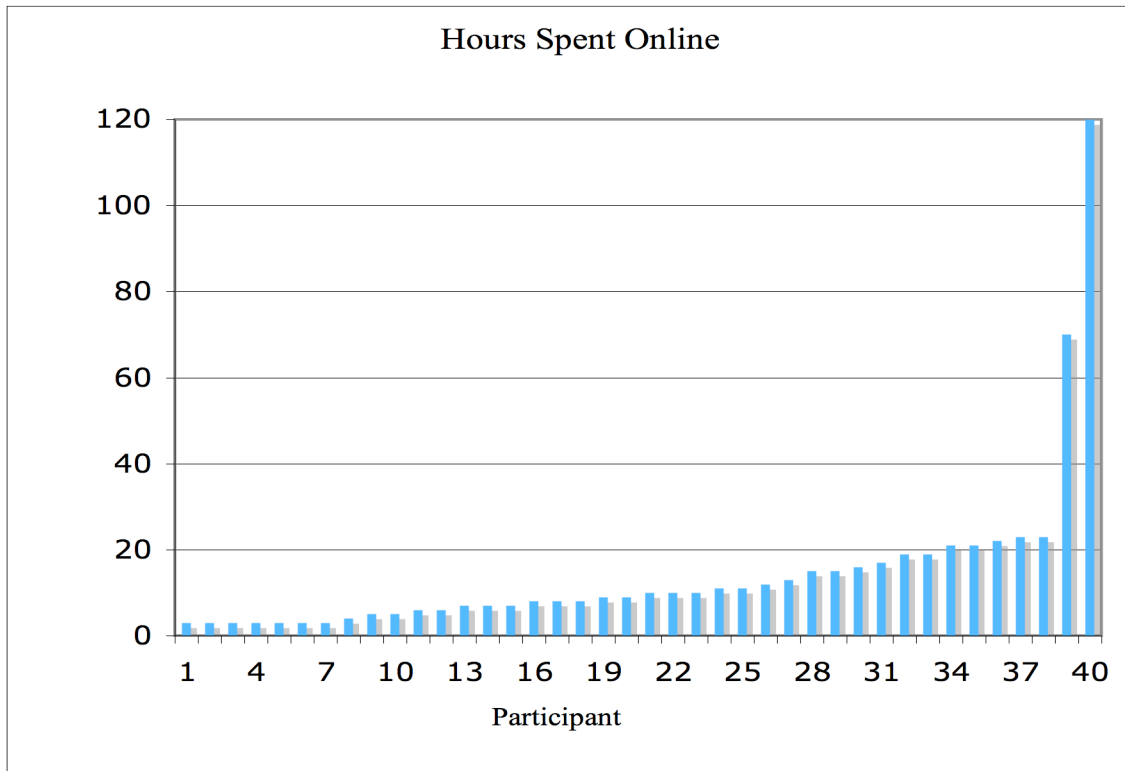
Figure 6.2 Login Frequency by User (N=40)



The average number of hours spent on the Zora Camp4All program between July 3rd- October 1st for all campers was 12 hours. The average time spent online for those who consistently participated in the curriculum was 16 hours. Because the curriculum only required 6 hours online, the nearly 10 hour difference in predicted value and observed value within the curriculum cohort was promising. While these campers only

needed to be online for one hour a week, they were coming online more often and extending the sessions past an hour.

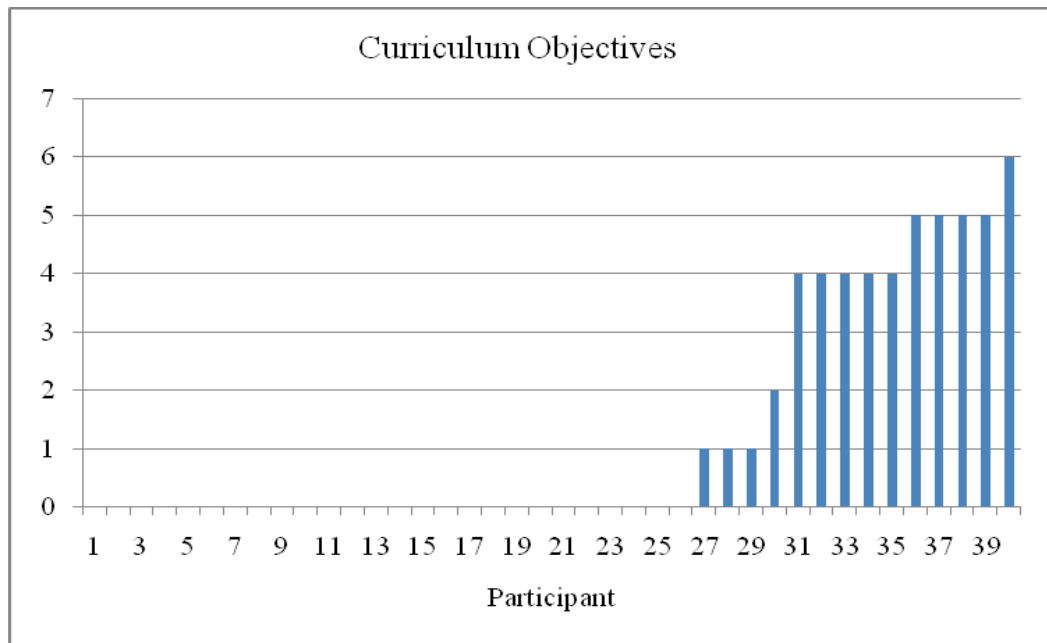
Figure 6.3 Hours Spent Online by User (N=40)



When using the number of objectives completed in the curriculum as a variable, the researcher is able to understand how the content of the program impacts the user. During facilitation, participants seemed mostly drawn to just chatting with one another and maintaining the friendships they had already built. As facilitation continued, a dichotomy formed between the individuals who came online during the group curriculum sessions and those who did not. Figure 6.4 depicts the various levels of completing the curriculum objectives. Twenty-six participants were not actively involved in the curriculum, a participation rate of 35%. Additionally, there were 4 individuals who began the

curriculum and then chose to stop participating, indicating a drop-out rate of 10%. Ultimately, 10 individuals were consistent in coming online and participating in the curriculum. The group varied in completion of the objectives from 4/6 to one participant who completed all 6 objectives. Later in this chapter, I will explore the various objects and conversations that resulted from participation in the curriculum.

Figure 6.4 Number of Completed Curriculum Objectives by User (N=40)



Facilitator's Presence

Prior to each group session, which were held every Tuesday and Thursday from 6-8pm, I would email the group of both participants and parents to remind the campers to come online and work together. I intentionally did not contact campers beyond this means, as I wanted them to feel that it was a program they could turn to if they wanted that connection but not something they should feel obligated to participate in. Because of the previously established relationships I had with many of the campers due to my prior employment at the camp, this was a conscious decision; I wanted to be sure that the

campers knew it would not hurt my feelings or disrupt our relationship if they decided not to join me online.

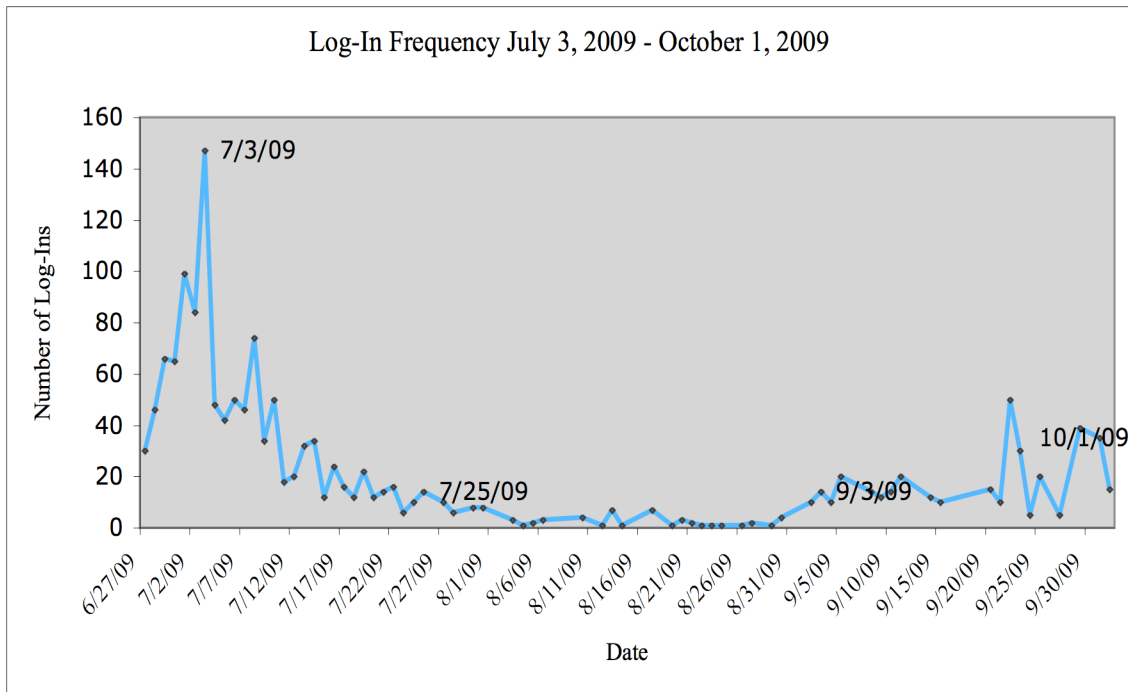
The proactive behavior of the facilitator became more important to the maintenance of the virtual community as the time away from camp increased. On average, I spent ten hours a week either on Zora Camp4All facilitating sessions or chatting with participants within the virtual world. In addition to this value, I also spent approximately three hours a week emailing participants and updating the group on activities.

The emails were a vital part of the program and in my experience, an imperative element for keeping the world afloat. In early August, I experienced a family crisis that required me to leave the project for four weeks while I recovered (from July 25th - Sept. 3rd, 2009). Upon my departure, I emailed the participants to inform them that I would not be online or emailing for the next three weeks. I encouraged them to remain active on Zora Camp4All and to continue with the activities (each camper received an abbreviated copy of the curriculum to follow along). Little did I know that this hiatus would provide a natural comparison to the project as disparities in frequency were noticeable in my absence. Figure 6.2 describes the login distribution across the project's entirety. The lull of logins in the middle of the graph coincides with my month long absence, from July 25th - Sept. 3rd, 2009. Although the project's curriculum was intended for six weeks, I restarted the curriculum once I returned, picking up where we had left off. Ultimately, the curriculum was six weeks in its entirety, the first three weeks from July 3rd - July 25th, 2009, and the second three weeks from Sept. 3rd, 2009 - Oct. 1, 2009.

As stated, because objectives within the curriculum were not completed when I was absent, I decided to extend the program an extra three weeks for those interested in

continuing. This increase in participation is demonstrated on the graph as the peaks located at the end of August.

Figure 6.5 Log-In Frequency Over Project's Entirety



Unfortunately, the school year had also begun for many of the participants at the end of August and I never saw the same participation rates as I did in July. In exit interviews with the ten participants who frequently came online, I asked why they were not inclined to come online during the weeks I was away and Table 6.2 describes the responses. The responses indicate that reasons for discontinuing participation during my departure include a lack of reminders and a lack of facilitator’s guidance.

This occurrence revealed that facilitator’s presence and devoted time to the project has a large influence on participation. While some projects might have the numbers

to be self-sustaining, in a project with less than fifty participants, this lull indicates that the facilitator is the keystone to the virtual community (Battles and Wiener, 2002).

Table 6.2 Explanations for Decrease in Participation (N=10)

Prompt	Code	Explanation	Frequency	Illustrative Quote
Why did you participate less while I was gone?	Reminder Needed	Three participants mentioned that they forgot to come online without the weekly emails	3/10	You stopped emailing so it was harder for me and my mom to remember.
	Presence Needed	Four mentioned that without a facilitator leading the sessions, they were not inclined to continue curriculum	4/10	Uh, I don't know, I guess I just didn't want to start doing stuff without someone guiding me.
	Specific Presence Needed	Three participants mentioned that without my specific presence online, they did not feel safe enough to come online alone.	3/10	I wasn't going to go online without Kathryn! You're the only reason my mom thinks it's safe enough anyways.

Motivations

As mentioned previously, the data derived from the Zora Camp4All logs gives the researcher an understanding of user patterns and how those patterns translate into developmental needs. How a participant chooses to use Zora Camp4All provides a glimpse into the elements of the program that are most fulfilling to the individual; additionally, it provides an understanding of what elements of camp are missed most frequently. After following the campers online, most participants could be placed within one of three categories of usage: builder, storyteller, or chatter (Table 6.4). While some overlapped cate-

gories or moved between each, most remained constant. The remainder of this chapter will explore the patterns of three participants who exemplify these profiles.

Table 6.3 Zora Camp4All User Profiles

Profile	Patterns	Illustrative Example
Builder	<ul style="list-style-type: none"> • Coming online to build up personal cabin • Coming online while others are not on • Rarely chatting while others are on 	Aaron713 only logs in after 4am and primarily constructs one object and then logs off. I have never seen him log in during a group session and yet, he has built many objects.
Story-Teller	<ul style="list-style-type: none"> • Participating heavily in curriculum • Posting pictures and stories from camp • Participating in chats relevant to curriculum 	LLewis was a consistent presence in group times and always eagerly participated in the curriculum, built objects that told stories, and also posted pictures from camp. Once she mentioned that she was really interested in making Zora Camp4All look as much like camp as possible.
Connector	<ul style="list-style-type: none"> • Coming online to meet with others • Rarely builds or participates in curriculum • Decline in use once connections are made 	I noticed that Amynicole and Kyle94 were logging on often together in the beginning. Amynicole would also join in for group times. Kyle94, though, would only come on late at night to talk to Amynicole and then log off once they had finished chatting. Thanks to Zora Camp4All, the two are now “dating” and currently use phones instead of the program.

The Builder: testwizard

A small group of participants mentioned wanting to use Zora Camp4All to build or game (Table 6.1). This was demonstrated within the growth of the world as most of the objects built were ones that were part of the curriculum. There was one outlier in this pattern, though. Testwizard, a 16-year-old male with a history of testicular cancer, committed himself to building a spectacular compound titled “McLovin’s Crib.”

Table 6.4 testwizard's Usage

Number of Log-ins	Number of Chat Lines	Number of Objects Built	Number of Curriculum Objectives Completed	Number of Stories Posted
60	115	405	4/6	0

Testwizard rarely came online during group sessions and if he did, he built quickly and then moved onto a new project at his compound. Testwizard, who wants to be “a computer programmer that designs games,” did much of the building on his own and without assistance from me. In fact, one element of the program is the option to design an interactive object. Without instruction, he taught himself how to create the conversation, a task that typically required multiple tutoring sessions.

The figures provided below give a glimpse at the Testwizard’s remarkable compound.

Figure 6.6 testwizard's Living Room

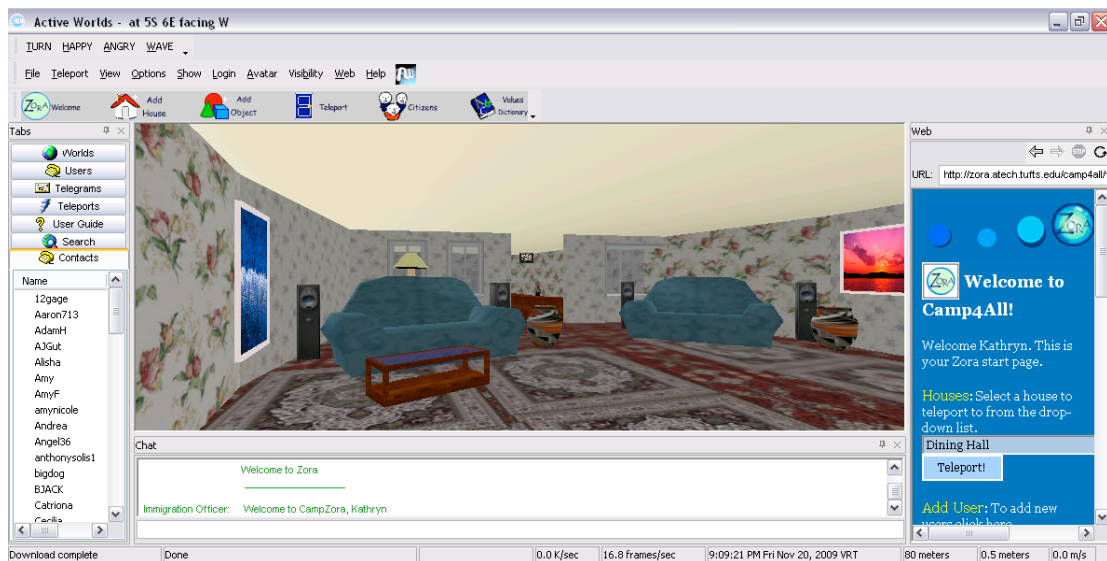


Figure 6.7 testwizard's Bar

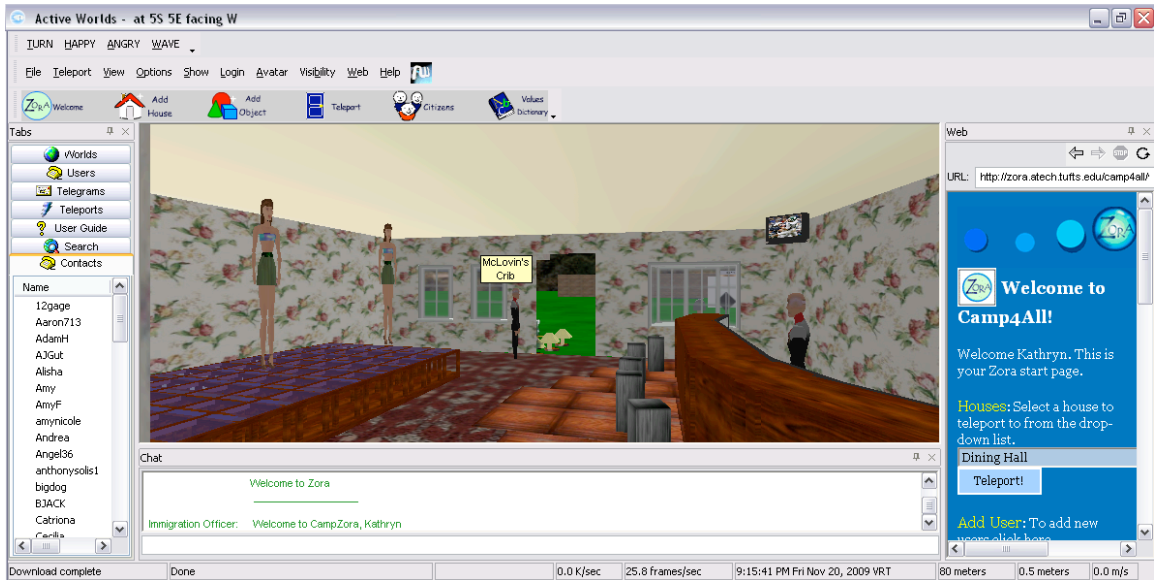
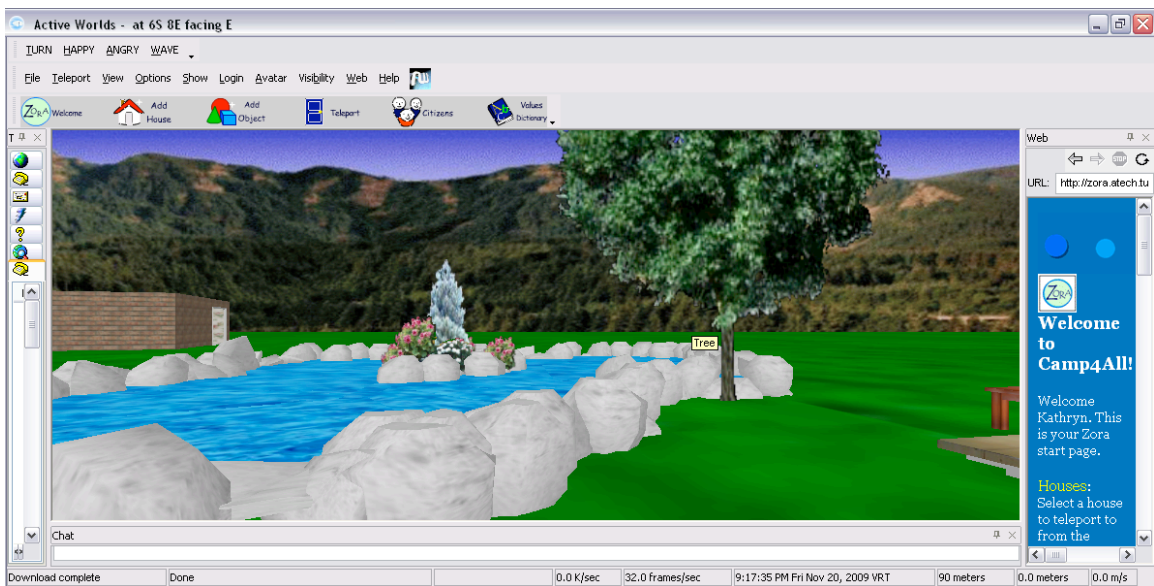


Figure 6.8 testwizard's Park



The Storyteller: softiagarcia

Few campers found the story-telling aspect of Zora to be a large motivation for coming online. Instead, many of them mentioned that they wanted to just chat to share stories, not necessarily build. Sofiagarcia, though, was an exception, and enjoyed the introspective nature of the curriculum and the requests to build stories.

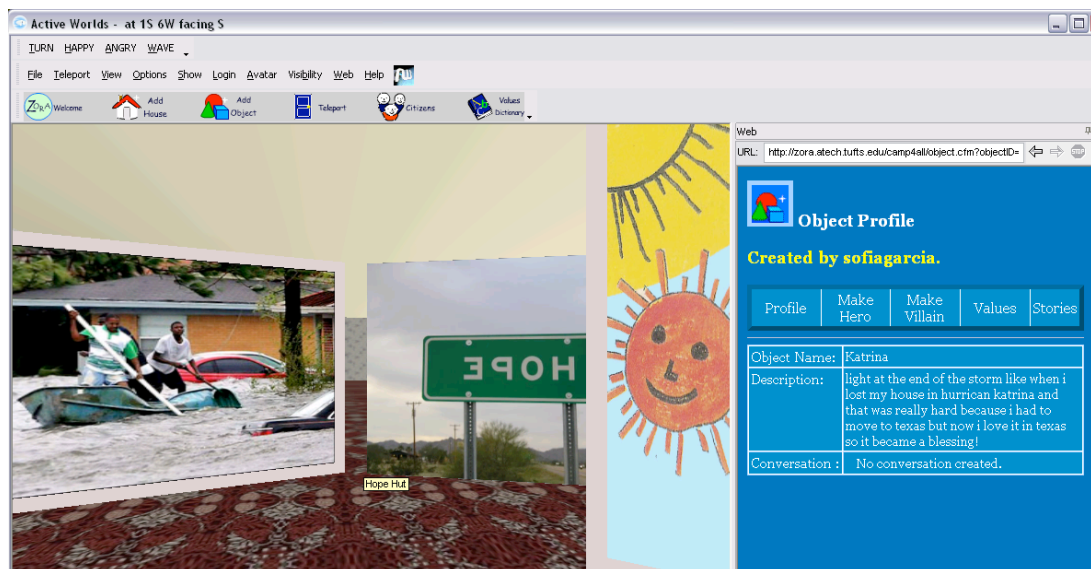
At camp, sofiagarcia was one of the most prominent oldest campers, facilitating some activities for the younger campers as a “Cabin Leader”. Sofiagarcia is the sibling to a younger camper with cancer and prides herself on being a strong support system for her sister. She identifies with the role of caregiver and expanded on this during the curriculum.

While sofiagarcia did chat while she came online, so only logged on to complete the curriculum and subsequently, immediately exited the world. Additionally, she only built what was asked of her and did not extend beyond the curriculum (Table 6.5).

Table 6.5 sofiagarcia's Usage

Number of Log-ins	Number of Chat Lines	Number of Objects Built	Number of Curriculum Objectives Completed	Number of Stories Posted
41	420	17	5/6	8

Figure 6.9 sofiagarcia's Hope Object



The figure above provides a glimpse into one of sofiagarcia’s objects. The story connected to the object is:

Hope is light at the end of the storm like when I lost my house in Hurricane Katrina and that was really hard because I had to move to Texas but now I love it in Texas so it became a blessing!

The Connector: KirahBoo09

As indicated in the interviews, keeping in touch with other campers was a prominent motivation for using the Zora Camp4All program. What I noticed, though, was that chatting was occurring after group times, once I was no longer online. Additionally, these trends faded as the school year began. KirahBoo09 is an example of this behavior and her patterns of usage demonstrate this occurrence (Table 6.6). I never saw KirahBoo09 online during group sessions and the times when she came online were typically late at night; additionally, after a couple of weeks, she stopped logging in. When she did log into the program, she connected with other campers, gathered their phone number or email address, and then continued the connection through those alternate vehicles; in other words, once Zora Camp4All fulfilled her developmental need, she no longer used it.

Table 6.6 KirahBoo09 Usage

Number of Log-ins	Number of Chat Lines	Number of Objects Built	Number of Curriculum Objectives Completed	Number of Stories Posted
73	120	5	0/6	0

The excerpted log conversation below demonstrates the motivations behind KirahBoo09's program usage. She typically was the one to initiate the conversation and the first to mention an alternate way of communication:

KirahBoo09: hEyy!! watZ up?

Kyle94: nm, you?

KirahBoo09: tis is boring when no one is on

Kyle94: yea

KirahBoo09: do u know who dis is

Kyle94: no

KirahBoo09: ok dis shakirah frm cabin 1 lil girl who had da braids u got an aim name?

Kyle94: yea

KirahBoo09: ha do u chatt with dat

Kyle94: yea all the time

KirahBoo09: lets go there now

Curriculum Participation

As previously mentioned 10 individuals stayed with the curriculum and committed to meeting me online once a week for group sessions. This cohort also came online after my absence and began where we had left off in the curriculum. As Table 6.7 describes, only one participant, amynicole, completed each of the curriculum items. Despite this, the other individuals, even if they did not follow through with building each of the objectives, did contribute to conversations regarding the 6 topics and did participate in group brain-storming.

Table 6.7 Participating Cohort Demographics (N=10)

Screenname	Age	Gender	Diagnosis	Camp	Number of Curriculum Objects Completed
amynicole	13	F	stomach cancer	Dreamcatcher	6/6
sofiagarcia	15	F	sibling	Dreamcatcher	5/6
LLewis	13	F	liver cancer	Dreamcatcher	5/6
PeaceGirl	14	F	ALL/BMT	Dreamcatcher	5/6
Mrs. Ambercharece	14	F	bone cancer	Dreamcatcher	5/6
poppyrules	15	F	ALL	Dreamcatcher	4/6
testwizard	15	M	testicular cancer	Dreamcatcher	4/6
Joshuachipman	14	M	Langerhan's cell histocytosis	Dreamcatcher	4/6
Aaron713	13	M	Burkitts lymphoma	Dreamcatcher	4/6
Anthonyso1	13	M	sibling	Rainbow Connection	4/6

It is important to note that this cohort is comprised primarily of participants from Camp Dreamcatcher, the group from the Children's Hospital at Scott and White from Temple, Texas. In addition, only 3 of the 10 members of the cohort were siblings, indicating that program might appeal more to individuals who have experienced an illness. The most obvious exclusion in the group is the absence of individuals with a blood disorder. The scope of this project does not allow for exploring why the curriculum appealed to the campers with cancer; this observation should be considered in future projects, though, as it has implications for curriculum design.

Session 1

As described within Chapter 3, the first session of the curriculum began the identification of the camper's sense of hopefulness. Additionally, it was used as a way to become reacquainted with the community from camp and discuss what elements of the ex-

perience are missed. The following conversation excerpt paints a picture of the conversations that were held during Session 1:

Kathryn: what are some things from camp that made you feel really hopeful and positive?

Amynicole: just hangin with my cabin and stuff cuz they really fun girls

Sofiagarcia: yea like when we snuck into the bathroom really late to paint our nails lol

Amynicole: omg, that was so awesome

Sofiagarcia: and anytime we were all together right

LLewis: I liked our cabin.

Amynicole: me too, we were the best at camp.

Sofiagarcia: I'm sad we dont get to go back next year

Sofiagarcia: summer wont be the same at all

Amynicole: sofia we can go back as staff!!!!!!!!!!!!!!

Session 2

During Session 2, the campers recalled their favorite memories from camp and created objects to depict these moments. In addition, they sent letters of appreciation to people they had identified as contributing to their hopeful memories. Figure 6.10 shows one of the many message boards created throughout the world that hold favorite memories from camp. In addition, Figure 6.11 depicts an image from the Arts and Crafts Barn where campers posted pictures from their favorite activities at camp.

Figure 6.10 Camp Memory Message Board

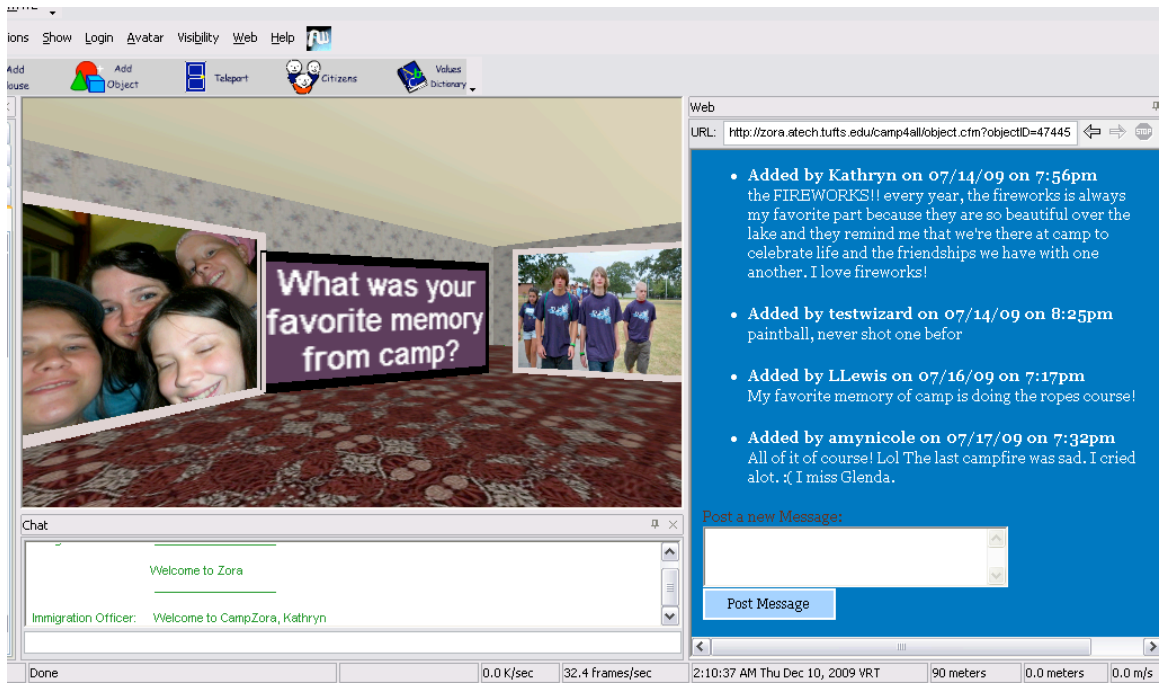
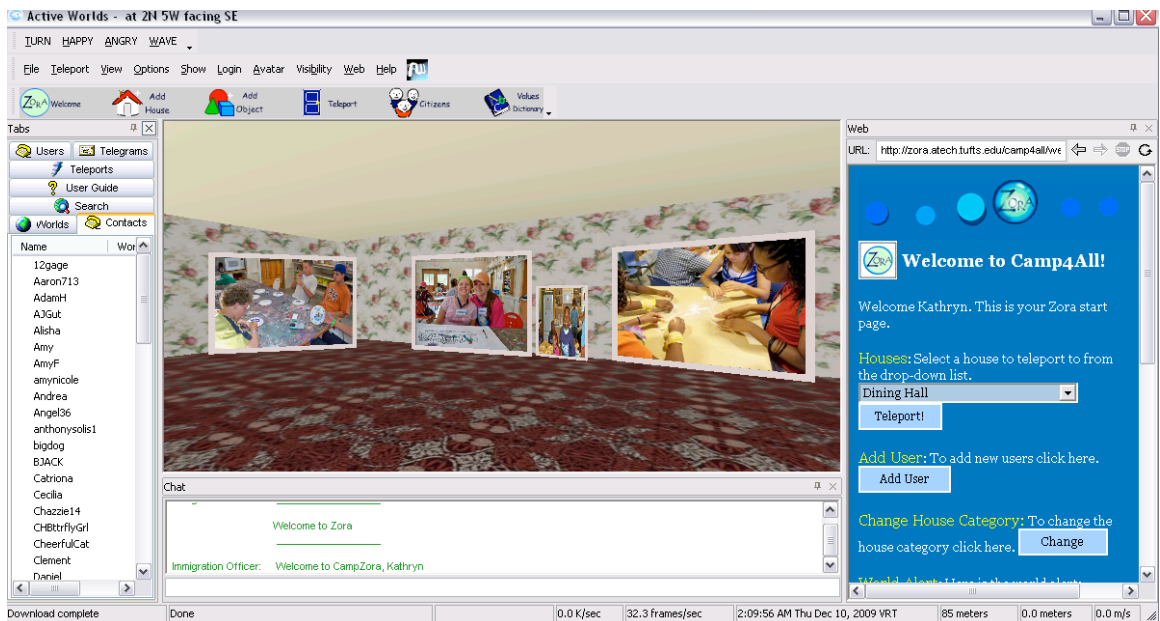


Figure 6.11 Arts and Crafts Barn



Session 3

During Session 3 the campers were asked to create a timeline for completing a goal in the future. Many campers discussed goals they had including going to college, getting married, and getting a good job. Testwizard explained to the group why his goal was so important:

testwizard: my dad lost his job a while back and I have to take care of my brothers a lot now and even tho Im 16 I have to start working and help with groceries and stuff so I really want to get a job with computers in the future that will help me to make sure that my son doesn't have to do the same thing you know

When asked how he would work to accomplish his goal, he mentioned:

testwizard: I guess I need to come on zora more so I get good at building flowers

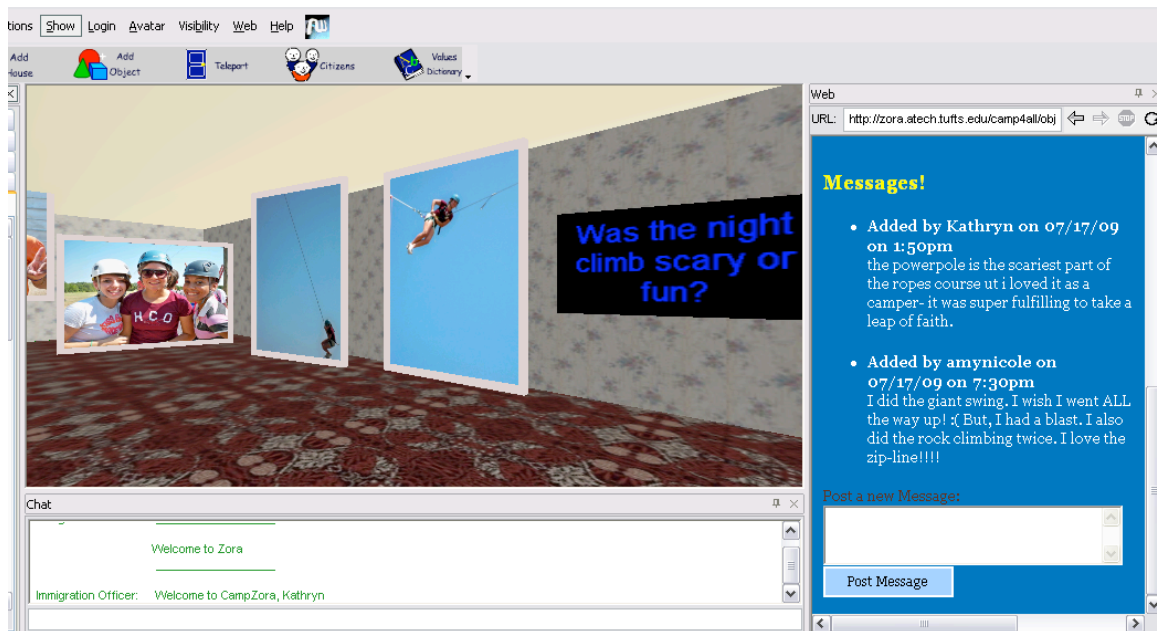
Despite his humor, he did complete a timeline that placed himself on a trajectory to a job in the computer sciences. When I spoke to him next, he had been researching local computer science programs around his hometown.

Session 4

Session 4 asked the campers to remember inspirational moments from camp and discuss how to use them in the future. Together, the group created a resource for peers to teach them how to remain hopeful about the future. The resource was a building that others could visit within Zora Camp4All that contained a dozen images of campers completing the ropes course. Depicted in Figure 6.12, the campers called the building the Rope Shack. During the brainstorming session, they mentioned how the feeling of climbing the rock wall at camp was a favorite inspirational moment because it reminded them about conquering fears. Amynicole explains further:

Amynicole: ppl can go in there when they are down and remember when they were flying and ppl cheered for them

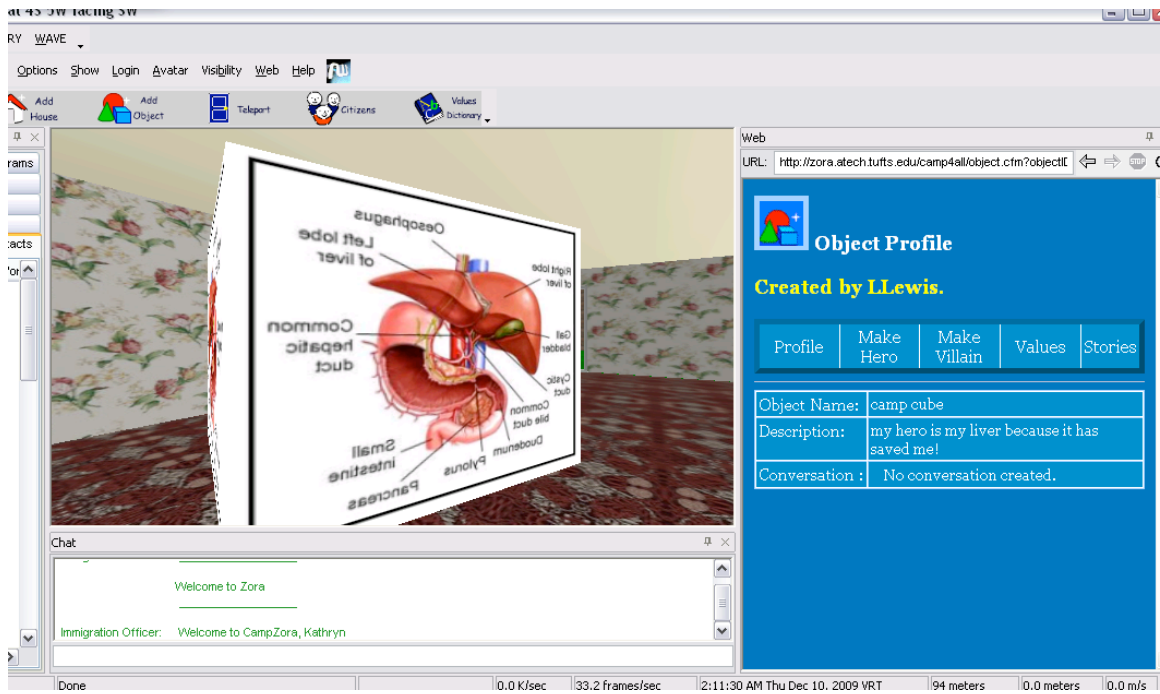
Figure 6.12 The Rope Shack



Session 5

During Session 5, the group spent most of the time recalling their illness experience and why it was so important to them. The group spoke about their experiences and then each person posted a story in their cabin that described how it made them feel hopeful. Figure 6.13 is the image of LLewis' message board where she talks about her liver transplant and how her new liver is now her new hero. This positive attitude about her transplant experience demonstrates how the hopeful mindset can transform a chronic stress into a more positive connotation such as hero.

Figure 6.13 LLewis' Story



Session 6

As noted, Session 6 was the final session of the curriculum and was spent creating hopeful images for the future in the Hope Hut, a building designed to hold all the campers' images of hopefulness (Figure 6.14). To conclude the sessions, the campers talked about how to promote hope in others around them and how to make others smile. Upon ending the program, I encouraged the campers to exchange contact information and to continue the conversation of hopefulness until camp in the summer of 2010.

Figure 6.14 Hope Hut



Chapter Seven: Sustaining Hopefulness

This chapter will explore the state of hopefulness within the campers before and after their experience with both phases of the intervention, their week at Camp For All, and their sessions on Zora Camp4All. The chapter will begin by investigating the presence and varying concepts of hopefulness within the group; secondly, it will examine how using Zora Camp4All affects these two variables; and thirdly, it will examine what factors contribute to a sense of hopefulness.

Hopefulness After Camp For All

The baseline hopefulness scores within the participating campers indicate that the group, as a whole, came to camp with a high average ($M=94.64$, $SD=15.98$) (Ritchie, 2001; Hendrick-Ferguson, 2008; Hinds et al, 2004). Table 7.1 depicts the varying scores of hopefulness within the group. Expectedly, those campers with illnesses came into the camp experience with higher hopefulness mean scores (96.04) than the siblings (92.56). Cantrell and Lupinacci (2004) found in their study of 45 healthy adolescents and 45 adolescents with cancer, that campers who were ill had a significantly higher mean hopefulness score than healthy adolescents. Additionally, those who were new to Camp For All (101.25) had a higher mean than those who had been to camp in the past (93.37).

There is a large gap in scores between the two separate hospitals. Camp Dreamcatcher, the group from the Children's Hospital at Scott and White in Temple, Texas, demonstrated a much higher mean upon entrance into camp than the other hospital (101.54). Rainbow Connection from the University of Texas Medical Branch in Galveston Texas, had a mean (84.31) that was 17.23 points lower than Camp Dreamcatcher; the large standard deviation for Rainbow Connection (± 18.03) depicts the

handful of individuals within the group that act as outliers. Three individuals from Rainbow Connection have scores below 70 points, the clinical level of hopelessness (Hinds, 2000). Because the two camps come from such different environments, one inner city and the other rural, this discrepancy could be a result of demographics. Rainbow Connection, the group that hosts campers from Houston and Galveston sees mostly minority families (Table 5.1) from lower SES neighborhoods (compared to Camp Dreamcatcher). Unfortunately, most research on hopefulness and hopelessness in youth has been conducted on European American middle class families (Grant et al., 2004). A study by Landis et al. (2007) describes adolescent stress and hopelessness in urban settings; the study concludes that chronic, uncontrollable stressors (poverty, community violence) were more highly associated with hopelessness in the sample. Additionally, the study explains that social-support-seeking in low-income urban youth suggests its effectiveness is influenced by the types of stressors (Landis et al., 2007). Although the scope of this project does not allow for further investigation, this large discrepancy provides opportunities for future research as it presents implications for the development of interventions to host multiple chronic stressors, not only illness.

Table 7.1 Baseline HSA Results

Sample	N	Mean	+/-SD
All Campers	40	94.65	15.98
Campers with an illness	22	96.04	14.73
Campers who are siblings	18	92.56	17.99
Campers with cancer	16	96.29	14.95
Campers with a blood disorder	6	95.38	14.21
Camp Dreamcatcher	22	101.54	9.86
Camp Rainbow Connection	18	84.31	18.03
Returning campers	32	93.37	11.97
First-Time campers	8	101.25	16.70

Interview responses provide insight into the campers' own understanding of what hopefulness entails. While this project employed Hind's (2004) definition of hopefulness, the group demonstrates an alternate understanding, one that is more passive and less goal-oriented. For example, testwizard describes hopefulness as simply, "being lucky." Because Hind's (2004) definition of hopefulness was used to inform the intervention and acted as the foundation behind the measurement choice, this distinction implies that this sample's scores may be affected by their perception of hopefulness. Despite this alternate understanding, other research confirms this finding. For example, Juvakka and Kylma (2009) studied the descriptions of hopefulness among 6 adolescents with cancer. The study conveyed that the "hope of the adolescent having cancer is two dimensional:" internal hope directed toward goals and passive hope experienced as an inner resource (p.193).

Interestingly, each camper indicated that they were hopeful for the future, some even describing the events in their future that they are looking forward to. For example, sofiagacia explained, "I'm so hopeful for the future because I know I have a lot going for me and I know that one day I am going to make a great social worker and help kids like me." The three campers from Rainbow Connection who had scores that indicated clinical levels of hopelessness also confirmed that they felt hopeful about their future during interviews; in fact, one said, "Yea, I'm really hopeful and I am excited about the future like college and finding a wife and stuff like that."

In an effort to continue understanding how the campers conceptualize their own hopefulness, the transcriptions were coded for factors that contribute to an adolescents' positive outlook, including events from the past. The interviews convey that the illness

experience, for many patients and the well-sibling, has a positive impact on how the adolescent defines hopefulness.

Table 7.2 Campers' Definitions of Hopefulness

Sample	Coding Category	Codes	Frequency	Illustrative Quote
Campers with an illness (n=22)	Passive	Wanting	11/22	Hope is something that you really want to do and you hope that you get to do it.
		Wishing/Praying	9/22	Like a passion for something or wishing you could do something and it makes you keep going.
	Active	Doing	3/22	You want something to happen and you have the effort to put forth or make it happen.
		Finding	1/22	Hope is something you search for and look to in order to keep your head up high.
Campers who are well-siblings (n=18)	Passive	Wanting	7/18	There's a chance that something good will happen even if at the moment it's not turning out that great, that maybe in the end, it will.
		Wishing/Praying	2/18	Hope is God listening to you and giving you comfort that everything will work out in the end.
	Active	Doing	5/18	Like me, I said that I was going to do it all because you should be positive because you'll get stuff done that way.
		Finding	2/18	Hope is something you find in scary situations to help you get through it all.

Table 7.3 Experiences Contributing to Hopefulness

Sample	Coding Category	Codes	Frequency	Illustrative Quote
Campers with an illness (n=22)	Support	Friends/Family	2/22	My family makes me feel hopeful cause they always have hugs for me.
		Camp	8/22	Camp has enhanced my hopefulness because the community has given me a lot of self-worth. Whenever I am at camp around other kids, I feel like a role model and my hope increases.
	Life Stressor	Illness	20/22	Surviving cancer I guess because the cancer that I had was there for a long time and then it wasn't anymore [...] before, I was really depressed and stuff but now that that happened, I'm hopeful because it was like someone was watching out for me.
		Disaster	1/22	Hurricane Ike where I stayed, the roof caved in so I could have died but everyone in the house that stayed with me survived so I know there's something special about me.
		Death in the Family	1/22	My Peepaw died last year and when that happened, I knew that something good had to come from it so I'm seeing more good now
Campers who are well-siblings (n=18)	Support	Friends/Family	1/18	My friends and the music we listen to because you know some bands are able to put you and in a really good mood and stuff.
		Camp	4/18	Like coming to camp makes me feel hopeful cause camp makes me really happy when I come here.
	Life Stressor	Illness of Sibling	9/18	My sister got rid of her cancer and that makes me feel hopeful because she was able to get through it [...] I am thankful she is doing well.
		Disaster	1/18	Hurricane Katrina made me more hopeful cause I'm always like so bored but when that happened all I wanted was to go back to Louisiana so you never know what you have until its gone.
		Death in the Family	1/18	I used to always be down and stuff but my sister helped me a lot and then she died of cancer so now I know that she is watching me and encouraging me.

Table 7.3 describes the distribution, confirming that 29 of the 40 participants mentioned their experience with illness as a factor contributing to their sense of hopeful-

ness. Throughout the week of camp, staff at Camp For All promote this belief by encouraging campers to make the most of their, or their sibling's, illness experience by using it as a vehicle for advocacy or caring for others. In this sense, the camp environment nurtures an element of hopefulness that the campers have already taught themselves. As mentioned, the camping curriculum provides opportunities for the adolescent to view their illness experience as positive and to make encouraging connections with peers who have similar experiences; thus, we can expect to see an increase in hopefulness after attending the week-long session.

As Table 7.4 describes, the mean scores of hopefulness increase within each of the groups. Despite this increase, the data demonstrates a steady discrepancy between those campers attending Camp Dreamcatcher and those attending Rainbow Connection. Further investigation into the variations in the camp experience for the different demographics should be studied in the future to identify variables contributing to the gap.

Table 7.4 Mean HSA Scores after Camp For All

Sample	N	Mean t-1 (SD)	Mean t-2 (SD)	Δ
All Campers	40	94.65 (15.98)	99.38 (16.07)	4.73
Campers with an Illness	22	96.04(14.73)	99.54(16.32)	3.5
Campers who are Well-Siblings	18	92.56 (17.99)	99.13(16.20)	6.57
Camp Dreamcatcher	22	101.54(9.86)	105.54(11.84)	4
Camp Rainbow Connection	18	84.31(18.03)	90.13(17.44)	5.82
Returning Campers	32	93.37(16.71)	98.8(16.53)	5.43
First Year Campers	8	101.25(11.97)	104.38(11.20)	3.13

Table 7.5 Descriptive Statistics of HSA after Camp For All

Sample	Mean Δ	SD	t-test	P value	95% CI
All Campers (N=40)	4.73	5.31	5.63	<.0001	3.03-6.42

Though the gaps remain, the jump within averages suggests that the camp experience does have a positive impact on the campers' sense of hopefulness. As Table 7.5 describes, the mean hopefulness increase (M=4.73, SD=5.31, N=40) was significantly greater than zero, $t=5.63$, two-tailed $p < .0001$, providing evidence that the camp experience is effective in enhancing hopefulness. When interviewed, the campers explained the various aspects of camp that they felt contributed to feeling hopeful. As Table 7.6 describes, campers are split between the lasting impact of both socialization and activities. This insight informs future research that the combination of both could lead to greater participation within interventions meant to mirror the camp experience.

Table 7.6 Aspects of Camp that Contribute to Hopefulness

Sample	Coding Category	Codes	Frequency	Illustrative Quote
All campers (n=40)	Socialization	Positivity	6/40	We encourage each other all the time like if someone needs help swimming then I encourage them and if someone needs help with cancer I encourage them.
		Friends	9/40	I like the people in my cabin and they are all pretty cool and they make me feel hope to be here.
		Shared Illness Experience	7/40	Just seeing how everyone is here and doing well enough to come to camp is hopeful.
	Recreation	Challenges	7/40	You are challenged here and you do things that I never thought I'd be able to do and that makes me feel like I could do anything.
		Activities	11/40	Well there's the rock climbing and I love swimming and I like horse back riding. So [camp] lets you do lots of fun things.

Hopefulness After Zora Camp4All

This sub-chapter addresses the research question: *how does Zora Camp4All help to sustain the campers' sense of hopefulness after their week of camp?* While the data suggests that camp does have a positive impact on the adolescents' sense of hopefulness, the Zora Camp4All extension of the intervention attempts to produce similar results. Using the natural comparison group that arose through curriculum participation, this section will examine the results of the two main groups, those who participated in the curriculum, hereafter referred to as the "curriculum cohort", and those who did not, the "non-curriculum cohort".

Table 7.7 Program Usage Patterns in Cohorts

Program Usage	Curriculum Cohort (N=10)	Non-Curriculum Cohort (N=30)
Number of Log-ins	113	167
Average Time Spent Online (per person)	16 Hours	12 Hours
Number of Objects Built	1436	804
Number of Stories Created	24	0
Number of Lines of Chat	1163	625
Number of Interactive Objects	2	1

To gain a clear understanding of the usage distinctions between the two groups, Table 7.7 summarizes how the two groups utilized Zora Camp4All. As Table 7.8 conveys, not only were the results maintained, but for some populations, the average increased once again. The table describes that a decrease in hopefulness was observed in two samples, the non-curriculum cohort and the entire Camp Dreamcatcher group. When

looking closely at the results of the two cohorts, it is important to note that the curriculum cohort had a higher hopefulness mean (98.5) at the beginning of the project. This distinction indicates that the program might have been more appealing to individuals who already had a foundation of hopeful thinking patterns. Despite this, the difference within the curriculum cohort between Time-2 and Time-3 (.10) still suggests a positive impact on the campers' hopefulness scores.

Table 7.8 Mean HSA Scores after Zora Camp4All

Sample	N	Mean t-1 (SD)	Mean t-2 (SD)	Mean t-3 (SD)	Δ (t-3 – t-2)
All Campers	40	94.65 (15.98)	99.38 (16.07)	100.08(13.87)	.70
Non-Curriculum Cohort	30	94.03(17.16)	98.90(16.32)	98.77(15.20)	-.13
Curriculum Cohort	10	98.5(11.12)	103.9(12.55)	104(8.15)	.10
Campers with an Illness	22	96.04(14.73)	99.54(16.32)	101.09(11.73)	1.55
Campers who are Well-Siblings	18	92.56 (17.99)	99.13(16.20)	99.25(13.27)	.12
Camp Dream-catcher	22	101.54(9.86)	105.54(11.84)	105(10.83)	-.54
Camp Rainbow Connection	18	84.31(18.03)	90.13(17.44)	93.13(15.20)	3.0

Table 7.9 Descriptive Statistics of HSA Scores after Zora Camp4All

Sample	Mean Δ	+/-SD	t-test	P value	95% CI
All Campers (N=40)	.7	5.31	-.60	.55	-1.67-3.07
Non-Curriculum Cohort (N=30)	.53	7.03	-.47	2.05	-1.72-2.77
Curriculum Cohort (N=10)	.7	4.98	-.45	.67	-2.85-4.25

Table 7.8 explains that the mean hopefulness increase for all campers (M=.7, SD=7.42, N=40) is not significantly greater than zero as the t=-.60, two-tailed p=.55,

making it unable to provide evidence that the Zora Camp4All program enhanced hopefulness within the entire group. The mean hopefulness increase in the non-curriculum cohort ($M=.53$, $SD=7.03$, $N=30$) is also not significantly greater than zero as $t=-.47$, two-tailed $p=2.05$. The curriculum cohort also demonstrated no statistical significance as the mean hopefulness increase in the group ($M=.7$, $SD=4.98$, $N=10$) is not significantly greater than zero since $t=-.45$, two-tailed $p=.67$. Thus, the null hypothesis cannot be rejected and it cannot be suggested that Zora Camp4All promotes hopefulness. Despite this, the hopefulness scores were sustained and the three-week drop that was cited by Hinds (1988) was not experienced. This suggests that Zora Camp4All has a hand in continuing the same hopeful atmosphere witnessed at Camp For All.

Table 7.10 Tested Relationships between Zora Usage and Change in HSA Scores

Zora Variable	Curriculum Cohort	Non-Curriculum Cohort
Number of Log-Ins	$r=+.39$	$r=+.27$
Number of Completed Curriculum Objectives	$r=-.17$	$r=.00$
Number of Objects Built	$r=-.03$	$r=+.01$
Number of Lines of Chat	$r=+.24$	$r=+.21$
Number of Stories Created	$r=+.10$	$r=-.12$
Average Time on Zora	$r=+.23$	$r=.09$

Understanding, though, that many factors contribute to feeling hopeful including events that occur outside of the camping experience including family vacations or the start of the school year, I analyzed the data for correlations between change in hopefulness and activities within Zora Camp4All. As Table 7.10 describes, the data could not confirm that the chosen elements of Zora Camp4All contributed to the change in hopefulness scores. The most noteworthy correlation (.39) was the number of log-ins within the curriculum cohort and the increase in hopefulness; nevertheless, it did not reach statistical significance. However, given the small N, it would be unlikely to find statistical

significance. Additionally, the scope of this project did not allow for testing of additional variables included within the Zora Camp4All virtual community.

Both Phase 2 and Phase 3 interviews were coded to derive an understanding of the campers' opinions on the impact of Zora Camp4All on their hopefulness. When asked specifically about the programs' elements that contribute to hopefulness, the campers indicated a mix between maintaining connections, telling stories, and participating in activities. During the coding process, it was noted that the curriculum cohort had alternate perspectives on what contributed to their sense of hopefulness. The curriculum cohort identified telling stories to be the greatest factor within Zora Camp4All contributing to hopefulness. This finding supports the number of stories created by the curriculum cohort (24) and the number created by the non-curriculum cohort (0) as explained in Table 7.7. Alternately, the non-curriculum cohort who instead used Zora Camp4All as a vehicle for staying in touch indicated, as expected, that maintaining connections was the greatest contributing factor.

This segmentation within the interview results indicates that the curriculum encompassed in Zora Camp4All is more appealing to individuals who value the storytelling aspect of the program. Alternately, those campers whose main priority is maintaining connections may be less inclined to participate fully in the curriculum activities. For example, KingJose, the participant who logged-in most frequently yet never participated in curriculum or built objects, indicated in his interview the following:

I made lots of friends this week and I think Zora will be a way to you know, keep up with them because I don't have like MySpace or anything so this will be good.

Table 7.11 Aspects of Zora Camp4All that Promote Hopefulness

Sample	Coding Category	Codes	Frequency	Illustrative Quote
Non-Curriculum Cohort (n=30)	Connection 83%	Maintaining friendships	4/30	I think that being able to talk with my friends will make me feel better.
		Keeping in touch	21/30	People here are so positive so staying connected with them will make me feel the same atmosphere of camp.
	Story-Telling 13%	Camp memories	1/30	I think sharing memories from the week will help us feel hope.
		Posting pictures	2/30	Sharing pictures and stuff from camp is the best part.
		Hopeful memories	1/30	I guess just talking about the things from our past that are hopeful will help.
	Activities 6%	Building objects	1/30	Creating hopeful things would be pretty cool.
		Programming	1/30	I like working with computers and programming stuff so that part of Zora will help me feel confident and positive and I guess hopeful.
Curriculum Cohort (n=10)	Connection 10%	Maintaining Friendships	1/10	All of my friends here are really hopeful so Zora can keep us together.
		Keeping in touch	0/10	None.
	Story-Telling 70%	Camp memories	2/10	Sharing camp memories is the most hopeful part because we can remember times when we were really happy.
		Posting pictures	2/10	I like being able to make it as positive as camp by posting pictures and stuff.
		Hopeful memories	3/10	Talking about hopeful memories from camp like the campfire and stuff will help us stay in the mood of camp.
	Activities 10%	Building objects	1/10	Building things that can help us in the future will remind us of the encouragement at camp.
		Programming	0/10	None.

The findings from this chapter indicate that it cannot confidently be said that the tested elements of Zora Camp4All contribute to a sustained sense of hopefulness. Correlations were not found within the data indicating a connection between the tested elements of Zora Camp4All use and changes in hopefulness; additionally, the change in hopefulness after using Zora Camp4All was not statistically significant. Despite this, the mean differences do indicate that the hopefulness gained at camp was sustained. Further investigations should be completed to confirm Zora Camp4All's involvement in the sustainability.

This chapter does clarify that there are different patterns of use based on different developmental needs. For example, those individuals who wish to use Zora Camp4All to maintain connections may be less inclined to participate in curriculum. This concludes that other elements within Zora Camp4All such as chatting could contribute to the campers' positive outlooks on the future. It especially also suggests that interventions employing not only curriculum but also including times for pure socialization are important to this population.

Finally, this chapter conveys some overarching concerns that coincide with current research in the field. The discrepancy between hospital groups confirms that additional chronic stressors such as low-income urban environments must be taken into consideration when developing an intervention that hosts diverse demographics. Secondly, the gap between those campers who are ill and their siblings verifies that the sibling experience is an arena for future research and intervention implementation.

Chapter Eight: Sustaining Social Connectedness

This chapter will explore the presence of social connectedness among the campers before and after their experience with both phases of the intervention, their week at Camp For All, and their sessions on Zora Camp4All. The chapter will begin by investigating concepts of community within the group; secondly, it will examine how using Zora Camp4All affects the social connectedness variable; thirdly, it will examine what factors contribute to a sense of connectedness.

Social Connectedness after Camp For All

The baseline scores of the group provide insight into the campers' sense of connectedness as they began camp. Table 8.1 describes the baseline connectedness scores within the group and shows that the scores, while within normal range, are overall lower than the documented averages which rest between 85 and 105 for adolescents without an illness (Lee et al., 2001; Lee & Robbins, 1995). As was mentioned within the hopefulness results, campers who were siblings rated lower than campers with illnesses. Also, campers from Rainbow Connection (low-income, urban youth) demonstrated a lower mean score (74.94) of social connectedness than those campers from Camp Dreamcatcher (85.38). There were four outliers, 10% of campers who were classified as socially disconnected (mean item score less than 3.5), each of which were members of the Rainbow Connection group (Lee et al., 2001). Meyer et al. (2008) explain that connections with others have more risk factors for ethnic minority youth and youth of lower income because chronic stressors such as prejudice or poverty sustain isolation instead of connection; thus, for disadvantaged youth, there is more stress and fewer coping resources such as

social connections. This distinction could be an explanation for the scores of disconnect; additionally, it calls for a sensitivity to this distinction during community growth opportunities at Camp For All such as teambuilding programming (i.e. the ROPES course) and cabin community activities.

Table 8.1 Baseline SCS-R Results

Sample	n	Mean	SD
All Campers	40	81.20	18.31
Campers with an illness	22	82.63	20.99
Campers who are siblings	18	79.06	13.71
Campers with cancer	16	83.24	22.34
Campers with a blood disorder	6	84.00	19.18
Camp Dreamcatcher	22	85.38	17.50
Camp Rainbow Connection	18	74.94	18.21
Returning campers	32	81.93	18.99
First-Time campers	8	82.75	12.51

While the survey demonstrates quantitatively that 90% of the youth attending Camp For All maintain a healthy sense of connection overall, I wanted to look more closely at their sense of connectedness during their week at camp. During Phase 2 interviews, campers were asked to describe the community at Camp For All and indicate whether they felt part of the community. Table 8.2 conveys the varying definitions of camp community within the camper population. Each camper (n=40) indicated that they felt like they were part of the camp community. Only one individual described hesitance:

I would say that I'm part of the community but it's my first year here but I already feel like I am so I must be. I think at the end of the week I'll really feel like I belong here.

This individual was also one of the outliers who demonstrated social disconnectedness within Rainbow Connection.

Table 8.2 Campers' Definitions of Camp Community

Sample	Code	Frequency	Illustrative Quote
Campers with an illness (n=22)	Acceptance	8/22	I feel like I'm part of a community here cause I'm never excluded at camp because here everyone has your back and you're accepted.
	Friendships	2/22	You make friends for life at camp cause you do so many things together and the people here try to make sure that you're you know, united and stuff.
	Family	3/22	It's safe here so it feels like family.
	Shared Illness Experience	9/22	Community here is about just chillaxin' and bein' with people who understand what you're going through.
Campers who are well-siblings (n=18)	Acceptance	7/18	Everyone is really open at camp because it's such a positive place [...] so it's like a place where you don't stare at other peoples scars and stuff you just be their friend.
	Friendships	3/18	The other campers make it a community because we all become friends here even if we would never be friends outside of camp but here we're all equal.
	Family	1/18	Everyone here is like a family because we've all been through things hard times together.
	Shared Illness Experience	7/18	Having other siblings who know what its like is what makes it feel like a community because I have someone to talk to.

After the camp experience, the campers' overall sense of connectedness did increase. Table 8.3 describes the change in connectedness from the beginning of the week to the end of the Camp For All session. The data demonstrates that Camp Dreamcatcher, despite having high social connectedness means at baseline, experienced the greatest mean increase in connectedness (5.87); additionally, campers from Rainbow Connection, despite having the lowest mean, had the smallest mean difference. This raises questions about the different experiences of the two groups. Even though they were at camp during the same week, the two communities seem to have experienced varying community growth. Alternately, the camp programming might be more appealing to individuals who

desire social connections and who participate in the week with the desire to create friendships and a sense of community.

Table 8.3 Mean SCS-R Scores after Camp For All

Sample	N	Mean t-1 (SD)	Mean t-2 (SD)	Δ
All Campers	40	81.20(18.31)	86.075(19.65)	4.88
Campers with an Illness	22	82.63(20.99)	87.79(21.25)	5.16
Campers who are Well-Siblings	18	79.06(13.71)	83.50(17.33)	4.44
Camp Dreamcatcher	22	85.38(17.51)	91.25(18.95)	5.87
Camp Rainbow Connection	18	74.94(18.21)	78.31(18.62)	3.37
Returning Campers	32	81.93(18.99)	87.17(20.08)	5.24
First Year Campers	8	82.75(12.51)	87.50(15.56)	4.75

Table 8.4 Descriptive Statistics for SCS-R Scores after Camp For All

Sample	Mean Δ	+/-SD	t-test	P value	95% CI
All Campers (N=40)	4.88	5.99	-5.1	<.0001	2.96-6.79

Table 8.4 explains that the mean connectedness increase for all campers (M=4.88, SD=5.99, N=40) is significantly greater than zero as the t=-5.1, two-tailed p<.0001, suggesting that Camp For All enhanced connectedness within the entire group. Because the change in connectedness is statistically significant, I explored the interviews to understand the elements of Camp For All that contribute to this enhanced sense of community.

When the campers were asked which elements of camp contributed to their sense of social connectedness, most cited the social relationships established while at camp. Although it was rare, some campers mentioned the activities designed to create community within Camp For All's programming such as PeaceGrl's example:

I think camp makes me feel like part of a community because like we get to party and stuff like that and then it get more serious like talking about who's passed

away and stuff like that and it's like the community works together as one not one by one.

Table 8.5 Aspects of Camp For All that Contribute to Community

Sample	Coding Category	Codes	Frequency	Illustrative Quote
All campers (n=40)	Socialization (n=30)	Mentorship	3/40	The counselors are cool and really funny and they help you open up and feel a part of the cabin.
		Friendships	11/40	Since there's more older kids around you can talk to people about stuff that you couldn't talk about around little kids and it allows you to make friends.
		Shared Illness Experience	9/40	Everyone is here because everyone has experienced something like cancer or sickle cell and you know that makes you feel closer to someone to have that kind of shared experience or whatever you call it. I think the connections are on a deeper level.
		Acceptance	7/40	Here you get to be whatever you want and people don't judge you so that makes it feel like we're family.
	Recreation (n=10)	Challenges	2/40	Going through the experiences like cancer together makes us a family but then coming here and going through things like the ropes course together just all makes us realize how strong of a community we are.
		Camp Spirit	3/40	The way we do everything together like the way we do the flag raising every morning and that stuff.
		Activities	5/40	It's just fun. That's why.

Seeing that Camp For All might contribute to a heightened sense of connectedness within the group, I set out to mirror the aspects of Table 8.5 within the Zora Camp4All experience. Although the curriculum itself was already set, emphasizing socialization and a continued connection became a prominent consideration while facilitating the sessions. In addition, I encouraged the campers to find other modes of communi-

cation outside of Zora Camp4All to make sure that communication continued after the world closed in October of 2009.

Social Connectedness After Zora Camp4All

My research goal is: *can the Zora Camp4All intervention sustain the sense of connectedness gained at camp*; thus, this section will explore the data that was collected after the intervention’s completion. After the curriculum within Zora Camp4All, the campers’ sense of social connectedness continued to grow (see Table 8.7). Overall, the participants’ mean score increased 1.08 points. Additionally, the group that came into the project with the lowest social connectedness scores, Rainbow Connection, increased 1.69 points.

Table 8.6 Program Usage Patterns in Cohorts

Program Usage	Curriculum Cohort (N=10)	Non-Curriculum Cohort (N=30)
Number of Log-ins	113	167
Average Time Spent Online (per person)	16 Hours	12 Hours
Number of Objects Built	1436	804
Number of Stories Created	24	0
Number of Lines of Chat	1163	625
Number of Interactive Objects	2	1

The data also shows that participating in the curriculum did not set up the campers for a greater increase in connectedness; instead, the non-curriculum cohort experienced a greater increase in mean scores (1.24). This could imply that connectedness is a result of

social activities beyond curriculum such as chatting. As is demonstrated within Table 8.6, the non-curriculum cohort completed a considerable amount of chat despite not having a prompt or a large-group format. These moments of often one-on-one conversations could have been the catalyst for experiencing a sense of connection to others from the camp community. Additionally, as was explained in Chapter 6, many of the campers who used Zora Camp4All as a communication tool also found alternate ways to communicate with their fellow campers; these extended avenues for chat could also be a mediating variable to their sense of community.

Table 8.7 Mean SCS-R Scores after Zora Camp4All

Sample	N	Mean t-2 (+/-SD)	Mean t-3 (+/-SD)	Δ
All Campers	40	86.075(19.65)	87.15(19.33)	1.08
Non-Curriculum Cohort	30	83.93(19.86)	85.17(19.65)	1.24
Curriculum Cohort	10	92.5(18.47)	93.10(17.95)	.60
Campers with an Illness	22	87.79(21.25)	88.71(21.24)	.92
Campers who are Well-Siblings	18	83.50(17.33)	84.81(16.42)	1.31
Camp Dreamcatcher	23	91.25(18.95)	91.92(18.96)	.67
Camp Rainbow Connection	17	78.31(18.62)	80.00(18.14)	1.69

Table 8.8 Descriptive Statistics for SCS-R Scores after Zora Camp4All

Sample	Mean Δ	+/-SD	t-test	P value	95% CI
All Campers (N=40)	1.08	2.27	-2.99	<.005	.35-1.80
Non-Curriculum Cohort (N=30)	1.23	2.54	-2.66	.01	.28-2.18
Curriculum Cohort (N=10)	.6	1.07	-1.77	.11	-.17-1.37

Table 8.8 explains that the mean connectedness increase for all campers (M=1.08, SD=2.27, N=40) is significantly greater than zero as the t=-2.99, two-tailed p<.005, suggesting that the Zora Camp4All program enhanced connectedness within the entire group. The mean connectedness increase in those who did not participate in the curriculum

($M=.1.23$, $SD=2.54$, $N=30$) is also slightly greater than zero as $t=-2.66$, two-tailed $p=.01$. The curriculum cohort, alternately, did not increase in connectedness within the group ($M=.6$, $SD=1.07$, $N=10$) is not significantly greater than zero since $t=-1.77$, two-tailed $p=.11$. These findings suggest that Zora Camp4All plays a role in sustaining social connectedness amongst the entire group. While the lack of statistical significance within the curriculum cohort could be a result of the small N , it might also suggest that the curriculum is not the source for the sense of connectedness amongst the group.

Table 8.9 Correlations between Zora Usage and Change in SCS-R Scores

Zora Variable	Size
Number of Log-ins	$r=+.10$
Number of Completed Curriculum Objectives	$r=-.23$
Number of Objects Built	$r=-.23$
Number of lines of Chat	$r=-.14$
Number of Stories Created	$r=+.15$
Average Time Online	$r=.03$

In order to understand the elements within Zora Camp4All that might contribute to the increase in connectedness, correlations between Zora Camp4All usage and change in social connectedness were calculated; none were statistically significant (see Table 8.9). This along with the descriptive statistics implies that none of the measured variables are associated with the campers' sense of connectedness. Further research should explore alternate variables.

Interviews were assessed to determine if the campers' voices could clarify the elements within the program that might aid in feeling connected. Table 8.10 describes the various responses, most of which are centered around the need for social communication. In fact, 90% of those participants within the curriculum cohort mentioned communication as the key to remaining connected.

Table 8.10 Aspects of Zora Camp4All that Promote Community

Sample	Coding Category	Codes	Frequency	Illustrative Quote
Non-Curriculum Cohort (n=30)	Communication 83%	Talking to friends	5/30	Being able to pick up conversations with my friends where I left off is pretty cool.
		Sharing about self	20/30	It's a place I can find out how everyone is doing and tell others about my life and I think it will keep the family going.
	Activities 17%	Posting Pictures	1/30	I like that you posted pictures of us because it made me feel like I already belonged there and that it was already a community.
		Building	4/30	You can build things that remind you of the community and your friends so you don't forget.
Curriculum Cohort (n=10)	Communication 90%	Talking to friends	5/10	I think that using Zora as a way to talk with my friends and get together is going to be awesome and will keep the community together.
		Sharing about self	4/10	Just knowing that if I ever feel lonely I can go online and talk to someone from camp and learn about them is cool.
	Activities 10%	Posting Pictures	1/10	I want to put pictures all over my house of my friends from camp so that they can remember camp.
		Building	0/10	None.

The increase in social connectedness among members who either did not use Zora Camp4All or used it as a vehicle for maintaining friendships demonstrates that the curriculum may not have been the source of connection amongst those who participated. Instead, the use of Zora Camp4All to continue conversations begun at camp may be the element that is most important to the campers and their sense of community. Likewise, interview responses demonstrate that the key to remaining a “camp family” is through communicating together, not necessarily building together. In Chapter 7, many of the campers referred to socialization as the keystone to remaining hopeful. Additionally, for

the non-curriculum cohort, this facet of the Zora Camp4All program was essential to maintaining the positivity from camp. Thus, these results suggest that heightened socialization within the virtual world is desirable for both sustaining hopefulness and connectedness.

While this chapter suggests that Zora Camp4All promotes social connectedness within the group, it cannot confirm any particular tested element within Zora Camp4All that contributes to the sustainability and in some cases, increase in social connectedness. The statistical significance of the increase, though, does suggest that future research should be conducted to confirm the role of Zora Camp4All within the sustainability.

Additionally, this chapter expands on the concerns mentioned within Chapter 7 as discrepancies between the two hospital groups continue. These findings call for studying the differences between the two camp experiences, those for campers of Camp Dreamcatcher and those for campers from Rainbow Connection to aid in determining an area for improvement. Additionally, the discrepancies between those campers who are siblings and those campers with an illness remain. Future research should be directed toward social support for the sibling population.

Chapter Nine: Sustaining Positive Technological Development

As a framework informing this intervention, positive technological development was a main ideation behind the curriculum. The use of the Zora Camp4All program both at camp and during the curriculum was hoped to aid in the adolescents' overall comfort, skill, and appreciation for positive technologies. This chapter explores the baseline levels of PTD at the beginning of camp, the campers' voices behind the levels of PTD, and the changes in PTD after the six-week curriculum. As noted in previous chapters, self-esteem and confidence have been reported to be highly correlated with an individual's sense of hopefulness (Cantrell & Lupinacci, 2004; Hendricks-Ferguson, 2008). Thus, of the six Cs of Positive Technological Development (Confidence, Competence, Connection, Caring, Character, and Contribution), the main focus of this chapter will be on PTD's Confidence.

Positive Technology Development After Camp For All

The baseline PTD scores, described in Table 9.1 demonstrate the level of PTD upon entrance into the camp experience. Again, levels of PTD are lower in the sibling population than in the population with an illness. This observation corresponds to Cantrell and Lupinacci's (2004) finding that self-esteem scores were higher in those participants who had been diagnosed with cancer. This observation continues the argument that a focus on siblings is necessary in the future.

Additionally, there is the same gap between campers from rural Camp Dreamcatcher and those from urban Rainbow Connection; once again, the Rainbow Connection group contained three outliers who contributed PTD scores below 75. Due to the public

school system in urban Houston and Galveston, this finding is not surprising as funding for technology is not as high as school districts in rural Temple, Texas. Additionally, families battling poverty or lower incomes may not have the same access to positive technology.

When interviewing participants, I narrowed in on confidence. Because confidence has demonstrated to be positively correlated with hopefulness (Hinds et al., 1990; Ritchie, 2001) and social connectedness (Connelly, 1998), this element within the framework of positive technological development had the greatest relevance to the curriculum and the ideals underlying the camp experience. Bers (2009) defines confidence in PTD as “a sense of oneself as someone who can act and learn to act successfully in a technology-rich environment and find help when necessary and have perseverance over technical difficulty,” a definition that incorporates the relevance of technology into the construct of self esteem and hopefulness.

Table 9.1 Baseline PTD Scores and Confidence Aggregate

Sample	N	Mean Total (SD)	Mean Confidence (SD)
All Campers	40	92.45 (23.93)	10.43 (3.22)
Campers with an Illness	22	98.96 (23.33)	11.13 (3.05)
Campers who are siblings	18	82.69 (22.01)	9.38 (3.26)
Campers with Cancer	16	103.77 (22.30)	11.59 (3.10)
Campers with a blood disorder	6	92.25 (25.62)	10.63 (3.16)
Camp Dreamcatcher	22	99.13 (20.45)	11.29 (2.49)
Camp Rainbow Connection	18	84.88 (27.00)	9.29 (3.74)
Returning Campers	32	90.50 (25.35)	10.13 (3.30)
First-Time Campers	8	100.63	11.88

		(20.79)	(3.04)
--	--	---------	--------

Bringing technology into a socially rich environment like camping provides an arena for campers to have the benefits of both socialization and developmentally designed technology. In order to understand how the campers conceptualize confidence, Table 9.2 describes the campers' understanding of factors that contribute to confidence within their everyday lives. As indicated, perceived social support contributes to more campers' confidence than inner support. Understanding that social support for adolescents is highly pivotal to feeling accepted and understood, this finding clarifies the need to reach out to adolescents through a social format like camping communities.

Table 9.2 Factors that Contribute to Confidence

Sample	Coding Category	Codes	Frequency	Illustrative Quote
All Campers (n=40)	Outside Support (n=30)	Family	4/40	My family makes me feel confident because I know that they believe in me.
		Friends	23/40	My friends when they encourage me and stuff like if I'm having a bad day at school or whatever then they always know what to say to make me feel better.
		Teachers	2/40	My tutor makes me feel really confident because he builds me up you know.
		Religion	1/40	God makes me feel confident because when I was sick he spared me so I know that I am worth something extra.
	Inner Support (n=10)	Sports Performance	2/40	When I make a basket on the court or when I hit a baseball really hard then I know that I'm doing alright.
		Interests	1/40	My hobbies make me feel confident because they set me apart from my friends cause they are unique like me.
		Illness Experience	1/40	My own experience with cancer makes me feel confident because I know that I'm special now cause I made it.
		School Performance	6/40	When I do really well in school and make a really good grade then I feel really confident.

Table 9.3 Mean PTD Scores after Camp For All

Sample	N	Mean t-1 (+/-SD)	Mean t-2 (+/-SD)	Δ	Mean t-1 Confidence	Mean t-2 Confidence	Δ
All Campers	40	92.45(23.93)	98.70(24.19)	6.25	10.43(3.22)	10.73(3.12)	.03
Campers with an Illness	22	98.96(23.33)	104.08(23.69)	5.12	11.13(3.05)	11.21(2.99)	.08
Campers who are Well- Siblings	18	82.69(22.01)	90.63(23.34)	7.94	9.38(3.26)	9.43(3.18)	.05
Camp Dream- catcher	23	99.13(20.45)	106.33(17.84)	7.2	11.29(2.49)	11.34(2.26)	.05
Camp Rainbow Connection	17	84.88(27.00)	89.29(28.67)	4.41	9.29(3.74)	9.38(3.31)	.09
Returning Campers	32	90.50(25.35)	97.63(25.98)	7.13	10.13(3.30)	10.20(3.09)	.07
First Year Campers	8	100.63(5.58)	104.75(19.92)	4.12	11.88(3.04)	11.91(3.01)	.03

Table 9.4 Descriptive Statistics for the Change in PTD

Sample	Mean Δ	+/-SD	t-test	P value	95% CI
All Campers (N=40)	6.25	8.51	-4.65	<.0001	3.53-8.97

Despite having only 2 hours using the program, campers still experienced an increase in positive technological development. For example, Table 9.3 explains that mean PTD scores increased 6.25 points within all campers; additionally, campers who are well-siblings saw the greatest increase in mean PTD scores (7.94). The descriptive statistics, listed in Table 9.4 state that the mean positive technological development increase for all campers (M=6.25, SD=8.51, N=40) is significantly greater than zero as the $t=-4.65$, two-tailed $p<.0001$. This finding suggests that the exposure to two hours of positive technology contributed to the campers' overall positive technological development.

While at camp, campers were asked to describe the elements of the camping experience that contributed to feeling confident. Table 9.5 suggests that the campers' answers were split between an appreciation for the activities designed to empower campers and

the relationships found within the community. These findings confirm the dual nature within camping interventions as they rely on both the strength of the programming and the community. One camper, KMell, mentioned the importance of the counselor’s presence:

Whenever I’m feeling down or not good enough or something, then a counselor makes me laugh and all of a sudden, I’m much better, you know. I think it’s like they can just tell when something is wrong and they know right away how to help.

Table 9.5 Aspects of Camp For All that Promote Confidence

Sample	Coding Category	Codes	Frequency	Illustrative Quote
All campers (n=40)	Socialization	Friendship	10/40	My friends here make me feel better about myself.
		Mentorship	3/40	The counselors are the best at pumping you up and making sure you’re ready to make yourself proud.
		Inclusivity	8/40	I feel like I belong here because everyone is open to you being here and that makes me feel confident
	Recreation	Challenges	7/40	When I get to challenge myself in really tough activities like horse back riding I feel really good about myself.
		Activities	12/40	Getting to swim when normally I would be really afraid to take off my shirt because people could see my port is good because now I am able to know that I am good at swimming.

Positive Technological Development After Zora Camp4All

In order to answer the question as to whether Zora Camp4All promotes the campers’ positive technological development, this section explores the difference within the campers’ PTD scores after participating in Zora Camp4All and the aspects of the program that contribute to the differences. As Table 9.6 describes, the increase in PTD scores continues after the eight weeks. Interestingly, the mean difference for campers

who participated in the curriculum (1.20) is lower than those who did not (2.51). This discrepancy hints at the effectiveness of the curriculum element and its place within a recreation extension. It was unexpected that the curriculum cohort had the lowest increase in PTD; upon further consideration, though, the curriculum cohort also possessed a high baseline PTD score, indicating that the program might be more appealing for individuals who already hold a strong technological appreciation.

Table 9.6 Mean PTD Scores after Zora Camp4All

Sample	N	M time 2 (+/-SD)	M time 3 (+/-SD)	Δ
All Campers	40	98.70(24.19)	100.83(24.83)	2.13
Non-Curriculum Cohort	30	97.59(24.45)	100.10(26.26)	2.51
Curriculum Cohort	10	102.10(19.47)	103.30(17.96)	1.20
Campers with an Illness	22	104.08(23.69)	106.13(24.13)	2.05
Campers who are Well-Siblings	18	90.63(23.34)	92.88(24.46)	2.25
Camp Dreamcatcher	23	106.33(17.84)	108.33(17.86)	2.00
Camp Rainbow Connection	17	89.29(28.67)	91.47(29.92)	2.18

Table 9.7 Descriptive Statistics of PTD Scores after Zora Camp4All

Sample	Mean Δ	+/-SD	t-test	P value	95% CI
All Campers (N=40)	2.13	4.55	-2.95	.005	.67-2.13
Non-Curriculum Cohort (N=30)	2.43	5.13	-2.59	.01	.52-4.35
Curriculum Cohort (N=10)	1.2	1.93	-1.96	.08	-.18-2.58

Table 9.6 describes that the largest increase in scores of positive technological development came from the non-curriculum cohort. This distinction is interesting as this group was not guided through Zora Camp4All and instead utilized the program independent of facilitation. This process of independent exploration might have contributed to the increase in positive technological development as the participants experienced

more trouble shooting opportunities. Promising increases in scores occurred in the two populations that have raised concerns within this document. Both the campers who were siblings and the Rainbow Connection group demonstrated a mean score increase larger than 2.0.

Table 9.7 describes that the mean positive technological development increase for all campers (M=2.13, SD=4.55, N=40) is significantly greater than zero as the $t=-2.95$, two-tailed $p<.005$, suggesting that Zora Camp4All promotes positive technological development. Additionally, the mean positive technological development increase for both the non-curriculum cohort (M=2.43, SD=1.93, N=30) and the curriculum cohort (M=1.2, SD=1.93, N=10) are both significantly higher than zero. The non-curriculum cohort $t=-2.59$ and the two tailed $p<.01$, demonstrating statistical significance. The curriculum cohort $t=-1.96$, with the two-tailed $p<.05$, also demonstrating statistical significance. These findings suggest that the use of the technology contributes to the campers' PTD.

When looking closely at the change in PTD in each cohort as examined in Table 9.8, the non-curriculum cohort demonstrates higher total mean increase whereas the curriculum cohort demonstrates higher confidence mean increase. This suggests that the non-curriculum cohort experienced increases in positive technological development, including interpersonal C's as a result of frequent chatting (Caring, Community, Contribution).

Table 9.8 Changes in the Six C's of PTD after Zora Camp4All

Sample	Δ PTD	Δ Confidence
All Campers	2.13	.08
Curriculum Cohort	1.20	.10
Non-Curriculum Cohort	2.52	.07

In an attempt to understand the elements within Zora Camp4All that aid in the change in PTD, correlations between mean differences within aggregates and program usage were tested within the entire sample. As demonstrated within Table 9.9, there are no noteworthy positive correlations between the measured Zora Camp4All usage and a change in mean scores. While the quantitative data does not reveal associations between Zora Camp4All usage and change in PTD, interviews with the campers fill in the gaps.

Table 9.9 Correlations between Zora Usage and Change in PTD Scores

Zora Variable	Total PTD	Confidence
Number of Log-ins	r=.151	r=-.197
Number of Completed Curriculum Objectives	r=.159	r=-.302
Number of Objects Built	r=-.260	r=-.129
Number of lines of Chat	r=.130	r=.108
Number of Stories Created	r=.050	r=-.152

Table 9.10 describes the campers' responses to elements within the program that could contribute to heightened technological confidence. The table demonstrates that there is still a split between valuing the social aspects of the Zora program and the constructing elements. Likewise, as was demonstrated within Chapters 7 and 8, the curriculum cohort conveys a greater preference toward using the construction elements within the program. Fifty percent of the curriculum cohort cited the activities within Zora Camp4All as impacting their confidence whereas only 10% cited it within the non-curriculum cohort.

This finding implies that those campers who identified building and constructing within Zora Camp4All to be most significant in fostering confidence were the ones most likely to continue their commitment to the curriculum. Likewise, it reiterates that those

who desired the more social elements of the program were the participants who utilized Zora Camp4All outside of the curriculum.

Table 9.10 Aspects of Zora Camp4All that Promote PTD

Sample	Coding Category	Codes	Frequency	Illustrative Quote
Non-Curriculum Cohort (n=30)	Connection 90%	Maintaining friendships	14/30	I would feel more confident about using the computer if there was a friend to help me with it, you know.
		Keeping in touch	16/30	Finding out how other people are doing in school and stuff will make me feel like I was back at camp where I feel super confident.
	Activities 10%	Building objects	1/30	Learning how to do stuff on Zora will make me feel better about my computer skills.
		Programming	2/30	I like to program already so Zora will give me a place to practice.
Curriculum Cohort (n=10)	Connection 50%	Maintaining Friendships	2/10	I think that like sharing memories with you friends on Zora will help to make you feel better about yourself because you can like go back to a time when you felt stronger.
		Keeping in touch	3/10	Being able to talk to people and keep in touch will make me feel more confident cause I know that they are supportive.
	Activities 50%	Building objects	3/10	Well, you are going to teach us things on Zora and that will help us to feel confident.
		Programming	2/10	The programming stuff is pretty cool and I think I'm good with that stuff so it will make me feel good.

While data suggests that Zora Camp4All was able to promote PTD, this chapter cannot confirm that any of the tested elements of Zora Camp4All contributed to its maintenance. The data, though, does suggest that the non-curriculum cohort and the curriculum cohort both experienced a significant increase in PTD.

This chapter also presents that data derived from interviews hints at developmental niches within the program that cater to the different needs of the campers; thus, while the curriculum is appealing to some, it may not be to others. For some campers, just being able to chat with the members of their cabin may be enough to promote technological confidence.

Data from this chapter also demonstrates a recurring theme of the sibling experience. Scores for siblings were significantly lower than those individuals with illnesses. Additionally, because the curriculum cohort contained only two siblings, the program could lack appeal for the sibling population. The scope of this project cannot attempt to explain these findings but future research should expand on this observation.

Chapter Ten: Conclusions, Future Research, Implications, and Limitations

This chapter aims at bringing this project to a close. First, this chapter will summarize the findings for each research goal, expand on the three most relevant findings, and provide considerations for future research. Second, this chapter will look at the clinical implications of conducting research aimed at enhancing hopefulness. Third, this chapter will examine the limitations faced within the project. Fourth, this chapter will look at the feedback received from campers to further assess feasibility. Finally, the chapter will end on a personal reflection that describes the journey to complete this project.

Conclusions and Future Research

To conclude, I first aim to summarize the findings of this thesis project as Table 10.1 reviews each of the three main research goals and fourth assessment question. Overall, the quantitative data did suggest that all three constructs (hopefulness, socialconnect- edness, and positive technological development) were sustained through the Zora Camp4All project and there was no regression to baseline levels (Hinds, 1988). The data did not depict strong correlations between the increase in these constructs and the many tested elements within the program. Qualitative data, on the other hand, did demonstrate a need for a program whose purpose is to maintain the united community created at Camp For All. Also, the data showed variations in developmental needs within the population, including programs that emphasize socialization within their curriculum. These distinctions imply that future programs should aim at allowing more time for communication.

Table 10.1 Results Summary for each Hypothesis

Hypothesis	Methods	Result Summary
Does Zora Camp4All sustain hopefulness within campers after their week of camp?	HSA Interviews	Findings suggest that Camp For All promotes hopefulness. Additionally, findings suggest that Zora Camp4All does not play a large role in sustaining the hopefulness from camp.
Does Zora Camp4All sustain social connectedness within campers after their week of camp?	SCS-R Interviews	Data suggests that Camp For All does promote social connectedness. Also, findings suggest that Zora Camp4All plays a role in the sustainability of social connectedness.
Does Zora Camp4All promote positive technological development within campers?	PTD Interviews	Findings suggest that positive technological development is promoted through time at Camp For All. Additionally, data suggests that Zora Camp4All contributes to the promotion of PTD.
Is incorporating a technology intervention feasible in camping communities?	Zora-logs	Results from Zora logs demonstrate that the campers valued the continued communication with friends made at camp.

Beyond the summary, I wish to state the three main take-away results that resonated with me during the completion of this project. These three points include 1) the sibling concern, 2) the demographic discrepancies, and 3) the efficacy of curriculum. In addition to discussing these points, I would also like to include directions for future research within this section.

The Sibling Concern

A major finding within this project was the discrepancies between the different populations in the study. Of greatest importance is the large gap between scores of hopefulness, social connectedness, and positive technological development in campers who

were ill and those who were healthy siblings; this finding proposes clinical implications that extend beyond the illness and permeate into the family structure.

The literature for siblings of adolescents who are ill is lacking; additionally, little is known about how the sibling conceptualizes hopefulness. Fortunately, recreational interventions such as pediatric camping encourage the matriculation of siblings into the camping population and literature is supporting the shift (Wellisch, 2006; Packman et al., 2004; Murray, 2001). In order to further the hopefulness piece of this intervention, though, more work needs to be done on how siblings perceive their sense of hopefulness and how it is impacted by the illness within their family.

Demographic Discrepancies

Another large discrepancy was the gap between the campers that came from Temple, Texas (Camp Dreamcatcher) and the ones from Galveston, Texas (Rainbow Connection). These findings suggest that demographic considerations including low income, community violence, public schooling, and family structures affect the campers' sense of hopefulness, social connectedness, and positive technological development. These considerations were not made prior to the development of the intervention. Had they been incorporated into the curriculum, the rate of Rainbow Connection participation might have been higher; regardless, this difference between the two communities became prominent throughout the results.

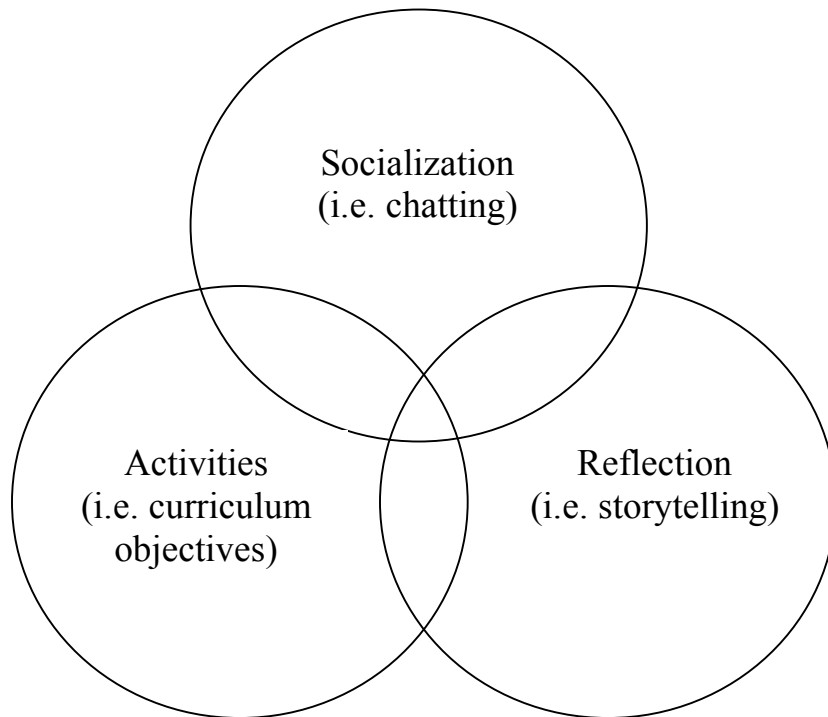
Future development of interventions should closely examine the demographics of their chosen sample before solidifying the program. Additionally, further research examining the demographic correlations with hopefulness, connectedness, and positive technological development should be conducted to clarify the attributes of this population.

Efficacy of Curriculum

Results from this study confirm that campers valued the socialization piece of the Zora Camp4All program. Additionally, it showed that campers within the non-curriculum cohort were requesting more forms of socialization and communication.

Thus, in order to appeal to a larger group of participants, I propose that future projects should place equal emphasis on socialization and curriculum within the program. This consideration will adapt the virtual community to the varying developmental needs of the population. Considering that socialization plays the leading role in camping communities, I predict that this consideration will enhance the program's augmentation of the camp experience. Figure 10.1 describes the balance within future projects.

Figure 10.1 Proposed Model for Future Projects



While Zora Camp4All's curriculum was structured and highly goal-oriented to emphasize hopefulness, there was a low presence of simply, "catching up." The three concentric circles could guide future curriculum to incorporate time spent on each area and smooth transitions between each so that sessions within the program mirror the flexibility and bonding emphasized within camping communities. Additionally, the circles mirror the three user profiles mentioned within Chapter 6, accommodating for the developmental needs of each. The chatter would respond well to the socialization piece while the builder would enjoy the constructive activities and the storyteller would relate to the reflection elements; incorporating all three arenas allows for more preferences to be covered.

Future Research

In addition to the considerations for future research mentioned above, overall, this project lead me to consider the future of technology within recreation and the options for extending the camping experience.

The feedback and rates of participation from this study indicate that there is a need for programs that augment the camp experience through acting as an additional means for communication and connection. The study, though, also demonstrated that there was not statistically significant improvements within the group that adhered to the curriculum. This implies that future projects might find greater success if socialization and communication was emphasized within the program.

All campers responded positively to the implementation of the project, citing its safety and its appearance and reasons for finding it appealing. Above all, though, the campers pointed to the program's ability to maintain friendships as a key asset. Thus,

future projects should work with the campers in creating a virtual community that aids in maintaining contact and communication.

Although I support recreational programs that emphasize learning in the outdoors, the data from this study demonstrated that positive technological development increased while the campers were at camp, after they had experienced two hour-long facilitation sessions. This increase has implications on the campers' school performance and overall comfort level with technology, a medium that is growing. I believe this finding should open up conversations about future inclusion of technology within camping curriculum, even if it's just two hours a week.

Clinical Implications

Hopelessness expresses both a way of feeling and a way of thinking characterized by “discouraged despair or a de-energizing force” (Ferran et al., 1995, p. 24). When patients are hopeful, the medical team works to maintain that hopeful attitude. When a person is hopeless, though, the medical team is charged to intervene in ways not demanded when hope is present (Ferran et al., 1995). When adolescents become hopeless, their thinking becomes impaired and they have difficulty concentrating on their goals or finding solutions to problems. Typically, the sign of hopelessness signals that something is wrong and that the individual is no longer coping—it can mean that one's goals aren't being met or that their lifestyle has become unbearable (Ferran et al., 1995).

An experience with a serious illness, whether as a patient or as a sibling, places the adolescent in risk of developing negative concepts about his or her ability to deal with the illness. Several investigators have described adolescents with cancer as being especially vulnerable to the absence of hopefulness (Hinds, 2004, Snyder et. al., 1997). A

recent review articulated the general cognitive vulnerability–stress model of depression that could come into play when considering adolescents with cancer (Abramson & Alloy, 2006). The hopelessness theory of depression proposes that individuals who make negative conclusions about causality, self, and consequences in response to negative events, such as illness and trauma, will be most likely to develop depression in the wake of negative events (Abramson et al., 1989). Retrospective and prospective tests of the hopelessness theory in adolescents have supported the hypothesis that these cognitive styles do in fact confer vulnerability to depression in the midst of these challenges (Abramson & Alloy, 2006).

This study demonstrates a consideration that is often overlooked within the literature. The sibling experience became a forefront of concern within this project as hopefulness, social connectedness, and positive technological development means all fell below the campers with illnesses. Alderfer et al. (2003) claim that 30% of siblings of survivors of childhood cancer still had significant symptoms of posttraumatic stress disorder and Houtzager et al. (2004) describe that “nearly 26% of teenage siblings still reported clinically relevant emotional problems 2 years after the ill child’s diagnosis” (p. 600). These figures point to a subgroup of adolescent siblings, nearly one-third, who experience long-term adjustment problems. Houtzager et al. (2004) also suggests that a positive outlook toward the illness experience is a protective factor for siblings. Thus, interventions employing hopefulness, a source of positivity, might aid in the sibling’s adjustment to the illness. Unfortunately, as the numbers from this study describe, Zora Camp4All appealed more to campers who were ill instead of their siblings.

This study also suggests that the additional sources of chronic stress such as poverty and community violence can inhibit the teen from feeling hopeful and connected. Ozmen et al. (2008) looked at 1185 adolescents between the ages of 14 and 19. The results demonstrated that three variables resulted in a positive correlation with mean hopelessness scores: lower income, lower education levels in parents, and perception of family status as low. Like Meyer et al. (2008), Ozmen et al. (2008) concludes that hopelessness is more common in the children of families with a low socio-economic level. These findings have implications for future development of hope –based interventions as curriculum needs to be catered to the factors that influence the populations’ chronic stress.

Limitations

A main limitation within this project was the small sample size. With larger sample sizes, correlations could be more evident and statistical significance more confirmed. Additionally, though, a larger group would require more facilitators and more time on the researcher’s part. While I valued the time spent with each of the campers, I find it difficult to imagine collecting data and following through with curriculum if the group had been larger. Accessibility is also a noteworthy limitation as pediatric camp communities have only recently opened their gates to researchers; finding communities that are open to the researcher’s presence is difficult.

This project would have seen more success and greater participation on the campers’ parts if I had more time available to devote to the project. Additionally, it was demonstrated in Chapter 6 that my three-week absence resulted in a decrease in activity within the world. Time and availability of the researcher is reflected within the world’s progress and became a limitation as the project continued.

Distance also acted as a limitation. While I was able to keep in contact with most of the participants through email, I was unable to visit them if they had technical difficulties or conduct face-to-face Phase 3 interviews. Unlike other Zora communities where there are more opportunities to personally interact with the participants (Bers, 2009), the project's distance lead to multiple frustrating circumstances.

Program Feedback

Camper feedback on the program was significantly positive. During the week at camp, I overheard multiple conversations about Zora Camp4All and that it would create opportunities for staying in touch. As an addition to camp week, the program does not match with the rest of the activities. Most of the programming at Camp For All is high in energy and asking the campers to sit through the facilitation sessions was difficult; thus, the feedback during the facilitation sessions was mixed.

When asked about the various aspects of the program, though, campers demonstrated more positive associations than negative. Within Table 10.2, interviews were coded to extract feedback and classified into positive or negative. The category with the most negative responses was User Friendliness as one camper described:

The buttons are too small and I don't know what to do when I go online. Maybe the buttons should be bigger so I can see it better.

Safety, though, was the most positive attribute as many campers cited it as an important feature to themselves and their families. For example, one camper said:

I'm not allowed online except for Zora because my mom met you and could tell that you were nice and that you weren't creepy or nothing.

Of the campers that I was able to poll at the end of the program (N=32) in October, 91% said that they would come online again if the world reopened. Additionally, 94% said that Zora Camp4All should be used again next year and 72% said that it should be opened to the entire Camp For All community, not just the hematology/oncology session.

Table 10.2 Camper Feedback on Zora Camp4All Program (N=40)

Category	Code	Frequency	Illustrative Quote
Appearance	Positive	5/40	I love that you posted pictures of us from camp because it turned the space into an immediate community because I saw that I belonged there.
	Negative	1/40	Uh, the graphics are pretty outdated and stuff but it's not a big deal.
Curriculum	Positive	3/40	I like that we talk about camp and how to plan for the future cause I am about to graduate and I need that you know.
	Negative	3/40	Why do we have to do activities that are so boring?
Accessibility	Positive	5/40	I like that I can get online whenever I want and that it's always there, you know.
	Negative	0/40	None.
User Friendliness	Positive	3/40	I think it will be cool to learn about computer stuff through the program cause it's like pretty easy to use and I think I will use it a lot.
	Negative	5/40	I don't really know how to use Zora. I've been on it a lot and it's still hard to do everything. More time should be spent teaching how to use the functions.
Safety	Positive	6/40	Safety is really important to my parents cause there's lots of crazy people on the internet and stuff so this will be a way that we can talk and stay in touch but without creepy men.
	Negative	0/40	None.

Personal Reflection

I wanted to end this thesis with a personal reflection into the journey of completing the project. As a childhood cancer survivor and a former camper, camp counselor, and program manager, I credit a large amount of my development to the confidence and

connections that were products of my time at camp. In fact, it was my passion for pediatric camping that led me to Eliot-Pearson to further my understanding of aiding and augmenting the camp experience. While technology never crossed my mind until I met Professor Marina Bers and learned of her projects, I have since gained a deep appreciation for its ability to cut across state borders and hospital walls to bring adolescents together. The idea to incorporate camping and technology, while at first was a way to explore a new topic, has since turned into a call to action. I believe this can help adolescents feel more hopeful, more connected, and more empowered. And I will take this belief with me into my future experiences.

While the journey granted me that understanding, it was also a challenging undertaking that taught me to learn many things the hard way. In particular, I learned 1) to begin the IRB process with a large cushion of time to devote to edits, 2) to test all technology before arriving on the research site, and 3) to immediately cite references upon finding them. These small glitches, though, were nothing compared to feat that was involved in moving my timeline up by five months. Originally planning on completing this document in May of 2010, a family emergency caused me to compress this experience into three months of late nights. In addition to my own stress of completing this project, my committee had to sacrifice time consulting and editing to meet deadlines. With sometimes little notice, they acted graciously while helping me maintain my goal of a 2009 completion. For this demonstration of compassion, I am endlessly grateful.

In conclusion, I am thankful to have been given the opportunity to explore a new field in the comforts of an environment that I know so well. Being able to continue the relationships I established with the campers throughout the fall added a new dimension to

my daily life. I am also thankful for the freedom to conduct a study on my own and rise to the challenge of this document. The experience has expanded my skill-set and my own appreciation for the field of developmental technologies and their benefit. Above all, though, I know I have much more to learn as my journey in the field continues, especially when it comes to research methodology, procedures, and, of course, statistics. I am grateful to have this experience as a guide for my future and appreciate all those who contributed to my success.

Appendix A

