To the Graduate Council:

I am submitting herewith a dissertation written by Jayne O'Neal Griffin entitled "Camps for Children with Autism." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Policy Studies.

Susan M. Benner, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Vice Provost and Dean of
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CAMPS FOR CHILDREN WITH AUTISM

A Dissertation
Presented for the
Doctor of Education
Degree
The University of Tennessee, Knoxville

Jayne O'Neal Griffin
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DEDICATION

This dissertation is dedicated to my husband, Reese, the Great Encourager, who makes me feel like I can do anything. It is also dedicated to my father, Bill, who modeled tenacity and perseverance, and who loved me without condition.

My Encourager, Protector, and Defender

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This project has been a group effort, and without the following people, I would have remained ABD forever! The staffs of Creative Discovery Museum and Siskin Children's Institute made this project possible with their patience, support, and encouragement. The committee for this project was vital to its completion. Susan Benner's analytical mind enabled me to share this information in an understandable manner, Amos Hatch took a chance on a qualitative research novice, Dan Quarles took me through the classroom portion of this degree with the patience of Job, and Mary Tanner's wisdom has always been an inspiration for me. Finally, admiration and appreciation go to the parents who agreed to give me the pleasure of watching their amazing children for a brief time.

ABSTRACT

Traditionally, children with autism have not been addressed as a marketable audience for extra curricular activities such as day camps. This is understandable since there is a conflict in the definitions of autism and camps. (Autism is defined by atypical patterns of social interaction, while camps are defined by social interaction.) The purpose of this qualitative study was to investigate the behaviors of children with autism in a camp setting as compared with a classroom setting, define the characteristics of a camp setting for children with autism, and determine why the parents of these children chose to send their children to camp. The questions that framed the study were what is the behavior of children with autistic spectrum disorder in a camp setting designed for children with autism as compared with a classroom setting, how do children with autism interact with each other in a camp setting, how are camp settings different from classroom settings for children with autism, and why do parents of children with autism choose to send their children to camps. Data were collected from sources including the observation of three children in camp and classroom settings, an interview with the parents of the children, an examination of the children's educational records and a comparison of camp and classroom curricula. Analysis of the data included categorizing the units of meaning recognized from the observations into themes. The analysis revealed that the behavior of the children did not differ significantly between the environments, although the physical settings and the curricula were different and that these children with autism, a developmental disability defined in terms of socialization, were social. An analysis of the parent interview identified four categories within the data including why parents send their children to camp, parental perceptions about camp, perceived differences in the

camp and the classroom settings, and the parents' perceptions of their children. A pattern emerged from these categories revealing a connection between the parent's perception of the child, the rationale for sending the child to camp, and the expected outcome of the camp.

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CHAPTER I: INTRODUCTION

"Usually in a place like this, they just think I am a bad parent. That's why we don't even go to McDonald's anymore, and why Disney World is out of the question for my family." These words were spoken by the parent of a child with autistic spectrum disorder at the parent's orientation night for a museum day camp. This children's museum day camp had been designed for the exclusive use of children with this "physical disorder of the brain" (Powers, 1989, p.3). As the first of its kind in the Chattanooga area, this camp was modeled after a similar camp in Pittsburgh, Pennsylvania.

Background

The term autism was first described by Leo Kanner in 1943 (Freeman, 1996). He was using the word to describe a social condition that evidenced itself through behaviors that were centered on the self and disregarded external reality. The prefix auto-, the same prefix that is used for autobiography, is the root of the word autism. Kanner described autistic children as failing to develop normal external relationships and as being upset by changes in their environments (Freeman, 1996). Although medical understandings of the cause and treatment of the disease have changed significantly through the years (Freeman, 1996), the symptom that gives the syndrome its name, has not. The term autistic continues to describe the social tendencies of the child who carries this label. Edelson (1997) defines one of the most characteristic symptoms of autism as being a dysfunction in social behavior. He classifies this autistic behavior using three categories: the socially avoidant, socially indifferent, and socially awkward.

In contrast, the connotation of the term camp includes words such as recreation and group. The common understanding of a children's camp setting is one in which children

come together for social fellowship and leisure. In fact, the American Camping Association lists the first objective of a camp to be providing creative recreational and educational opportunities in a group setting. A second objective is to direct all efforts "toward people centered goals" (Gibson, 1974, p.10).

An intriguing question then arises when day camps become a venue for children with autism. What makes a camp for kids with autism a camp? A camp is a recreational and leisure setting focusing on the participants' socialization, while a child with autism is, by the nature of the definition, unable to enjoy social interactions. Then the question becomes: how does a camp setting serve the needs of a child with autism? An additional reason for a child to attend day camp is to vary the child's daily routine (Gibson, 1974), which can prove to be problematic for children with autism (Andolesek, 1998). A good day camp is a vacation and respite for children from the routine of life and a chance for new social interactions (Gibson, 1974). Children with autism thrive on routine and, by definition, have problems with social interactions. Yet, a camp should be a pleasing experience for the child. How can a camp setting be defined for a child with autism?

Purpose of the Study

The purpose of the study was to investigate the behaviors of children with autistic spectrum disorder in a camp setting as compared with a classroom setting. An additional purpose of this study was to define the characteristics of a camp setting for children with autism. Parental respite time is one reason that typical children are sent to summer camp, and parents of children with autism are in great need of this time away from the demands of raising a child with this special need (Harmon, 1995). Therefore, an ancillary purpose

of the study was to determine the parents' rationale for choosing to send their children with autism to camp.

Research Questions

The main question framing the study was: What is the behavior of children with autistic spectrum disorder in a camp setting designed for children with autism as compared with a classroom setting? Focused sub-questions included in the study were: How do children with autism interact with each other in a camp setting? How are camp settings, including curriculum, teacher interaction, and environment, different from classroom settings for children with autism? Why do parents of children with autism choose to send their children to camps?

Limitations and Delimitations of the Study

The scope of this study was limited to an examination of the social interactions of three subjects. These social interactions were limited initially to those occurring between the observed camp participant and his/her peers, teacher/facilitators, and Museum guests. Another limiting factor was the fact that the only curriculum to be examined was the one used by the Sensory Camp during the summer of 2002 and the Siskin Children's Institute curriculum used during the fall term 2002.

Delimitations of the study included matters relative to the study, but not investigated within the context of this study. Included among these were the use of day camps to treat autism, advances in cures for autism and the cause of autism. Additionally, the effects of autism on the life of the family were not a part of this study. Finally, the study was delimited to the Sensory Camp presented by the Siskin Children's Institute at Creative

Discovery Museum in Chattanooga, Tennessee in the summer of 2002, and no other camp for children with autism was investigated in this study.

Significance of the Study

Camps for all children provide an opportunity to develop social skills (Gibson, 1974), yet very few have been developed to address the specific needs of children with autism. The defining manifestations of a child with autistic spectrum disorder include the impairment of social interaction and communication and, the camp setting could prove to be therapeutic for the child with autistic spectrum disorder (Andolsek, 1998).

An anticipated outcome from this study was a clear definition of a camp for children with autism as contrasted with the typical classroom setting. The hope was that with more information about camps for children with autism, informal educational institutions might become interested in offering recreational programs for children with autism and other special needs.

Additionally, little evidence has been documented regarding the design of camps in informal educational institutions, and more specifically in children's museum settings. With the increased emphasis on constructivist teaching in the classroom (Scherer, 1999), the line between formal and informal education tends to narrow. Since many children's museums are located in urban areas that do not lend themselves to the outdoor settings that can more clearly differentiate the camp from the classroom, it is sometimes difficult for a children's museum to design camp experiences that make it a unique setting for recreation. Therefore, an expected outcome of this study was to define more clearly, for camps dedicated to children with autism and for the generic children's museum camp,

those factors that make them unique recreational settings as opposed to the more formal classroom setting.

Definition of Terms

Terms used in this report that may need to be defined in the context of this study are listed below.

Amygdala – An almond-shaped mass of gray matter in the anterior portion of the temporal lobe of the brain.

Discrete trials – A single cycle of a behaviorally based instruction routine. The four parts, to a discrete trial are the discriminative stimulus- the instruction or environmental cue to which the teacher would like the child to respond, the prompting stimulus -- a prompt or cue from the teacher to help the child respond correctly, the response-- the skill or behavior that is the target of the instruction, the reinforcing stimulus-- a reward designed to motivate the child to respond and respond correctly, the inter-trial interval -- a brief pause between consecutive trials (Zager, Shamow, & Schneider 1999).

Echolalia - The immediate repetition of words and phrases spoken by others in the manner of an echo.

Joint attention – Two people whose attention is directed to the same object or event (Kassari & Sigman, 1997).

Mainstream camp sessions – Camp sessions designed to be inclusionary but marketed to non-disabled populations.

Positivist - A researcher who believes that there is a truth, which can be found and discerned (Hatch, 2002).

Postpositivist - A researcher who believes that there is truth but knows that the truth may never be discerned (Hatch, 2002).

Pronominal reversal – The reversal of pronouns. An example would be the substitution of you for the pronoun I (Aarons & Gillens, 1992).

Therapeutic – Used in this paper to denote applications that address the reduction of the symptoms of autism.

In this chapter, the researcher has laid the groundwork for the project, enabling the reader to understand why the project was undertaken and what she hoped to accomplish. As the next chapters unfold, it is up to the reader to decide if she was successful in her investigation of the behaviors of children with autism in a camp setting.

CHAPTER II: REVIEW OF LITERATURE

The literature reviewed for this study served as a clarification of and validation for the direction the study took (Hatch, 2002). Marshall and Rossman (1995) contend that the review of literature should demonstrate the underlying assumptions behind the research questions. That is to say, the work of others in the fields of autism and the definition and purpose of camp programs for children will help the reader of this research understand more clearly the rationale for asking the question, what is the social behavior of a child with autism in a camp setting as compared to classroom behaviors. The sequence for the presentation of this literature included the following: autism defined, the demographics associated with autism, diagnosis and treatment of autism, indicators of socialization, socialization processes of children with autism, parenting children with autism, teaching children with autism, the definition and purpose of camps, and studies of social interactions in day camp settings.

Autism Definition and History

Autism might best be understood through the lens of its history (Aarons & Gillens, 1992). Autism was not identified as a condition until 1942. Leo Kanner first described the features then associated with classic autism by articulating behavior patterns of eleven preschool children who were so much alike that they suggested the "delineation of a specific syndrome" (1985, p. 233). According to this original study, symptoms present in the classic form of autism included:

1. An inability to develop relationships including the likelihood that the child with autism may show more interest in objects than in other human beings.
2. Delay in the acquisition of language and in some cases the absence of language.

3. Non-communicative use of spoken language after the use of language has developed. Many children in this situation lack the ability to use words in meaningful conversation even though the vocabulary is known.
4. Delayed echolalia evidenced by the immediate and involuntary repetition of words and phrases.
5. Pronominal reversal meaning that the child substitutes you for the pronoun I.
6. Repetitive and stereotypical play rather than imaginative play. The play of an autistic child may be limited, but the little play that they do engage in tends to repeat the same activity.
7. Maintenance of sameness and a resistance to change in the environment.
8. Excellence in rote learning, memory and articulation of that learning.
9. Normal physical appearance, which caused early researchers to believe that children with autism had a normal intelligence (Aarons & Gillens, 1992, p. 8-9).

While Kanner did much to identify this condition, his observations also did much to create confusion about autism as it is now understood. For instance, Kanner reduced his nine points to two simple constructs: children with autism maintained a sameness in their routines and they practiced extreme aloneness. This minimalist approach to autism during the early years allowed for only the diagnosis of classic cases of autism.

Another early misunderstanding associated with Kanner was the observation that the syndrome tended to affect children of the affluent and well educated. This observation likely represented the bias of referral rather than the reality of the syndrome (Aarons & Gillens, 1992). The current demographics of the disease conclude that autism affects all racial, social and ethnic groups, in every region of the world (Bogo, 2000).

The cause of autism has also been misunderstood, beginning with the identification of the disease. Kanner felt that poor mothering was the culprit (Aarons & Gillens, 1992). Initially, children with autism were thought to have been the result of mothers who did not provide sufficient warmth and nurturing for their children. While this accusatory theory could have been excused by its 1943 date (before contemporary understandings of the brain), it was harder to excuse the later theorists touting this same causal philosophy. As recently as 1972, therapists claimed that autism was caused by a breakdown in the bonding between mother and child. As a result of this viewpoint, "holding therapy", which was a forced hold of the child despite his cries and struggling (Aarons & Gillens, 1992), was introduced. Even the noted psychiatrist, Bruno Bettleheim asserted that the viewing of infantile autism as an inborn trait rather than a "manifestation of environmental influence" (1967 p. 107) would lead to defeat. His assertions maintained that only psychoanalysis and its resulting therapy would cure a child's autism. Another eye-opening statement was made by Aarons and Gillens who, in 1992, bashed those, such as Bettleheim and the "holding therapy"' theorists such as, Tinbergen. In their book, *Handbook of Autism*, Aarons and Gillens asserted, "We know that a medical model that is defining autism as a disease may not be helpful. Instead it is more appropriate to view it in terms of a socio-educational disorder" (1992, p. 17).

Autism Diagnosis, Demographics, Causes, and Treatments

Contemporary thought holds that there are at least five different conditions identified as autism and the severity and range of symptoms differs greatly (Edelson, 2000). Currently autism is defined as one of a group of development disorders in which a wide variety of behaviors and activities are demonstrated that collectively are known as autism

spectrum disorder (ASD) (Dunlap, 1999). ASD serves as an umbrella term that encompasses conditions such as Asperger's Syndrome, autistic disorder, Rett's Syndrome, pervasive developmental disorder, and pervasive developmental disorder not otherwise specified (PDDNOS) (Barstow, 1999)

The diagnosis of autism and other ASD's is determined behaviorally by a clinician through a psychiatric evaluation including medical and family history, observation in various settings, and a medical evaluation to rule out biological diseases that could produce similar symptoms (Volkmar, Cook, Pomeroy, Realmuto, & Tanguay, 1999). Various rating scales are also administered. Those most often used for this diagnosis are the Childhood Autism Rating Scale (CARS) and the Autistic Behavioral Checklist (Gleberzon & Rosenber-Gleberzon, 2001).

Reflective of Kanner's original diagnosis, contemporary clinicians generally characterize autism and other ASD's by impairment in the following areas: social interaction, communication/conversation, and repetitive and stereotyped patterns of behavior (Gleberzon & Rosenberg-Gleberzon, 2001). The American Psychiatric Association has published criteria for the diagnosis of autism in its Diagnostic and Statistical Manual of Mental Disorders. Included are the following criteria. A diagnosis of autism requires that a child fit a total of six (or more) behaviors from categories 1,2,and 3. At least two of these behaviors have to come from category 1 and one behavior from category 2 and 3.

1. A. Qualitative impairment in social interaction in areas such as nonverbal behavior (eye-to-eye gaze, facial expression, and body postures), development of peer relationships, lack of spontaneous

seeking /of enjoyment, interest, or achievement with other people, and lack of social reciprocity.

B. Qualitative impairment in communication as manifested by delay or total lack of the development of speech or the inability of sustain a conversation with others. Other impairments include stereotypical and repetitive use of language and a lack of spontaneous make-believe play or social imaginative play.

C. Restricted repetitive and stereotyped patterns of behavior, interest, and activities. This may manifest as an intense preoccupation with one or more abnormal patterns of interest, inflexible adherence to specific, nonfunctional routines or rituals, and stereotypical and repetitive motor mannerisms (i.e., hand or finger flapping or twisting, or complex whole body movements).

2. Onset of delay or abnormal functioning before age 3 years in at least one of the following areas: social interaction, language as used in social communication, or symbolic or imaginative play.
3. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder. (American Psychiatric Association, 1994).

Currently the diagnosis of autism is used as a label for more than 400,000 children in the United States and is the third most common pediatric developmental disorder, following mental retardation and cerebral palsy. Worldwide it is more prevalent than Down's Syndrome, multiple sclerosis, and childhood cancers. Boys are four times more

likely to be affected by autism as girls are and the current estimate of prevalence is 1 to 2 per 1,000 children, although the United Kingdom reports a rate as high as 3.1 per 1,000 (Gleberzon & Rosenberg-Gleberzon, 2001).

Studies have suggested that there is an increase in the occurrence of autism. The Autistic Research Institute (ARI) has gone so far as to suggest that there is an epidemic of autism. Statistics documented by House Chairman Dan Burton in his report to the 106th Congress include California with a 273% increase in children with autism since 1988, Florida with a 571% increase, and Maryland with a 513% increase between the years 1993 and 1998 (Burton, 2000).

Two factors may explain some of this increase. There has been a broadening of the diagnosis of the classic autism disease into the diagnosis of autistic spectrum disorder (ASD), which includes conditions associated with autistic behavior. Secondly, more than sixty years after the disease was first diagnosed, there is a growing awareness of the presence of the disease and parents as well as pediatricians are more likely to consider the autistic diagnosis (Powell, Edwards, Pandit, Sungum-Paliwal, & Whitehouse, 2001).

A study in the West Midlands areas of the United Kingdom also noted this increase in the diagnosis of both autism and its related disorders. This study addressed two populations of preschool children and resulted in an increase in both of these populations of 37% for each year of the study. Both classical autism and other autism related conditions showed an increase, but the rate of increase for the other related conditions was significantly higher (55%) than for that of classical autism (18%). The suggestion of this study was that clinicians were becoming increasingly able or willing to diagnose

autism and related conditions in young preschool children (Powell, Edwards, Pandit, Sungum-Paliwal, & Whitehouse, 2001).

For many researchers, the exponential increase in the prevalence is purported to be a valid increase in the occurrence of the disease rather than merely the diagnosis and reporting of it (Gleberzon & Rosenberg-Gleberzon, 2001). There is also an indication that the patients are entering the diagnosis of autism at an earlier age than before. The median age of persons with autism dropped from 15 to 9 years of age in the 1990s. If this increase were merely a result of improved diagnosis, a large population of undiagnosed older autistic children and adults should also have emerged, since this is not a condition that goes away by itself. At the same time, other major childhood disabilities have increased at a much slower rate (Fisher, 2000).

Another study related to the increase of diagnosis and occurrence noted the geographic specificity of two autistic explosions. This study was conducted by the Center for Disease Control (CDC) in the Brick Township of New Jersey. In response to community concern, the CDC evaluated the population in Brick and discovered the incidence of autism there to be the highest ever recorded. Instead of the widely accepted figure of 2 in 1,000 children diagnosed with an autism related disorder, children in Brick Township demonstrated autistic related disorders at a rate of 6.7 per 1,000. Whether these studies reveal an actual increase in the incidence of autism or merely an expanded definition and identification, they do reveal an increased awareness of the condition. This awareness should peek an interest for providers to expand their extra curricular services to include this audience.

The contemporary view of the etiology of autism is centered on the idea that there is no universally accepted cause of autism, and therefore no cure. However, research efforts (Andolsek, 1998) are focused on the growing evidence of the genetic influence in autism, especially that type of ASD known as Rett's Syndrome (Gleberzon & Rosenberg-Gleberzon, 2001).

Some contemporary research links the demographics of autism to its uncertain cause including exposure to rubella in the first trimester of pregnancy (Edelson, 2002). Other interesting causation theories have been researched after the reporting of certain demographical statistics. These theories include environmental toxins and pollution as a cause for autism. For example, a town in Massachusetts has a disproportionately high incidence of autism, with the most cases reported to have lived downwind from a sunglass factory smokestack (Edelson, 2002). Other researchers (e.g. Rimland, 2000) are adamant about the seemingly causal relationship between childhood vaccinations and the onset of symptoms associated with ASD's including autism. Rimland says that the increase in the onset of ASD's at age 18 months began in the 1980's when the triple MMR vaccination began to be used extensively. Up until that time, the most common time of onset was birth (Rimland, 2000). Other researchers have suggested that the data can be interpreted to demonstrate that autism is caused by an interaction of genetic predisposition and the early introduction of environmental triggers. These triggers could include vaccinations and antibiotics, as well as environmental toxins (Gleberzon & Rosenberg-Gleberzon, 2001).

Therapeutic approaches to autism include parental counseling, behavior modification, highly structured school settings, sensory integration therapy, speech therapy, special

diets, vitamin therapy, medication, and chiropractic adjustments (Gleberzon & Rosenberg-Gleberzon, 2001). In many cases the behavioral problems and more specifically the defining problems with communication and social interaction, are treated. Other successful treatments have included diets that exclude certain ingredients such as gluten and casein, which contain proteins that some individuals with autism cannot break down properly. Foods containing these products include milk, flour, bread, pasta, cheese, eggs, soy sauce, and sugar. Children on these diets also often consume large doses of megavitamins (Fisher, 2000).

Socialization

Lack of social competence in children can prove to be a handicap in areas other than social development. Pellegrini and Glickman (1990) asserted that the social competence of pre-kindergarten children was an indicator of their first grade success. Hartup noted, "the single best childhood predictor of adult adaptation is not school grades, and not classroom behavior, but rather, the adequacy with which the child gets along with other children" (1992, p. 1).

A social attributes checklist was developed based on research (Katz & McClellan, 1997) in which the behavior of well-liked children was compared with that of less well-liked children. The result was a checklist of social attributes of typical childhood behaviors. Observations indicated that the typical child:

1. Is usually in a positive mood.
2. Is not excessively dependent on adults.
3. Usually comes to the program willingly.
4. Usually copes with rebuffs adequately.

5. Shows the capacity to empathize.

6. Has positive relationships with one or two peers; shows the capacity to really care about them and miss them if they are absent.

7. Displays the capacity for humor.

8. Does not seem to be acutely lonely.

9. Approaches others positively.

10. Expresses wishes and preferences clearly; gives reasons for actions and positions.

11. Asserts own rights and needs appropriately.

12. Is not easily intimidated by bullies.

13. Expresses frustrations and anger effectively and without escalating disagreements or harming others.

14. Gains access to ongoing groups at play and work.

15. Enters ongoing discussion on the subject; makes relevant contributions to ongoing activities.

16. Takes turns fairly easily.

17. Shows interest in others; exchanges information with and requests information from others appropriately.

18. Negotiates and compromises with others appropriately.

19. Does not draw inappropriate attention to self.

20. Accepts and enjoys peers and adults of ethnic groups other than his or her own.

12. Interacts nonverbally with other children with smiles, waves, nods, etc.

22. Is usually accepted versus neglected or rejected by other children.

23. Is sometimes invited by other children to join them in play, friendship, and work.

24. Is named by other children as someone they are friends with or like to play and work with. (Katz & McClellan, 1997, Social Attributes Checklist section, ¶ 1)

Admittedly this checklist was biased toward the typical child, however, the inclusion of this checklist was cogent to the argument that the social behaviors of autistic children are relative to the norm as noted above.

A less biased list of indicators of socialization was noted as Hauck, Fein, Waterhouse and Feinstein (1995) used the following indicators of socialization in a study of the social interaction of children with autism. They included the use of eye contact, joint attention (defined as the direction of another person toward shared interest in an object of event), greeting, giving and receiving comfort, imitation, verbal interaction, and awareness of presence.

Although the lack of socialization is one of the most disabling and defining characteristics of autism (Zanolli, Daggett & Adams, 1996), it also may be the one aspect of research that holds the key for progress in the field (Schreibman, 1996). In a report making the case for research into the socialization of children with autism, Schriebman (1996) said, "...it is to social and behavioral intervention [research] that people involved with helping children and adults with autism have looked for direct assistance; it is here where people currently look for treatment options and it is here where we will continue to look for years to come" (p.248).

Socialization of Children with Autism

In spite of the changes in understanding (or lack thereof) the cause and cure for autism, one aspect of this condition has remained unchanged. The overriding symptom reflected in the root of the word autism is that all patients diagnosed with this condition lack in their ability to relate to other individuals. Aarons and Gillens quoted Uta Frith in their book, *The Handbook of Autism* (1992). According to the authors, Frith summed up

the social inability of children with autism in her book *Autism: Explaining the Enigma* with the following quote:

> To identify the core features, we had to look below the surface of the symptoms. It was then that we could see the red thread that was running thorough the evidence. It is the inability to draw together information to derive coherent and meaningful ideas. There is a fault in the predisposition of the mind to make sense of the world. Just this particular fault in the mechanics of the mind can explain the essential features of autism. If we lose sight of this fact we lose sight of the overall pattern. (p.14)

All people with autism suffer in some way the inability to relate in the socialization process. By definition, people with autism demonstrate the inability to make sense out of the ideas of others and therefore cannot link in meaningful relationships with others (Edelson, 1999).

The effect of the condition on the socialization process differs greatly among patients since the diagnosis encompasses a broad definition of symptoms (Dunlap & Fox, 1999). Autism is often used interchangeably with the ASD terminology, which is described as a spectral disease, meaning that the distinguishing characteristics reside on a continuum. Emerging from this continuum are sub-classifications presenting symptoms that overlap (Gleberzon & Rosenberg-Gleberzon, 2001). For instance, Asperger's Syndrome, first defined by Hans Asperger (Aarons & Gillens, 1992) during World War II, is characterized by people who are sociable and verbally skilled, yet highly clumsy (Aarons & Gillens, 1992). Edelson (1997) added that Asperger's Syndrome is characterized by very literal concrete thinking, obsession with certain topics, and often individuals with this syndrome are thought of as being eccentric. Of all of the conditions that carry the

ASD label, Asperger's syndrome is the one that has the most promising prognosis. These children are likely to become independently functioning adults, although they are also likely to experience continued problems with relationships (Barstow, 1999). Although highly intelligent, persons with Asperger's Syndrome tend to be poor incidental social learners and will go to extraordinary means to make sense of social situations (Bock, 2001). Often, they are very narrow in focus and apply rules to social situations that are inflexible and do not allow them to navigate new social situations. Bock (2001) cited the following example.

> Barry, a young adult with Asperger's Syndrome, developed an elaborate system to select a date. He observed that many gentlemen his age date more than one lady at a time and tended to date each for 2 years or less. Consequently, he calculated the mean, or average, number of girls each of his male acquaintances dated at one time as well as the mean duration for each relationship. Based on his calculations, he decided to identify two girls to date at the same time and to date them each for 1 year. He would then identify two different girls to date the next year. (p. 273)

Four other syndromes associated with autism and its social implications include Landau-Kleffner Syndrome, Williams Syndrome, Rett's Syndrome, and Childhood Degenerative Disease (CDD). People with Landau-Kleffner Syndrome may withdraw socially, insist on sameness, and display language problems. Williams Syndrome is characterized by language delays, sound sensitivity, attention deficits, and social problems (Edelson, 1999). Rett Syndrome is a degenerative disease, which affects primarily females. These patients display normal growth for the first six to eighteen months of life (Barstow, 1999). Then the normal development slows down, especially the

growth of the head and the development of the hand skills. (Gleberzon & Rosenberg-Gleberzon, 2001). Some of the characteristic behaviors include loss of speech, hand wringing, body rocking and social withdrawal. Profound mental retardation may also accompany this condition. Childhood Degenerative Disorder, also known as Heller's Disease, develops between two and ten years of age and is characterized by normal development prior to the onset of symptoms. Then, deterioration in the ability to understand language and interest in play and social activities begins.

Also associated with the broad autistic labels is Fragile X Syndrome, which is most commonly identified as a form of mental retardation. However, 15 % of the patients with Fragile X Syndrome also display autistic behaviors, including those reflective of poor socialization skills. These behaviors are evidenced by a delay in speech, hyperactivity, poor eye contact and hand flapping (Edelson, 1999).

There is evidence that these responses of autistic individuals to social situations may be physiological in nature. Based upon interviews with autistic adults, Edelson (1997) suggested that certain sensory stimuli can create a hypersensitive reaction. The external effects such as the timbre of a voice, the smell of perfume, or the sense of being touched that are peripheral to the formation of social relationships for typical individuals, may play a more central role for the individual with autism (Edelson, 1997). As reported by Dejean (1998), Jean Ayers's theory of sensory integration might shed light on this difficulty with the socialization process. Ayers's theory states that individuals with sensory processing problems cannot sort out sensory stimuli and this lack of

integration can cause atypical reactions to tactile, vestibular, auditory, olfactory and visual input.

Additionally, research conducted by Panksepp and reported by Edelson suggests that beta-endorphins are released in the brain during social behavior. These are pleasant opiate-like substances. There is also evidence that the beta-endorphins in autistic individuals may be so elevated that they do not sense the physiological need to rely on social interaction for pleasure. In support of this theory, some researchers looking at beta-endorphin blockers have seen an increase in social behavior in autistic individuals (Edelson, 1997).

Despite this connection between physiology and social behavior, the fact remains that individuals with autism are poor incidental social learners. Typical children take many of their clues for social behavior from the environment, but children with autism often fail to understand nonverbal clues such as eye contact, posture, voice intonation, and facial expression (Bock, 2001).

In fact, one causation theory for a portion of the social ineptitude of people with autism may be their inability to connect the perception of the facial expression to the appropriate social judgment (Adolphs, Sears, & Priven, 2001). In one study, subjects with autism were shown faces of unfamiliar people and asked to judge how much they would trust the person. The majority of the subjects gave abnormally high ratings of trustworthiness to unfamiliar faces. This experiment, coupled with other components of the study, lead the researchers to believe that people with autism may understand basic social customs and may be able to read facial expressions as a means of social communication as well. But the researchers concluded from this study that autism may

feature an inability to retrieve the normal social behaviors and knowledge on the basis of visual representations of faces. That is, people with autism may not be able to make the connection between a facial expression and the appropriate response, even though they understand both. The researchers also said that this result can be correlated to other people who have an amygdala dysfunction, and that this may indeed be where the malfunction of autism resides (Adolphs, Sears, & Priven, 2001).

One technique that has been used to encourage the initiation of social behaviors is the use of priming. Zanolli, Daggett and Adams (1996) discussed the use of a priming strategy prior to interaction to encourage children to initiate social behaviors with their peers. In the priming session, the child with autism was to direct social behaviors to a trained peer, prompted by the teacher. The reward for this priming activity was the response of the peer and the delivery of an object to the child with autism by the peer. This priming immediately preceded normal play activities with no prompts by the teacher. The outcome of this study was that the initiations of social behavior increased after the priming was completed, however, the authors did note limitations of the study including the use of peer training.

As Edelson (1997) put it, children with autism lack "theory of mind", meaning that they appear to have difficulty realizing and understanding that other people have their own thoughts, plans, and points of view. Harmon agreed as she asserts, "Communication and appropriate social behavior are inseparable, especially for a child with autism...inappropriate behavior may be caused by the inadequate development of communication. Conversely, behavior may be interfering with communication" (1995, p.1). The result is the inability to form social bonds in

companionship with others. As a result of these studies, theory of mind training is another approach used by researchers (Ozonoff & Miller, 1995) to improve the social interactions of people with autism. The idea behind the research was to equip adolescents with autism with the skills necessary to infer the mental states of others. The training in theory of mind principles did substantially improve the performance of the treatment group in this study, however, the researchers' impression was that the ability to translate these newly learned principles beyond the research environment to everyday applications remained limited. The implication was that individuals with autism can be trained in complex social behaviors, but the regular performance of these skills is not guaranteed simply by the possession of these skills (Ozonoff & Miller, 1995).

Although socialization is the biggest lack in children with autism, designing and implementing group settings for people with autism is a challenge due to the diverse nature of the condition. Coffey and Umbarger (1967) stated that a group composed solely of autistic children was likely to be incapable of initiating or sustaining interactions that could result in even a minimal level of group process. An interesting study related to the nature of autistic group interaction was conducted at the East Bay Activity Center (Coffey & Umbarger, 1967). In this study, two playgroups were formed, both of which included children who were autistic and those who suffered from behavior disorders not associated with autism. The main problems of the children who were behavior disordered included the mishandling of aggression and their academic performance, but there were no problems associated with normal social function. The groups were observed for a period of time, and quantitative as well as descriptive data

were collected. From this study, two conclusions were drawn. First, much of the progress made by the children with autism might be attributed to the individual and psychological treatment received prior to the study. The second conclusion is that in any group setting, whose goal is to affect the social treatment of children with autism, there should be at least two typical children. Additional conclusions asserted that the typical children in the group maintained their level of social adjustment over a more extended period-of-time. The general impression of the staff executing this experiment was that those children who made the most progress in social interaction were those who had interacted with their peers more (Coffey & Umbarger, 1967). Even though this may sound like a less than profound outcome, it does indicate one very important point. Those children in the study who interacted more with the group eventually began to act more in accordance with the group. The question arises whether a camp setting, normally a hub of socialization, that is composed solely of children with autism will in and of itself lead to more interaction than the classroom. This study indicated that research should be completed on the setting of the behavior and not the behavior itself.

This point of view is in agreement with Hauck et. al.(1995) who said that although much research looking at the nature of autistic social behavior and the types of behavior issued from various partner relationships had been completed, the setting of the behavior had been overlooked (1995). These authors asserted that although studies by Attwood, Frith and Hermelin in 1988 recorded social behavior within different settings, the behavior between the settings was not compared. Hauck et. al. proposed (1995) that in addition to the structure of the activity and the people involved in the activity, the social response of the individual with autism might be affected by the setting.

As understandings of possible causes and treatments of autism have evolved from the concept of bad parenting to genetic factors, one symptom of the disease has remained constant. That common thread or symptom is the inability of the mind to form a meaningful connection to others. This common thread makes the parenting of a child with autism especially difficult.

Parenting Children with Autism

Thirty years later, the words of Kozloff (1973) are still true "...the lives of his (the autistic child) parents have been full of constant torment from their own feelings of guilt, frustration, and hopelessness" (p. 3). Fasick reported, "They [parents of children with autism] often feel isolated from families, friends and a normal community life. Caring for children with special needs absorbs a great amounts of time and energy from the parents, ultimately taking away quality time from siblings and from the parental couple's own relationship" (1998, Introductory section, ¶ 1).

Not only are the parents of children with autism called upon to deal with the daily life of a child with autism, but they also suffer from society's lack of understanding of the problem. Some of this misunderstanding is likely a holdover from the early history of this affliction. In *The Empty Fortress*, Bettleheim wrote, "Kanner himself convinced of both the inborn nature of the disturbance and the parents' contribution..." (1967, p.406). Additionally, Bettleheim himself stated, " ...the reconstructions and study of the assumed cause of the disturbance (the mother) seem to have taken the place of the study of the disease itself. And this is even more so in regard to the severest form of childhood psychoses, infantile autism. Direct connections have been established between maternal attitudes...and the behavior of the schizophrenic child..." (1967, p.407). He went so far

as to use the term "refrigerator mother" (1967, p. 107) to refer to the parental role in the etiology of the disease. Even with the passage of time, old ways of thinking became ingrained for generations, and there are still parents who are living with the idea that they are bad parents. Informal educational settings that welcome and engage children with autism are bound to be popular with parents of children with autism.

Even though the understanding of causal factors for autism has evolved beyond blame being cast on parenting, there are current studies linking the caregiver's perception of the child with autism to interaction with the child (Kassari & Sigman, 1997). In this study, it was determined that caregivers of autistic children who judged the children to be more difficult were observed to be less engaged with their children. However, in contrast, children who had more severe symptoms appeared to be more responsive to their caregivers. The researchers explained this counterintuitive set of findings by the hypothesis that children with greater symptomatology often were the recipients of more physical contact by their caregivers, but were not necessarily engaged in social interaction with these caregivers (Kassari & Sigman, 1997).

Sigman participated in a related study that examined the synchronization of focus between the caregiver and the child. The study's intent was to investigate the chasm of language development in children with autism. Some children with autism acquire very good language skills and others remain non-verbal. The study reported two findings. The first was that caregivers of children with autism are able to synchronize their behaviors to their children with autism as much as those caregivers to children without autism. This is remarkable, given the fact that it is often difficult to know the focus of the child's attention. The second finding was that children, whose caregivers showed higher levels of

synchronization during initial play, developed higher communication skills over a period of one, ten, and sixteen years (Siller and Sigman, 2002).

Parenting children with autism is difficult. Not only do the emotional demands placed on the parent with autism exceed those of a typically developing child, but the options for respite care are limited by the lack of understanding of society. Additionally, the life of the family revolves around the needs of the child with autism, who will need special consideration for the appropriate educational setting.

Teaching Children with Autism

When creating instructional formats for children with autism, socialization issues must be taken into account. In particular, the problems associated with understanding and using language for communication must be considered. Effective teaching for children with autism happens in small groups and visual systems, sign language and augmentative devices are often used in the classroom. Activity-based instruction is a meaningful approach for students with autism. A structured system with skills embedded in activities is a descriptor of this approach. For instance, a routine would be developed for the student and within that routine the skills would be added through activities. As for discipline, one of the current approaches is positive behavior support, which gathers information about the function of the behavior and then teaches alternatives to the behavior problems (Dunlap, 1999).

In an attempt to teach socialization skills to children with autism, the SODA method was developed (Bock, 2001). This method teaches children as they enter new situations to Stop, Observe, Deliberate and then Act. Each of these words contains questions that the child learns to ask himself about the situation before acting.

Other research (Roeyers, 1996) showed that non-handicapped peers can be effective in teaching social skills to students with autism, and this evidence has convinced many that school- aged children with autism should be placed in settings where positive behaviors can be modeled (Wagner, 1999). Proponents of this inclusion philosophy believe that a good way to teach socialization to students with autism, is to give them the opportunity for social involvement with typically developing peers. Wagner also stated that special training for both the teacher and the typically developing students was a necessary part of a good inclusion program.

Teaching strategies for children with autism include the praising of appropriate interactions as well as the redirection of inappropriate behaviors. This redirection takes the form of an explanation of the rationale for the appropriate behavior instead of merely a correction of the behavior. The following example was given by Wagner (1999). "Johnny grabs the crayon from Billy. Teacher says, 'Johnny, do you want a crayon?' Johnny does nothing. Teacher says, 'You can ask Billy for that crayon" (p. 44). Other strategies include cool down space, the use of concrete language, non-verbal (gestures/sign) language, visual schedules, eye contact and consistency (Wagner, 1999).

For the young child with autism and the older child with limited communication skills, the Picture Exchange Communication System (PECS) has proven helpful (Cumin, Leach, & Stevenson, 2001). The PECS system uses symbol cards for various activities and objects. The symbols are taught to the child as the teacher allows the child to exchange the picture for the real object. For example, a glass of apple juice may be exchanged for a picture of a drink. More symbols are added as the child becomes more at

ease with the system, and eventually the child will use sentence stems such as, "I want," with PECS.

Another teaching format that is used with children with autism is the discrete trial. Usually this practice occurs in an isolated setting with minimal distractions. The session contains several sequences that are identical to the one before it and has a definite beginning and end. The idea is to use repetition in a controlled setting to teach behaviors (Zager, Shamow, & Schneider 1999). However, Zagner, Shamow and Schneider stated that the discrete trail may not be the most effective way to teach children with autism They said, "In the natural worlds behavior is continuous, not discrete…In order to foster the generalization of newly learned behaviors, teachers must bring these skills under the control of the more natural contingencies" (p.120).

Camps

Even though camps exist in a variety of forms, including day, private, church, agency, outdoor education, primitive, handicapped, specialty, sport, and travel, one historical characteristic binds them all. As Gibson (1974) said, "[The history of camping] is interwoven with the emphasis upon the child (the person), the group and the use of group interaction" (p.10). The emphasis is on the group experience no matter the type of camp. Two of the rationales Gibson gave for camp include:

1. A single purpose environment where all of the efforts are directed toward people centered goals.
2. No externally imposed time barriers to disrupt goal attainment.

The American Camping Association conducted a study (Scanlin, 2001) to identify "what camp was about" (p. 30). Directors, staff and campers from both day and resident

camps were asked to list the most important outcomes of camp and all three groups listed social competence as the first objective of the camp experience. The top three components of this social competence were identified as making new friends, getting along with others, and learning to work as a team.

All of these objectives for the implementation of a positive camping experience, whether day, resident or otherwise would seem to be diametrically opposed to the one common characteristic of the child with autism. Research noted earlier refers to the lack of social/group interaction as a common definition for all types of autistic spectrum disorder and the need for rigidity in the time/structure of the autistic child's experience. In 1976, the Information and Research Utilization Center distributed a report titled Physical Education, Recreation, and Related Programs for Autistic and Emotionally Disturbed Children. In this report, a study by Margaret Dewey listed the recreational preferences of children with autism. Included in these preferences were somewhat compulsive activities such as driving nails, taking things apart, sharpening pencils as well as more readily accepted recreational pursuits such as collecting various items, listening to music, and swimming (U.S. Department of Health, Education and Welfare, 1976). Once again, the most notable common characteristic of all of these recreational pursuits was the fact that they could all be accomplished by one child without the need for group interaction or socialization.

In a study conducted to determine the extent to which campers with disabilities attend mainstream camp sessions and program activities, the American Camping Association (ACA) concluded that campers with disabilities comprised only about 9 per cent of the total population sample. The results of this study indicated that camps strive to include

people with disabilities in programs, yet only 23 per cent of the camps in this survey served children with autism (Brannan, 1997).

Indicators of Social Interaction Among Children in a Camp Setting

One of the possible therapeutic treatments for children with autism was defined as a highly structured environment with intensive individual instruction. (Andolsek, 1998). The connotations of highly structured and individual instruction do not necessarily fit with the assumptions made about the traditional social interactions in a camp setting. However, it may be possible that the structuring of certain activities coupled with peer preparation can positively affect social interactions.

Schleien, Mustonen and Rynders (1995) conducted a study in a children's museum setting designed to evaluate the effect of an inclusive group setting on the social interactions of children with autism and non-disabled peers. The study found that non-disabled peers initiated social interaction more frequently toward the children with autism during this intervention than during a pre-study baseline evaluation. The study gave credit for this increased level of interaction to the use of cooperatively structured art activities, and a preparation session that included training the non-disabled peers in how to encourage children with autism to participate in the joint activities. A couple of caveats to this study included the fact that the social interactions varied according to the art activity. Those activities that tended to be more interesting to the individual such as playing with clay or crayons tended to reduce the number of interactions. Also, the interactions initiated by children with autism did not increase during this time. Even though this study did not show an increase in the initiation of social behaviors of the

children with autism, it was indicative that the interactions of non-disabled peers could be manipulated to create a social community surrounding the child with autism.

This researcher discovered three camps that cater to the needs of children with autism (S. Hansen, personal communication, August, 2002). These camps were not affiliated with any institution, but were outdoor camps run for the specific purpose of providing a camping social opportunity for children with autism. Camp Awareness was one of these camps located in the Indianapolis area. (The other two are in Kansas City and Minnesota.) The unique feature of Camp Awareness was that it is an inclusive camp in which the curriculum meets the needs of children with autism, but each child with autism also had a typically developing buddy, the same age or older than the child with autism. The director of the camp had not completed any formal evaluation of the camp other than the fact that she had a number of campers who returned each year.

This information about the definition of autism, causes and therapies for autism, adult roles with children who have autism, socialization, and camps provided the foundation from which to address the questions in this study. If children with autism are defined by their lack of social ability, and camps are defined as places for socialization, what did it look like when the two met on common ground? What was the social behavior of children with autism when they were observed in the camp setting? Was the classroom behavior of the children different from the camp behavior? Were the behaviors observed in the children similar to the behaviors described in this literature? The answers to these questions were sought as the design of the study was executed.

CHAPTER III: METHODOLOGY

Theoretical Framework

This project was framed as an observation study approached by a researcher who leans toward a postpositivist approach to research. This statement laid the foundation for this investigation into the social interactions of children with autism in a camp setting, and indicated the underlying assumptions of the study. Hatch (2002) noted that any qualitative research project begins with the paradigm of the researcher and that this philosophical approach should flow naturally to the questions being addressed.

The researcher's paradigm formed an important basis for the research since it was the lens through which the investigation was viewed (Hatch, 2002). The lens through which we view issues, questions, objects, and life in general is a determiner of the way we see the nature of truth. Since the very nature of research is a search for the understanding of a given circumstance, the researcher's paradigm from which that understanding is viewed becomes very important. The following analogy may serve as an explanation. A white door viewed through a yellow lens is still a white door but the perception of that door appears to be yellow to the one viewing it. The researcher with a postpositivist perspective realizes that he/she does not know the true color of the door he/she sees but believes that there is a door, the color of which may never be known or understood. The postpositivist believes that truth does exist but believes the limits of human understanding prevent the complete knowing of that truth. The underlying paradigm for this research study was that some truths could be understood about the relationship between the environment and the social behavior of children with autism. Yet, because the researcher

had postpositivist assumptions, she knew that the discovered truths were only the truth as seen through her own lens, and not the absolute truth.

This research project, exploring the behavior of children with autistic spectrum disorder in a camp setting, was not intended to reveal the existence of an absolute truth. The social interactions that occurred in this camp setting could not be quantified, since the way in which children with autistic spectrum disorder present themselves as socially inhibited (Edelson, 1997) is the opposite of the nature and goals of most camp settings, which are centered on social community (IRUC, 1976). Therefore, there was no quantifiable way to define the truth connected with this question; it is instead a truth that was constructed in the actions of the campers as observed by the researcher.

A sub-question addressed in the study was related to a parent's rationale in sending a child with autism to camp. Freeman (1993) advocated that parents treat their children with autism as normally as possible and as much as possible expose them to the typical rites of passage in childhood. Did parents of children with autism consider that exposure to a "normal" childhood was a reason to engage their children in camp settings? Was the motivation for sending the child to a camp one of respite for the parent, or was there a hope that the camp would prove to be therapeutic for the child? There may not be a single answer to the question, therefore the use of a postpositivist paradigm to interview parents was a reasonable method of answering this question.

Validity and reliability issues might be questions that readers of this qualitative research would like to see addressed. In addressing the validity and reliability issues of the qualitative study, Marshall and Rossman (1995) repeated four constructs first identified by Lincoln and Guba (1985). The first was that the validity of the research is

embedded in the data derived from the setting. An in-depth description of the variables and interactions rendered the study valid within its own setting. The second construct concerned the issue that reliability or applicability in this type of study resides with the researcher who made that application to other situations, rather than the original researcher. It is up to the researcher reading this study to determine if the theoretical parameters of the research lent themselves to a new setting. The third construct was one of dependability in which the researcher accounts for changes in the phenomena studied. From the qualitative perspective, the social world is always changing and this change is planned for with a design that allows for refinement as the understanding about the world evolves. Finally, confirmability captured the traditional concept of objectivity. This was accounted for by the treatment of the data itself, as noted by routines in the collection and analysis of data, which included checking and rechecking the data, value-free note taking, and the development of an audit trail (Marshall & Rossman, 1995). Patton (1990) put the burden for reliability of the qualitative study directly on the shoulders of the researcher. He noted,

> The validity and reliability of qualitative data depend to a great extent on the methodological skill, sensitivity, and integrity of the researcher. Systematic and rigorous observation involves far more than just being present and looking around. Skillful interviewing involves much more than just asking questions. Content analysis requires much more than just reading what's there. Generating useful and credible qualitative findings through observation, interviewing and content analysis requires discipline, knowledge, training, practice, creativity and hard work. (p.11)

The hard work required to produce a credible qualitative research project began with an examination of the researcher's approach to truth. The question addressed in this study flowed naturally from a postpositivist paradigm since the nature of the social interactions of children with autism in a camp setting was not a question with an absolute answer. The investigation and reporting of these interactions was more meaningful in a qualitative design.

Research Design

The rationale for designing a qualitative study to investigate the behavior of children with autism in a camp setting was found in the following quote from Spradley as he addressed the emerging appreciation for qualitative research: "There has come a profound realization that people everywhere have a way of life, a culture of their own, and if we want to understand humankind we must take these cultures seriously" (1980, p.v). Children with autism are said to live in a world of their own. Through careful study of this world, a greater understanding of these children can be realized. In this study of the camp and classroom culture of the child with autism, descriptive rather than quantifiable data proved more valuable, since it is difficult or at least rather meaningless, to quantify data collected for the purpose of understanding the nature of the behavior of an autistic child in this setting. The researcher did not measure the number of interactions between children but rather she recorded the nature of those social interactions. In this way the process of socialization was examined between the two settings.

Further corroboration of the validity of choosing a qualitative method for the investigation of social behavior differences in the classroom and camp setting for children with autism was found in the thoughts of Zyzanski, McWhinney, and Blake

(1992). These authors contended that qualitative methods are the methods of choice for the investigation of new ideas. As demonstrated by the review of literature, research on the socialization processes of children with autism in the day camp setting was practically non-existent, and the current research called for more investigation of the effect of setting upon the socialization processes of children with autism (Hauck, et al, 1995).

The rationale for the researcher's selection of a qualitative design for this study was further corroborated by Patton (1990) with the statement, "A naturalistic inquiry is selected when the evaluator wants to minimize research manipulation by studying naturally unfolding program or treatment processes and impacts..." (p.43). The degree of social interaction between campers and teachers was an observable process that should not have a set of predetermined measures imposed upon it.

Context

The socialization phenomenon takes place in a natural setting and takes its meaning from its context. It cannot be understood outside of its relationship to the time and context that gave rise to it. While quantitative studies of behavior produce responses that show how the participants may behave, these studies almost never show how the respondents behave in context (Patton, 1990). A study investigating the interactions of children in a summer camp setting must take place in a summer camp setting. Additionally, the observed interactions in the summer camp setting needed to be described in relation to other settings. That is, the summer camp social interactions could have more relevance if described in relation to social interactions in other settings.

The contexts for the study were both the school classroom and summer camp settings designed specifically for children with autistic spectrum disorder. The school classroom

setting was the Siskin Children's Institute and the camp setting was Sensory Camp held at Creative Discovery Museum in the summer of 2002. Both of these institutions are located in Chattanooga, Tennessee.

Siskin Children's Institute (SCI) is a private educational institution designed to serve the needs of the special needs child, however, it was also a contract provider of these services for the Hamilton County school district. The student population of SCI ranged in chronological age from birth to seven years. The mission of the institute was to "improve the quality of life for children with special needs and their families through excellence in education, support services, advocacy and community partnerships" (www.siskin.org).

Creative Discovery Museum is a non-profit children's museum whose mission is to "stimulate the creative spirit and natural curiosity of every child, and to create an excitement for learning through interactive exploration of the arts and sciences" (see Appendix C). As a part of this mission, Creative Discovery Museum served approximately 170,000 individuals yearly through a menu of more than twenty programs and 42,000 square feet of exhibit space. Included among these programs was a four-year history of serving three hundred children annually through day camp programs. Summer of 2002 marked the second year that the Museum had served as the venue for the Sensory Camp, providing a two-week summer camp experience for up to twelve children with autism. At the time of this study, Creative Discovery Museum was the only institution in the Chattanooga area providing this type of experience.

Other collaborators in the Sensory Camp program included: Signal Centers, an institution serving the same population as Siskin Children's Institute; T.C. Thompson Children's Hospital, providers of physical therapist interns for the program, and the

University of Tennessee at Chattanooga Occupational Therapy department, a provider of occupational therapy interns. The camp setting was the Sensory Summer Camp, held for the second year at Creative Discovery Museum

Creative Discovery Museum was chosen as the location of the Sensory Camp because its exhibits are multi-sensory and provided readily accessible activities for the camp participants. Additionally, the museum staff developed and implemented activities for the campers with the guidance of the other collaborators.

Permission to observe the selected participants and to examine their educational records was obtained from the Director of Education of Siskin Children's Institute (see Appendix D). A research bargain (see Appendix D) committed the researcher to forward copies of the draft of the research, without inviting affirmation of its contents, since the personnel of Siskin Children's Institute were not be directly involved in the camp. This document of understanding set the dates of the classroom observations and the director advised the researcher concerning the proper forms to be used to obtain parental consent. Additionally, teachers in the classrooms were aware of the observations and the purpose of the study.

Permission to use the camp setting was obtained from the Executive Director of the Creative Discovery Museum (see Appendix D). The permission agreement contained the same points of agreement as the research bargain used for Siskin Children's Institute.

The researcher was employed by Creative Discovery Museum as Director of Education, and the Museum's camp manager directly reported to the researcher. With this arrangement, it could be considered problematic that this camp context was too familiar to be viewed from the outside perspective important to quality research. However, it

should be noted that the sole responsibility of Creative Discovery Museum was to provide the housing for the curriculum and some of the activities to fit into the curriculum. Additionally, the camp manager was solely responsible and accountable for the success of the camp. The role played by the researcher in this camp was one of budgetary approval. The outsider's point of view was present in this study.

Participants

The participants observed in this study were limited to those children registered for the camp, and also enrolled in the Siskin Children's Institute. Once the campers were identified by Siskin Children's Institute, which was solely responsible for the camp selection process, three children were named as participants in the study and parental permission was obtained. Copies of the parental permission were forwarded to both institutions and were a precursor to the university's Institutional Review Board's approval.

Data Collection

The questions posed in this study and the accompanying methodological theory of the study called for participant observation of campers, parent interview, examination of the camp and classroom curricula, and review of the participants' educational records as methods of data collection.

Observation

The postpositivist approach to studying how children interact with each other and how teachers interact with children in camp settings includes observing those interactions, particularly in comparison with interactions in the classroom setting. Although, on the surface, observation may be dismissed as simply looking, it is a

complex and useful tool for the qualitative researcher. "Scientific inquiry using observational methods requires disciplined training and rigorous preparation" (Patton, 1990, p.200). This training included learning how to write descriptively, taking disciplined field notes, and determining methods to validate field notes. Additionally, the field researcher must be prepared for the observation. This preparation takes the form of mental, physical, intellectual and psychological dimensions, particularly as it required enormous amounts of concentration (Patton, 1990). Even though the researcher did not formally train for this study, she did prepare mentally for it by studying researchers such as these. She also found that Patton was correct in the enormous amount of concentration demanded just for taking the field notes.

The extent of participation in an observation can be represented on a continuum that varies from complete separation as an onlooker to immersion in the setting as a full participant (Patton, 1990, p.206). Spradley (1980) describes five degrees of observation ranging from the non-participant without involvement to the complete involvement of the researcher in the observed behavior. Included in the middle of this continuum is the passive observer who is simply maintaining an observation post in the midst of the behavior to be observed. The moderate participant maintains a balance between being an insider to the phenomenon under investigation, while the active observer does what the participants do. The observer who studies a situation in which he/she is already a participant is another type of participant observer. For this study, the researcher was in the middle of the continuum in the context of the camp setting and took a passive role in the classroom setting. The reason for this difference was the environment. Since the camp setting was in the museum, there was no concealed point from which to observe. In the

classroom setting, the only place from which to observe was the observation room that had a concealed window onto the classroom. During recess and other out of classroom times, the researcher was forced to assume the more middle ground described by Spradley (1990).

The purpose of the participant observer was to become as familiar as possible with the activities of the setting under study. Spradley (1980) described three types of observation that take the participant observer from general to specific. The objective of the descriptive observation is to get an overview of the entire situation to see what happens in the culture being observed. The research should then narrow to the focused observation so that the researcher identifies those activities he/she feels will best answer the questions raised by the study. Finally, after initial data analysis, the observation becomes selective in nature and the researcher looks for differences among the identified specific categories of the culture (Spradley, 1980). The observer begins with broad descriptions of the three primary elements under investigation, place, actors, and activities and continues to narrow the focus to selective observations of these same elements (Spradley, 1980). This narrowing of focus took place during the series of observations for this study. In both the museum and the classroom sets of observations, the focus was narrowed through a series of daily informal analyses, which identified the primary question that should be addressed during the following day's observation.

Camp observation data were obtained by observing the three participants during the three-hour camp session daily for the duration of the two-week camp for a total of thirty hours for the three children. The selected children were observed in the camp setting primarily in terms of their interactions with other children and teachers. Since

approximately one-half of the camp curriculum took place in the Museum's public space, any interactions between the observed camp participants and Museum guests were also noted.

As a point of reference, observation of the same participants in the classroom setting were conducted by the researcher over a period of a month for a total of fourteen hours. The observations occurred in two-hour blocks of time. Arrangements were made with the teacher for the researcher to come into the classroom for two-hour blocks of time for seven days.

Interview

The interview of the participants' parents was another means of data collection used in this study. The goal of this interview was to understand more fully the reasons that the parents chose to send a child with autism to camp. The question concerning parent choice in the matter of camp for children with autism was addressed through a group interview facilitated by the researcher. Leedy (1997) referred to the use of the semi-structured interview as a fit for a qualitative research. This semi-structured interview began with a series of structured questions but then allowed for probes to obtain clarifying information. Guidelines the researcher used in conducting this interview were suggested by Leedy (1997) and included the following.

- Explain the benefits of the research to the respondents.
- Talk less than the respondents. The more the interviewer talks the less information is produced.
- Ask questions that contain a single idea.
- Use a simple probe such as, "Can you tell me more about that?" (p. 199)

Patton (1990) supported the use of the interview as a means to find out what is in and on someone's mind. The purpose is to access the perspective of the person being interviewed and to find out those things that cannot directly be observed. He agreed with Leedy that the quality of the information obtained in the interview is largely dependent upon the interviewer. Patton also discussed the use of the group interview, to create synergistic thoughts and insights. He called it qualitative data that can yield deeper understandings into the personal understandings and experiences of the respondents. He also noted that the interviews provide an efficient method of qualitative data collection as, in the same amount of time, information can be gathered from a larger number of people, and the participants tend to provide a system of checks and balances for each other.

Weaknesses of this method include the skill level of the interviewer in knowing how to manage the group process skills so that all people will have an equal chance to respond. To address this weakness, Patton recommended a group facilitator as well as a note taker in addition to the use of a recording device to aid in the transcription of notes (1990). The plans for this interview called for only three parents to be present, so it was easy for the researcher to make sure that all parents contributed equally. A note taker was not present but the interview was recorded using an auditory device, reassuring the researcher, who transcribed the interview, that all of the information was collected accurately.

The parents of the participant children were invited to attend this interview, which was held during a camp session in the first half of the camp. Only two of the three parents came to this interview. The parent of the third child was not present and could not be

reached, since the family had no telephone. Additionally, the child of this parent only came to camp one day. The interview lasted approximately one hour.

Review of Documents

One of the sub-questions of the study included the role that curricula played in the social interactions of children with autism in a camp setting. Since documents are a rich, reliable, and stable source of information (Lincoln & Guba, 1985), curriculum documents were obtained from the Sensory Camp 2002 and from Siskin Children's Institute, and used as a basis for comparing the curricula of the two settings. The qualities that make the setting, i.e. curriculum and environment, unique to a camp were determined through an observed comparison to those of the classroom. Without this aspect, the study would have been less significant. Even though curricula were noted in the observation phase, it was also helpful for the researcher to examine copies of the camp lesson plans as well as the lesson plans for the more therapeutic (as explained in the section of this study defining the camp setting) classroom setting for similarities and differences. Qualitative research methods supported the inclusion of artifacts such as this. Marshall and Rossman (1995) contended that the review of documents provides a system in which the facts of the observation can be checked in unobtrusive ways. Patton (1990) classified program documents as a particularly rich source of information and reminded the researcher of the importance of gaining access to as many program documents as possible.

Additionally, the researcher obtained permission to examine the educational records of the camp participants so that a more comprehensive picture of the participant's social interactions could be understood. The participants' educational records provided a basis for the comparison of the children's interactions and accounted for differences in

observed behavior. These documents included the child's Individualized Educational Plan (IEP), medical records housed at Siskin Children's Institute and certain test scores.

Limitations and Delimitations

As stated in the introduction, this study does have boundaries. Leedy (1997) states that the boundaries of a study should be as carefully defined as a parcel of land for a real estate transfer. The boundaries of this study included the Sensory Camp at the Creative Discovery Museum and the Siskin Children's Institute Class for Developmental communication during the fall of 2002. Although literature review references to the etiology, cures and prognosis of autistic spectrum disorders was cogent to understanding the participants to be observed, the focus of the questions was confined to the social behaviors of the participants. The Sensory Camp in 2002 was designed to be a therapeutic as well as recreational setting for the campers, but the only question addressed was how the group setting of a camp could be reconciled with the disease of autism.

Data Analysis

The outcome of the research took the form of an analytical answer to the question, what is the behavior of children with autistic spectrum disorder in a camp setting designed for these children as compared with a classroom setting? Further, an interpretation of this answer addressed the sub question, how are camp settings including curriculum, teacher interaction and environment, different from classroom settings for children with autism? The parent interview was analyzed in order to answer the sub question, why do parents of children with autism choose to send their children to camps. The answers to these questions came from a systematic analysis of the data.

Spradley (1980) referred to the analysis of qualitative data as follows: "Analysis of any kind involves a way of thinking. It refers to the systematic examination of something to determine its parts, the relationship among parts, and their relationship to the whole. Analysis is a search for patterns" (p.85). The search for patterns is one of the first steps in the inductive method of analysis and became the method used to organize meaning from the participant observation. As Okely stated, "Both during and after fieldwork, themes gradually emerge. Patterns and priorities impose themselves on the [researcher]" (1994, p.20). The imposition of themes made the use of the inductive method, as outlined by Hatch (2002), plausible for this study. Hatch recommended that a model of inductive analysis could include the following activities: search the data for frames of analysis, identify and code relevant domains, support those domains with data including a search for data that may not support the domain, complete analysis within and across the domains, outline the relationships identified from that analysis, and select data to support the outline.

Even though this appeared to be a structured and systematic way to approach the analysis of data, when the data were collected, they did not fit into nice neat categories. Patton (1990) could have been looking at this study when he wrote: "A qualitative design unfolds as the fieldwork unfolds. The design is partially emergent as the study occurs." (p. 61) It is for this reason that consistent thought was given to the nature of the data that had been collected and the possible need to shift the analytic focus to other themes present in the observation. This constant rethinking of the categories was also completed in an effort to delimit the data. "Without [the delimitation of the collected data, the study] will be less likely to yield an integrated product; the analyst is also more likely to waste

time on what may prove to be irrelevant incidents and categories" (as cited in Lincoln & Guba, 1985, p. 344). Simply put, using the inductive method meant that the data would be examined for specific trends related to the questions, but it was necessary to limit the scope of these trends, when confronted with the actual data. These trends were identified units of meaning that included vocabulary, individual behaviors, or events (Hatch, 2002). Lincoln and Guba (1985) defined those units of meaning as the smallest piece of information that is directly related to the question addressed by the researcher.

This analysis was done recursively, meaning that it was examined after each observation session so that the focus of the next observation could be determined. Since socialization is a phenomena reserved for humans, it is fraught with possibilities for unanticipated categories of data (Lincoln & Guba 1985). It is for this reason that the observation data were examined following each observation, so that new trends could be identified as they emerged.

However, during this process the frames of analysis remained constant. They were the questions guiding this study:

Research Question – What is the behavior of children with autistic spectrum disorder in a camp setting designed for children with autism as compared with a classroom setting?

Subquestion - How do children with autism interact with each other in a camp setting?

The starting point (frame of the analysis) for this analysis was the behaviors of the children with their peers, teachers, and environments.

From this frame of analysis, domains (or categories that have meaning within the frame of analysis) were created. Spradley (1980) identifies nine categories of domains. The most prevalent one found in the data for this study was strict inclusion. The

relationship expressed in this domain was "is a kind of." For example, sitting with an adult was a kind of non-vocal social behavior. Other relationships that were identified in the data included attribution, meaning "is a characteristic of." An example of this was laughing is a characteristic of a social attribute. Means-end, or "is a way to" was also located in the data. An example of this was, distracting the child as a way to help the child make a transition. The domain of location or "is a place where" was also used and an example of this is, the instrument room was a place where non-social behaviors occurred.

Once domains were completed for the camp and the classroom, an analysis within domains revealed the need to create domains for each child. Since the children were at different cognitive levels, as identified in their IEP's, and the researcher wanted to examine the three children's behavior in the two settings, six domain sheets were created. For this analysis the only relationship that was applicable to the frame of reference was strict inclusion. Finally, an analysis across the classroom and camp domains was created to determine the level of similar behaviors among the children. The behavior of the children in relation to identified attributes of social interaction (Katz & McClellan, 1997) was examined and finally a master outline (see Appendix B) was created from the information contained in the domain analyses and excerpts from the data were located to support the conclusions.

Once all of the data were collected and trends had emerged, patterns or categories were identified and coded. To gain support for the identified patterns, a search through the data for non-examples of the patterns was also made. Relationships among the patterns within the single observation and among the other observations were identified

as generalizations. Finally, once the generalizations were made, support for the generalization was gained by selecting data from the written observation (Hatch, 2002).

The data were reported as a narrative description of each child. That is, each child was described in terms of the collected data and was followed by a section entitled key findings. These key findings were the answers to the guiding question (What is the behavior of a child with autism in a camp setting?) as revealed in the inductive analysis of that data.

The parent interview was analyzed typologically. The two parents present (see interview subsection) spoke clearly on topics that could be easily divided into two categories (typologies) related to the anticipated outcomes of the interview (Hatch, 2002). For this analysis the guiding questions were, why did parents of children with autism chose to send their child to a camp for children with autism, and what was the parents perception of the difference in the camp and the classroom. The course of the interview followed these questions. Using the method suggested by Hatch (2002), after determining the two typologies, the data were re-read and patterns emerged related to the reasons that the parents sent their children to camp. Even though the analysis began with two typologies, three other significant trends emerged from the interview as the researcher asked questions that followed the flow of the conversation. These emerging typologies included the parent's perceptions about Sensory Camp, the perceived differences in Sensory Camp and other camps and the parents' perceptions of their child. The data that supported these patterns were coded and relationships among the patterns were identified with data excerpts to support the generalizations.

Content analysis included an examination of the curriculum documents as well as the educational documentation for the students. Marshall and Rossman discuss the idea of document review as being the more objective part of the qualitative study: "...content analysis entails the systematic examination of forms of communication to document patterns objectively. ... traditional content analysis allows the researcher to obtain an 'objective and quantitative description' of the content of various forms of communications" (1995, p. 85).

The educational documents were analyzed in the following ways. An examination of the classroom and camp curriculum was made to note similarities and differences of presentation and content. The educational records of the participants were examined to note any behavioral goals that were addressed in the camp and classroom settings and to get a better understanding of the children's behavior. Additionally, these documents could have provided an explanation of the similarities and differences of participant behaviors in the camp and classroom settings. The curriculum for each of the programs was analyzed using methods prescribed by Posner (1995) and described in detail in the curriculum subsection of Chapter 4 Findings.

The methods used to collect and analyze data for this study lead the researcher to answers to the questions that initiated the study. More importantly, these methods allowed a look at the way children with autism behave in social settings. The use of these particular methods provided insights that went beyond the questions asked and provided findings and insights about these children that were unexpected.

CHAPTER IV: FINDINGS

Introduction

The guiding questions for this study included the following. What is the behavior of children with autistic spectrum disorder in a camp setting designed for children with autism as compared with a classroom setting? How do children with autism interact with each other in a camp setting? How are camp settings (including curriculum, teacher interaction, and environment) different from classroom settings? Why do parents of children with autism send their children to camp?

These questions demanded that a variety of data sources be used for this study, including investigating the settings of the camp and classroom, observing the children, and talking with their parents. The harder question was how to report these findings, so that the reader of this research could easily understand the conclusions reached by the researcher. Perhaps, even more important than understanding the study's conclusions, was the researcher's desire for the reader to know the children involved in this study. To these ends, Chapter 4 was divided into two sections describing the settings and the children. In The Settings section, the physical environments in which the study took place, and the curricula, including the operational curriculum and the official curriculum for both the Sensory Camp and the Siskin Children's Institute, were examined. The section titled The Children gives the reader a chance to know about the children, and to observe them in the camp and classroom settings. The Parent Interview reveals insights, not only about the children, but also about the role parent perceptions play in the choices they make for their children.

Before beginning the reporting of the findings in these two sections, a reiteration of the plan for the study is offered. Observations of the three children, who attended Sensory Camp and were enrolled in Siskin Children's Institute for the fall 2002 term, were completed as a part of the research. All three children have some diagnosis related to autism. For the purposes of this paper, they are referred to as Child 1, Child 2, and Child 3. The same children were observed in the Sensory Camp held at Creative Discovery Museum, and in the Siskin Children's Institute classroom setting. Although three children were observed, the data from Child 3 were lacking in quantity, because he only attended one day of camp and was absent from the classroom several of the observation days. Additionally, his mother did not attend the parent interview, and could not be contacted since the family has no telephone and limited transportation.

These observations, made for the duration of the two week camp, were completed by taking field notes as the individual observations occurred, transcribing these notes into research protocol, and summarizing this protocol to articulate the core of the behaviors that occurred during the observation. This core behavior then became the focus of the next observation. An example of this was found in the July 10 observation. In summarizing the observations, it was discovered that Child 1's level of vocalization had increased. In fact, on the first day of camp, one of the camp facilitators who knew Child 1 from SCI was surprised to find her making vocal sounds at all. By the third day, (July 10), Child 1's vocalizations had become expected. A focus for the observation on July 11, then became the frequency with which Child 1 vocalized in different areas of the museum.

During this phase of data collection, engagement with the children was not sought, although it did occur, initiated by the children being observed. On more than one occasion, the child being observed drew the researcher into engagement. One of these times occurred when Child 1 was in the activity room during the second day of camp.

> The researcher was standing in the classroom near the door and Child 1 had just finished her turn in the bubble maker. She stepped out of the bubble maker and approached the researcher. She hugged the researcher and wanted to be held.

This same pattern of data collection was followed during the classroom observations at the Siskin Children's Institute (SCI). All three of the children were enrolled in the same classroom, and for a period of seven days, the researcher conducted observations of the children in their normal classroom routines. The field notes were transcribed into research protocol, which was summarized nightly to determine a focus for the next observation. The difference in the observation technique at SCI was the use of the observation room. For all classroom observations the observation room, which was wired for sound, was used. When the children went to the playground, the researcher was out in the open, and was usually recognized by the children, as demonstrated by the following account involving Child 1.

> All three children are on the playground. Child 2 is on the tire swing swinging in a circle around and around. Child 1 is walking alone and as she is walking, she makes eye contact with the observer, who is on the other side of a chain link fence sitting next

to another adult. After making this eye contact, Child 1 keeps on walking.

A guiding question for these observations was, how does the child interact socially with his/her peers and teachers. So that a more complete picture of the children could be seen, the educational records of the children were reviewed and the parents of the children were interviewed to determine a rationale for sending their children to a camp for children with autism. The settings of the Siskin Children's Institute and Creative Discovery Museum's Sensory Camp were also analyzed and compared. This analysis included a comparison of the curricula of the camp and the classroom, as well as the physical environments of the two institutions.

With this as a brief introduction, the rest of this chapter is devoted to the two sections describing the settings housing this study, and the children who were the participants, including the understandings of the children gained from the parent interviews.

The Settings

The question about the differences in the environments of a camp and the classroom was answered by comparing the physical environments of the camp and the classroom setting, as well as analyzing the operational and official curricula. Posner defines these two curricula in the following ways. "The [operational curriculum is the] curriculum embodied in actual teaching practices...The [official curriculum is the] curriculum described in formal documents" (1995, p. 12). For this paper, the operational curriculum or the "actual teaching practice," (Posner, 1995, p.12), included all of the logistics of the programmatic operations such as the schedule of activities/classes, staffing, transitions, pairing of children, classroom management, room arrangement, and protocols for pick-up

and drop-off in the camp and classroom settings. The official curriculum, included the mission, learning objectives, and the educational plans for each program, as well as the activities designed to accomplish these goals in both the camp and the classroom settings. When the physical environment and curricular components were analyzed, the settings of Sensory Camp and the classroom turned out to be alike and different in many ways.

Sensory Camp

Physical Environment

The setting and context of a children's museum is unique to each museum and may be hard for the reader to visualize without a description. The birthday room of the museum served as the headquarters for this Sensory Camp. It is here that the children began the day, had a snack and ended the day. The room was brightly colored and in place of a squared off, solid back wall there was a cone shaped wall, which was interspersed with small solid colored stained glass windows about one foot square. The windows were white, purple, green, and yellow and were recessed into the wall about six inches. There were eight rectangular tables in this room and thirty-six chairs.

The exhibit area of the museum was arranged into core areas. Just past the entrance of the museum was the water area, which included several moving sculptures in the top of this 30-foot tall room. Included in this sculpture were water buckets, which each scooped 16 gallons of water out of a water-filled pond. These buckets were attached to a chain that lifted the buckets to the top of the thirty-foot ceiling and dumped the water into tubes that delivered water to power the various moving sculptures. A terraced river-like area was accessible to children of toddler height and beyond.

The Barsamian sculpture was a kinetic sculpture that combined surrealistic art with the science of movement. It was a circular enclosure approximately 100 feet square in area. The room was dark and was cooled by a constant breeze generated from the moving metal arms that were seven feet above the floor. Along the sides of the enclosure were black and white pictures of the same scene. The metal moving arms had clay-like sculptures of birds, hands, and light bulbs attached to them. The movement of the sculpture accompanied by a sequenced strobe light caused the birds to appear to fly out of the pictures and become hands. As these hands apparently opened and closed, a red light bulb was released from the open hands.

Off a large atrium were five discipline-specific areas of the museum including the Little Yellow House, which was a toddler area, designed for children four and under. This area had a toddler-sized kitchen and a tree house with a stepladder and slide, as well as a hideout in the tree trunk itself. Doors built into the wall of the area opened to reveal plexi-glass coverings over gently moving stuffed animals.

Another area focused on visual art and included an art studio with tables and supplies for making various kinds of art. Additionally this core area included a puppet theatre, a lighted Lego and sculpture table, a clay table, stamp area and a Style-Maker photography booth. In this booth, children could photograph themselves and by pressing blue rectangles on a touch screen, change the photograph into six different styles of art. They could also return to a live shot and take the photograph again.

At the entrance to the paleontology area was a fifteen-foot tall cast of a dinosaur skeleton. In the front portion of the area, there was a large sand filled pit surrounded by artificial rocks. Under the sand were life-sized casts of dinosaur bones, which could be

easily uncovered by children of all ages. The back area of this exhibit contained a bone match exhibit where children scanned bones to determine the position of the bone in the dinosaur's body. This bone match exhibit had a monitor, which emitted a low dual tone, even when not in use. The monitor also had a screen saver featuring various realistic looking dinosaurs. Included in this area is a mural of realistic looking dinosaurs with doors that opened to reveal interesting facts and cartoon drawings of dinosaurs.

The music area was divided into seven smaller exhibit areas. One of these was an instrument room containing about ten different percussive instruments, many of which required large muscle movements to play. There was also a sound-around area, containing electronic drum pads, played by using drumsticks to hit the pads and make drum sounds. The mouth-of-music was a microphone into which children spoke to make sounds. The setting was determined by pressing a large red button. When this button was pressed, a panel above the button would light and show a graphic representation of the setting such as a concert hall, a canyon or a shower. The ear of music was a three-dimensional model of the ear behind plexi-glass. Pressing a button made the bones of the ear vibrate and caused small lights to illuminate the cochlea of the ear. The spiral cochlea of the ear was not encased in the plexi-glass housing and its large three-dimensional shape was easily accessible for guests to feel. The eyes of music were TV monitors that showed different video clips. The guest could choose one of four buttons to play different snippets of music that may or may not match the pictures. The jukebox contained eight buttons that when pressed played a different style of the folk tune, *Simple Gifts*. Finally, the recording studio was an enclosed room containing five keyboards and monitors as

well as a mixing board and microphones. Additionally, simple rhythm instruments were stored here.

There was also an area of the museum called the invention area. This was subdivided into three smaller areas including a puzzle area, a Robotix building area and a Zoom Zone, which housed experiments from the Zoom TV show. The puzzle area included several three-dimensional puzzles set out on picnic tables for children and families to work. The Robotix zone had thousands of pieces of Robotix building toys and included motors to power the toys. Experiments in the Zoom Zone could be performed on a set that looked like the Zoom television show and seen on a television monitor. There was also a monitor showing the Zoom television show..

Another part of the atrium was a story corner, shaped like an oversized open book. Inside the book on one side was a large cushioned chair. On the other side of the open book, was an upholstered bench. The book opened to an area where children sit while the books are read aloud to them.

The other areas used for this camp included the classroom and the conservatory. The classroom was a conventional room with a brightly colored mural on one side. There were long utility tables and folding chairs set up in this room. The conservatory was a long and narrow room with an organic shape. One whole wall of the room was made of windows and the linoleum tile floor had two support poles emerging from it. For this camp, various large sensory toys were placed in the room.

The museum hosted traveling exhibits regularly and for the duration of this camp *The Magic Schoolbus: Inside the Earth* was the temporary exhibit. Included in this exhibit was a walk in mineshaft, a life sized classroom scene, a 10 foot volcano made of acrylic,

and a school bus. The bus was life sized and authentic looking and offered guests the opportunity to sit on bench type school bus seats behind a driver's seat. The guest in the driver's seat could use a real steering wheel, rear view mirror and gearshift as he/she pretended to steer the bus inside the volcano.

Curriculum

The operational curriculum (see Settings section) of this camp included the schedule and managerial organization of the program. There were sixteen children in the total camp. Each camper was a part of a group consisting of two children and one facilitator. Two facilitators and four children formed a larger group, and the groups were labeled as Fossil, Mineral, Volcano, or Rock. The groups followed a daily schedule (see Appendix A), which included free play in the classroom, snack time, therapeutic movement lead by occupational therapists, and rotation through the core areas of the Museum. In addition to free play with the exhibits, activities were provided in each of the core areas. Interacting with the campers was a teacher from Siskin Children's Institute, who lent support to the staff and campers. A museum staff person was responsible for the logistics of check-in and the operation of the exhibits and activities.

Included in the operational curriculum of the Sensory Camp were the experiences other than those listed in the content outline (Posner, 1995). Waiting on a turn, staying focused in an area, making transitions, and communicating with both spoken and visual language, turned out to be important components of camps for kids with autism (Schleien, Mustonen & Rynders, 1995). An additional component of this curriculum was the exercise in socialization that came from being in a large environment and coming in

contact with strangers. Additionally, socialization was taught by the configuration of the groups (one facilitator and two campers), and by teacher modeling.

The style of teacher communication with the camper was consistent in both of the groups of children observed. The teachers often acknowledged the thoughts of the child, (even when these thoughts were not verbalized), were responsive to the child, and engaged in joint attention activities with them, as evidenced by the following incident from the research protocol. Child 2 was in the art studio and facilitator was working with him to make a bead bracelet.

> He puts it down again and lays his head on the facilitator. He threads the beads on the bracelet again and watches the bracelet go back and forth. During this time, the facilitator says, "Put your beads on." Child 2 vocalizes, "un, un, ah, no," in sort of a monotone and puts his head into his hands." The facilitator says, "You don't feel good today?" The facilitator then puts the bracelet on Child 2's arm and he complies easily. He says, "Un, duh," and smiles, making eye contact with his facilitator. The other children balk at having the bracelet put on their arms.

Transitions from one area or activity to the next turned out to be a part of the operational curriculum of both institutions, but were especially noteworthy in the Sensory Camp. For children with autism, transitions from one setting to another can be difficult (Dunlap, 1999). In the camp setting, no particular structure was in place to ease transitions. Rather, each facilitator responded in her own way to initiate the transition. The examples below showed that the facilitators had different ways of dealing with the

transitions. In the following example, Child 1 was being asked to make a transition from the paleontology area to the upstairs movement area.

> When this cleaning out of the sandal process is finished, Child 1 is resistant to getting up. She refuses the hand of the facilitator and keeps holding onto the bead necklace, which is her transition toy today. Finally, after pulling her hand back from the facilitator and being gently pulled into the atrium area of the museum, Child 1 breaks loose from the facilitator and runs up the steps. As she runs ahead of the facilitator, Child 1 calls, " huh, huh, huh, huh," all the way up the steps.

In this second example, Child 2 had made the transition out of the art area with no problem, but was having difficulty transitioning into the dig. His facilitator picked him up, and lifted him into the area.

> Child 2 exits art and moves on to the paleontology area. When he gets to the edge of the sand pit, he stops and does not want to go into the sand. The facilitator swings him into the pit and puts him down on his feet. He immediately sits in the sand but he continues to raise his right foot above the sand.

The official curriculum (see Settings section) of Sensory Camp included a course outline and planned experiences (see Appendix A). Four daily activities were completed in four different areas of the Museum. These activities were intended to be teacher-directed, take no more than five to ten minutes to complete, and were designed to be interesting for the child with autism since they were organized around sensory

experiences that related to the area in which the activity occurred. For example, in the art area there were art activities that gave the children tactile experiences, such as making a camouflage bank using a smooth cup, sticky glue sticks, and crinkled tissue paper in various camouflage (brown, green, beige, and black) colors. The sensory areas addressed included tactile, auditory, olfactory (spices were used in one of the activities), and visual. Another teacher-directed portion of the official curriculum was the movement area, which was directed by occupational therapists, and included therapies related to the ways that children take in information. There was an especially heavy emphasis on the tactile, fine motor, gross motor, and vestibular. The official curriculum also contained the exhibits in each of the areas. This portion of the curriculum was student-directed, since the students chose which exhibits to access and how to access them.

Siskin Children's Institute

Physical Environment

Siskin Children's Institute was a newly renovated facility, designed to meet the needs of the child with special needs in an inclusive setting. Surrounded by buildings and asphalt, the building was located in the downtown district of Chattanooga. Yet, the entrance to the school looked like a little red schoolhouse with a sharply-gabled roof that protruded from a more contemporary building. In front of, and to the side of the entrance was the playground. It was designed with accessibility in mind but in such a way that all of its components were equally appealing and beneficial to children without disabilities. Included in the playground components were the disciplines of music, math, and language arts, since the organization of the play equipment promoted language. There

were tricycles and other riding equipment for the children to use on the concrete paths that wound around the play equipment.

Inside the building were light-filled and brightly colored hallways, marked with inlaid geometric shapes. Children followed the shapes to find their way through the halls. Both the building and the playground were designed to incorporate not only the needs of the curriculum, but also in many cases the curriculum itself. There was a commons area, and a reception area. The halls were full of children's artwork. Adjacent to every classroom was an observation room equipped with one-way glass and sound equipment, allowing the researcher to see and hear all that went on in the classroom, without leaving the observation booth.

The individual classrooms were well equipped with new furniture, soft resilient flooring, and carpeted areas for circle time. Additionally, each room had gender-specific bathrooms, an adult-sized sink, and cabinet area, as well as a teacher's office. The rooms were decorated with various labels for centers and picture charts. However, the rooms were not as full of thematic materials such as bulletin boards and things hanging from the ceiling, as might be found in other classrooms. There was an effort made to accommodate the need for many of these children to have a calm environment.

Children 1, 2 and 3 were all in the same room. It was the Developmental Communication classroom, housing six children, two facilitators, and one teacher. This room was divided into centers such as independent work, computer, leisure (a home environment), academics, circle, reading, listening, and blocks. There were also oversized cutouts of crayons on the floor, which have the names of the children written on them. Charts containing picture clues to the schedule were hung on the wall.

Curriculum

The operational curriculum (see Settings section) of the Developmental Communication room included the fact that it is one of only two rooms at SCI that was exclusively for children with special needs and at this time, all of the children had a diagnosis of autism. The development of both oral and visual language, socialization behaviors, values, and structure is an objective that was built into the management of the classroom operations. Examples of this objective-driven operational curriculum included the student following a daily schedule, the teachers and facilitators using sign language to communicate, and adults speaking to children often. Circle time was a time when the entire class came together to read, sing, and talk about a book that had been read to the class. Other procedures that stressed social time included partnering children for the academic and the leisure centers as well as sitting around a table for snack time and encouraging conversation. Values were communicated when children were given jobs each day, and encouraged to use commonly accepted courtesies. Structure was found as children sat in the same seats for snack time daily, and took the same place in the circle time.

The class schedule (see Appendix A) allowed time for the children to be in the classroom with the teachers, and time for children to leave the exclusivity of the Developmental Communication classroom for a more inclusive setting. During the time that some of the children went to the inclusive setting of other classrooms with the facilitators, one of the children stayed in the classroom with the teacher for discrete trials.

Teacher attitude toward and interaction with the students in the classroom setting was similar to the camp setting. Teachers routinely acknowledged the thoughts of and were

responsive to the children. They made eye contact often with the children and engaged in joint attention. Also, these teachers openly received affection from the children, evidenced by the following incidents from the research protocol.

The following incident happened at SCI when the teacher and Child 2 were on the playground.

> Child 2 comes to the fence just to the right of where the observer is standing. He squats down and begins looking at his shadow by moving his arms to make different shapes on the concrete sidewalk in front of him. The teacher comes over to him and says, "(Child 2), are you playing with your shadow again?"

In a second example, Child 1 was in one of the centers.

> Child 1 is in the independent center and stands up, pushes the chair in and turns around to hug the facilitator. The facilitator hugged her and told her to finish her work.

The official curriculum of Siskin Children's Institute, *Read Play and Learn* was based on children's literature. Each unit was planned for a two-week time-period during which the same piece of children's literature was read at the beginning of each day. The activities that followed for the remainder of the day were based on the vocabulary, plot, character and setting of the book. The activities changed daily, although only slightly, since repetition played a big role in this curriculum. The objectives addressed language, social, cognitive and motor development with ten activities planned for each day, which were executed in various centers and at various periods throughout the day. The

categories of activities included the art center, outdoor play, snack time, dramatic play, the listening center or the math and science center.

The Developmental Communication room included a listening center, academic center, independent center, and leisure center, and the teacher chooses activities from the series to place into these four areas. All of these activities were teacher-directed except for those placed in the leisure center. In this center, students chose the toys they would like to play with although some of the items were connected to the unit story. The rationale behind the series, which was designed for children who are developmentally between the ages of one and six years, was that repeated exposure to activities builds memory, comprehension and the application of skills and content. Expectations for the sensorimotor, functional and symbolic stages were listed.

Comparison of the Settings

The question that prompted an investigation of the difference in settings was, how are camp settings (including curriculum, teacher interaction, and environment) different from classroom settings. To answer this question in a comprehensive manner, each subdivision (i.e. the physical setting and curriculum) was compared, followed by a discussion of the key findings from these comparisons. Table 1 showed similarities and differences in the physical environment and the operational schedules.

Comparison of the curriculum in the two settings demanded that the comprehensive concept of curriculum be narrowed to the definition relevant for this research. Curriculum can be defined as the planned end of education, and, therefore the objectives for which the students were held accountable became the focus of the curriculum. Another view presented the curriculum as a set of instructional strategies teachers planned to use and

Table 1

Comparison and Contrast of the Environments

	SCI	CDM
Rotation	The children moved daily to the playground and twice a week to a group room. Within the room, a consistent schedule included rotations to one of four centers set up in the room.	The children moved among six areas per day. The areas were the same every day.
Room environment	The room had minimal visual and auditory stimulation. There were small and contained areas except for the playground.	The areas were large and open with constant visual and auditory stimulation.
Student/ teacher ratio	There was one teacher and two facilitators for a group of six children.	There was one facilitator for two children. There are two occupational therapists in the Sensory room daily.
Length of day	8:30 –3:00 pm	8:30 – 11:30 a.m.
Interaction from the outside	There were interruptions from other teachers and administrators daily.	The public was present beginning at 10:00 a.m. This meant that four of the six areas contained people that the campers did not know.

this viewpoint defined the curriculum as the means of education (Posner, 1995). These definitions formed a basis from which to differentiate the Sensory Camp and Siskin Children's Institute curricula. Sensory Camp curriculum was composed of instructional strategies as well as activities designed for the enjoyment of children with autism. This was shown by the following description from the research protocol of the camp movement and activities, demonstrating that this camp curriculum more closely paralleled the idea that curriculum was a means of education rather than an end of education.

> The groups rotate through the core areas of the museum following a daily schedule that includes the same activities for each camper. This schedule contains an opening, rotation through the core areas of the museum, a snack time, and a closing as well as movement in the conservatory, which is lead by occupational therapists. In each area of the museum, the children play freely with the exhibits and are invited to complete an activity that changes daily and has been designed to be intriguing for the child with autism.

The curriculum for the classroom at Siskin Children's Institute (SCI) was focused on the content that children were expected to learn. This is evidenced by the fact that each child had an Individualized Educational Plan (IEP) that motivated the teacher's expectations and interactions with the child, as well as the daily activities. An example of this type of differentiated instruction was found in the following example that occurred as the researcher observed in the classroom.

During story time, Child 3 was expected to respond verbally to the questions, while the expectation for Child 2 was simply to stay in his chair. A star was given to both children for these behaviors even though the behaviors were not equal.

The difference in expectation for each child was related to the difference in the IEP's for the children. The official curriculum (the written curriculum) of SCI was *Read, Play and Learn* but, in reality this series served as the means for the real curriculum, which was the accomplishment of the goals set on the child's IEP. Therefore, the curriculum was outcome-based and was the end of this educational setting.

Therefore, a major difference in the curricula for the two settings was the difference in the philosophical approach to curriculum. Sensory Camp used curriculum as a means of education rather than the end of education, as do most camps. The use of the *Read, Play and Learn* series at SCI to accomplish the desired outcomes of the students' IEP's indicated that the curriculum was the end of the education.

Posner also discussed the "five concurrent curricula" (1995, p.11): the official, the operational, the hidden, the null, and the extra curriculum. He defined them in the following ways. The official curriculum (previously defined in this paper) was the written curriculum as documented in scope and sequence charts, curriculum guides, course outlines, and objectives. The operational curriculum consisted of what was actually taught by the teacher, including the schedule and the management of the classroom. The hidden curriculum was about the norms and customary appropriate behavior for the teachers and children. The null curriculum was the set of subject matter that was not taught, and the extra curriculum were those things outside of the setting for which the curriculum was planned. The only curricula compared for this analysis included the

official, operational, and the null curricula. The extra curriculum and the hidden curriculum could not be adequately addressed in this analysis.

The components of the official curriculum included the scope and sequence, the syllabus, a content outline, textbooks, the progression of study, and the planned experiences (Posner, 1995). Only two of these components were found in the Sensory Camp curriculum, the course outline, and the planned experiences. The SCI *Read, Play and Learn* curriculum contained a scope and sequence chart, content outline, progression of study, and the planned experiences as well as a rationale for the use of the curriculum series. These documents were used for the comparison.

The curriculum analysis was completed using methodology recommended by Posner (1995). It consisted of a piece-by-piece comparison and contrast of the official and operational curricula of the two organizations. From this comparison and contrast, a cross-referenced list of what was not addressed (the null curriculum) in the camp and was addressed in the classroom (and vice versa) was compiled. The null curriculum was defined as those subjects that were not taught. This cross-referenced list of the null curriculum for both institutions shown in Table 2 demonstrates the difference between the operational and the official curricula.

These four categories defined the differences in the curriculum of the Sensory Camp and the Siskin Children's Institute. Posner (1995) said that an examination of the null curriculum was useless unless there was a focus on why the subjects were not taught. This statement was a key to the question under investigation, how are camp settings including curriculum, teacher interaction and environment different from classroom settings.

Table 2

Cross-referenced List of the Null Curriculum

Sensory Camp's official curriculum does not contain:	Siskin Children's Institute's official curriculum does not contain:
Literature Values Sorting Vocabulary Computer Outside play	Student-directed activities Museum exhibits Three make and take activities per day Music as an end rather than a means of communication
Sensory Camp's operational curriculum does not contain:	Siskin Children's Institute's operational curriculum does not contain:
Transitional activity Inclusion of children without autism Responsibility-building activities Circle time Independent work time Discrete trials Behavior charts	Student-directed activities Interaction with the general public Transitions among many settings

The null curriculum, along with the rationale for its absence from the curriculum, accounted for much of the difference between Sensory Camp and the SCI classroom. The components found in the SCI curriculum, but left out of the Sensory Camp, were content-based and were designed to change developmental behavior. Student-directed activities were not a part of the SCI curriculum because the curriculum was objective driven. The components missing from SCI curriculum but contained in Sensory Camp curriculum were student-directed and activity-based. Camp curriculum did not contain vocabulary-building or literature because the camp curriculum was centered on activities.

The rationale for the curriculum of any institution should be found in what is being accomplished by the institution. The curriculum is created to accomplish its goals and objectives. Simply put, the goals of an organization should drive the curriculum choices (Posner, 1995). The mission statement of SCI included the phrase, "to improve the quality of life for children with special needs and their families through excellence in education…" One goal of the Siskin Children's Institute was to assess and challenge each child's potential. To accomplish this, the teachers used the child's IEP goals and reassessed these goals often.

There were no stated objectives for the Sensory Camp during the year it was a part of this study. The history of the camp showed that in its first year of operation (Summer of 2001), one of the stated goals was to give children a sensory experience. Evidence of this was the fact that a quantitative study was completed by occupational therapy students to assess any change in sensory stimulation, pre and post the two-week camp. In the second year (summer 2002), there was no stated objective, nor was there a specific focus, other than providing appropriate activities for children with autism. A significant finding of

this study was that, although SCI's goals were clearly defined in its mission and commitment statements, there was no such written document for the Sensory Camp. It needs to be noted that the setting for the camp, Creative Discovery Museum, did have a clearly stated mission and defined goals. An assessment of the effectiveness of the Sensory Camp curriculum, as measured by its goals, could not be made without stated goals and/or objectives.

Another notable difference between the settings was in the transitions made by the children. In the Sensory Camp, campers usually had a difficult time in transitioning, but in the SCI classroom, they usually did not have difficulty. Even though this difference was noticed as a part of the behavior of children, the reason for the difference in behavior fell into the category of the operational curriculum, since the difference could be accounted for by the lack of a transition routine in Sensory Camp. Table 3 showed the domains (units of meaning) that were relevant to a discussion of how the differences in the operational curriculum of Sensory Camp and SCI, affect transitional behavior. These domains were based on the relationship identified as strict inclusion (Hatch, 2002). Strict inclusion is the domain represented by the term "is a way to," so every behavior listed on the left side of the chart was a way to do the action listed on the right side of the chart. This means that the behaviors on the left side of the chart were the observed ways in which teachers helped the children make transitions.

The following is an example of the way that transitions were handled in the classroom.

> In closing the teacher says, "Tell me three things that you need to

Table 3

Camp and Classroom Transitions

Camp Facilitator Behaviors During Transition		
Distracting the child	Is a way to	Allow child to make a transition
Showing pictures of the next place		
Picking up the child		
Holding the child's hand		
Classroom Routines During Transitions		
Expecting it as a part of the group behavior	Is a way to	Make a transition
Taking the child to the picture chart		
Singing with the child		

> do now." Child 3 responds, "Put your chair back, wash your hands and check your chart." The teacher and the facilitator get very excited and congratulate Child 3 on being able to articulate all of these things.

There was no routine to the transitions in the camp setting as seen in this example with Child 1. She was in the music studio and the facilitator was preparing to leave.

> She then drops to the floor and is on her knees. The facilitator says, "In one minute, we will be finished with music." Child 1 vocalizes by making a sighing sound. She looks through the glass door of the studio at the other guests in the music area and begins running in circles. She has a difficult time making a transition. The facilitator picks her up but Child 1's arms slip through the facilitator's hands and she (Child 1) ends up on the floor. Once the

> facilitator gets her out of the music area, Child 1 wants to stop at the video.

Another part of the operational curriculum, relevant to the comparison of settings, was the teacher student interaction. Table 4 showed the domains identified in the analysis of teacher/facilitator interaction with the student in both the camp and the classroom.

Adult behavior toward children is similar in the camp and the classroom with the same teacher /student ratios in both settings and similar techniques used to interact (with the exception of transition protocol). An example of the similarity of the communication between teacher and child in both settings is seen in these two occurrences. The first happened in the art area during Sensory Camp.

> At this point Child 2 looks at this other child (not his partner) and vocalizes. The facilitator says, "Trying to talk to [other child]?"

The following occurred at SCI when the teacher and Child 2 were on the playground.

> Child 2 comes to the fence just to the right of where the observer is standing. He squats down and begins looking at his shadow by moving his arms to make different shapes on the concrete sidewalk in front of him. The teacher comes over to him and says, "(Child 2), are you playing with your shadow again?"

In both of these examples, the facilitator (in camp) and the teacher (at SCI) acknowledged the thought of the child, although these thoughts were not verbalized. The people in charge at both of the institutions were responsive to the children and engaged in joint attention activities with them. Teachers in both settings made eye contact and received hugs generously as evidenced by the

Table 4

Teacher/Facilitator Interaction with Children

Ways that Adults Interacted with Campers		
Moving the child from place to place	Is a kind of	Adult behavior
Engaging children in interaction with each other		
Signing to the child		
Asking questions		
Engaging child with activity		
Modeling activities and the use of exhibits		
Taking the child's hand to model		
Providing physical barriers to contain the child		
Ways that Adults Interacted with Students in the Classroom		
Holding the child's hand	Is a type of	Adult activity
Signing to the child		
Asking questions		
Engaging the child in an activity		
Modeling activities		
Holding the child's hand to model		
Blocking a child's escape path		

following incidents from the research protocol. In the first example, Child 2 was in the art studio and the facilitator is helping him finish his art project.

> He then continues the stamping pattern on table instead of the card and the facilitator says, "[child 2] stamp on the card." She then handed child 2 the marker and says, "Do you want to write your name?" The facilitator hands the marker to him and he takes it with his left hand. Using a tight fisted sideways hold, he makes a mark on the paper. The facilitator puts the marker in his left hand and holds the hand with the marker upright and together they write his name.

Then at SCI, Child 1 was in one of the centers and wanted to leave.

> Child 1 is in the independent center and stands up, pushes the chair in and turns around to hug the facilitator. The facilitator hugged her and told her to finish her work.

This analysis of the curriculum (including the way in which teachers and students interact) and the physical environments lead to the following key findings for the settings of the Sensory Camp and the SCI classroom.

Key Findings of the Settings

Curriculum

- SCI curriculum was focused on the development of the child as articulated in the child's IEP as an outcome. Sensory Camp curriculum was focused on activities as a means to an unarticulated outcome.

- The SCI curriculum was teacher-centered. Sensory Camp allowed free choice of activities in the exhibit areas, so it was student-centered.
- Group time was a part of the SCI curriculum. There was no group time in the Sensory Camp curriculum, so the classroom setting could be classified as more social than the camp setting, since there was a structure in place for group time (circle time and snack time). There were more children in the camp setting on a regular basis but there was not an opportunity for group interaction.
- The objectives of SCI were clearly defined in its mission, belief, and goal statements. There were no stated objectives for the Sensory Camp program. Creative Discovery Museum did have a mission statement (see Appendix C) and all programs were to fit within this mission, so it could be assumed that the Sensory Camp curriculum fit with the mission of the Museum, but there were no stated objectives for the program.

Physical Environment

- There was a consistent structure for transitions in the classroom. There was no specific structure for this in the camp setting.
- The size of the Museum setting was very large in comparison to SCI. Even though the exhibit areas were somewhat contained, the ceilings were much higher and there was more to stimulate the children in comparison to the classroom.
- The schedules of the camp and classroom were similar, in that a structured rotation was followed each day.
- Teacher/student interaction was similar in both settings.

The settings of both environments including the physical environment and the curriculum having been described, the attention of this research now shifts to the children. The description of each child begins with a physical description, and includes information from their educational records. This should make for a better understanding of each child's social behaviors in both the camp and the classroom settings. The section for each child ends with a synopsis of the key findings from the analysis.

Child 1

Who is She?

Child 1 is a six-year-old female with blonde hair, blue eyes, and a slender build. Her educational diagnosis includes autism, language impairment and developmental delay. Her mother's pregnancy was unremarkable, and Child 1 developed normally until about 18 months of age when she had a vocabulary of about 30 words. Then she began to lose language and display behaviors that were chronologically regressive rather than progressive. She did not communicate spontaneously and she received sensory input through large motor activities, such as running and jumping. She waved bye on request, manipulated small objects, and played near classmates. When she was standing still, her head was often tilted down, while her eyes were looking up. She often twirled her shoulder length hair with her fingers.

Her IEP called for her to make motor imitations (i.e. touch her nose in imitation of an adult), imitate the manipulation of objects, participate in fine motor activities, access her picture notebook, tolerate the brushing of her hair, and maintain participation in activities for five minutes.

Child 1 lived with her mother, but saw her father often. He is active in her life, as evidenced by the fact that the mother called the father to get permission for Child 1 to be in the study. Many of the stories that Child 1's mother related during the interview time included extended family, so there is evidence that Child 1 was involved with her family. Her mother reported that she was physically active, although she also liked to watch movies. She said that if she were not in camp, Child 1 would be outside unless she was at home watching a movie or with a sitter. Also, during the parent interview, the fact that Child 1 liked to swim was evident in a story her mother told about a time when Child 1 jumped into the pool with her clothes on, even though it was obvious that she knew she was not supposed to do this. Her mother related the story as verification of Child 1's occasionally mischievous nature. Her mother also talked a lot about her desire for Child 1 to have more social opportunities and how Child 1 had made some social progress recently.

Child 1 missed several days of camp due to sickness and was out of the classroom for one day. The camp staff, who knew Child 1, indicated that this was not unusual and that sometimes Child 1 missed school, especially following weekends with her father.

Social Behaviors in Sensory Camp

Child 1 was the first of the observed children to enter camp on the first day. She entered the camp reluctantly as described in the following scene:

> Child 1 walks in holding her mother's hand while pulling back in the opposite direction of the door to the birthday room camp headquarters. The mother then takes her daughter to the restroom [to use it]. When the mother and child exit, Child 1 turns into the

> wall while the mother heads into the birthday room. The facilitator comes out to greet Child 1. "Hello, [Child 1], I am so glad to see you. Look who is here, it's [Child 2]" Child 2 begins smiling at Child 1 while Child 1 stays close to her mother. Her mother takes Child 1 into the classroom, the facilitator offers Child 2 a toy, and the mother was able to leave undetected by the child.

The next day and on subsequent days, Child 1 became more comfortable entering camp.

> Child 1 walks into the birthday room and begins vocalizing immediately. "Ah, ah, ah, ti, ti, ti." The teacher and parent report that this is highly unusual for the child. Her mother leaves her today with less stress than yesterday.

Even though Child 1 was described in her IEP as not communicating spontaneously, she was observed initiating social interaction. Two remarkable initiations occurred in the music area on the same day.

> Child 1 moves to the music area. She runs into the area and stumbles into another child (a guest) that is a little larger that Child 1. Child 1 gets up and immediately pats the back of the little girl. The facilitator addresses the guest child and asks her if she is o.k. While she is answering, Child 1 again pats her on the back.

Later she entered the studio portion of the music studio and the following three initiations occurred, first with a staff member, the second directed toward anyone who would help her get what she wanted, and the third initiation was toward another camper.

She comes back to the first one and touches one key at a time. When there is no sound she vocalizes, "duh, duh, duh," in rhythm with the way she touched the keys. A museum staff member comes into the room to fix the keyboard that would not work. As the staff member says, "There it is fixed," Child 1 moves up behind her and gently hugs her.

... Child 1 climbs into the chair easily when it is her turn. But she indicates with her hand that she wanted the microphone to be put into the stand. She also signs for more...

... Back at the keyboard, she is playing with one finger and when another child comes up to the keyboard and strikes it, Child 1 used her peripheral vision and removes the child's hand from the keyboard.

On several occasions, Child 1 initiated play with other children, like the time described below in the Movement room. Child 2 began by sitting in the inner tube even though there was another child in the tube.

Child 1 looks at the child in the inner tube and says, "huh, huh, huh," and claps rapidly three times. She then gets out of the inner tube and begins crawling on a mat that is adjacent to the inner tube. The child who had been in the inner tube follows her. There is a large beanbag in the path of the mat on which she is crawling and she stopped. The child behind her reaches forward and pushes gently on Child 1's back. Child 1 continues crawling a couple of

> seconds longer and then gets up and runs in a short circle. The child behind her follows and there is a short chase.

Child 1, who had previously been identified as vocally non-communicative, created a lot of excitement during the first days of camp with her vocal mimicking of an adult.

> ...Then she climbs the steps to the tree in the Little Yellow House where there are small stuffed birds. Child 1 lines the birds up outside of the tree and then she sits back inside the tree and peeks out of the small tree window. The teacher stays beside the outside of the tree and says, "tweet, tweet." Child 1 says, "tut, tut." This mimicking behavior is repeated several times...In a high tone of voice, Child 1 responded ha, ha, ha, ha, eee, ha, bee, ya, ya, ya, ya." This is done in a loud tone and sounds very birdlike. Child 1 stops and looks out of the window at the rest of the Little Yellow House area. The teacher moves next to her and shows her a picture of where they are supposed to go next. Child 1 pushes the picture away. The teacher then once again says, "tweet, tweet." Child 1 responds, "tut, tut." The teacher varied the loudness and softness of her voice and Child 1 responded in the same manner. If the teacher speaks softly, Child 1 responds softly. If the teacher speaks loudly, Child 1 responds loudly.

On the same day, another incident of the mimicking behavior occurred in the music studio.

> She says, "but, dut," into the microphone. The teacher gets close to Child 1and says into the microphone, "mmmm." Child 1 mimics the sound as much as she could. She posed her lips for an "m" to come out but instead, " but, duh," comes out. This is repeated several times but each time even though she posed her lips for an mmm, " but, duh," comes out.

Child 1 often complied with the directives of both adults and peers. The following example occurred in the activity room during camp.

> Child 1 watches the tornado tubes a long time and turns them repeatedly to watch them drain from one side to another. Another child comes up to her tube and wants to see it. Child 1 lets him see it and moves on to something else.

But sometimes the response of Child 1 was non-compliance as in the following incident in the music studio during the camp.

> Meanwhile the children are still taking turns at the microphone and the facilitator calls out,"[Child 1's turn.]" Child 1 ignores this but found an ankle bracelet with bells on it. She takes off her sandal and wraps the bell ankle bracelet around the ankle. There is no Velcro on this one so she could not fasten it. The staff member then found one with Velcro and modeled fastening it to her own ankle. Child 1 refuses the staff member's offer to let her put it on Child 1's ankle, but instead tries to do it herself.

Many times in the camp, Child 1 moved on the outside perimeter of the room, choosing not to engage with the rest of the group in the middle of the room. One instance occurred in the sensory room when there was an air mattress on which the rest of the children were jumping.

> "It's going to be loud," says the facilitator to Child 1 as they enter the conservatory for movement time. Once in the conservatory, there are two other children and it is obvious that the day's activity consists of jumping on a very large air mattress. The three other children are already jumping on the mattress. Child 1 moves away from the mattress and the rest of the children. Over to the side of the area, she runs in circles.

Another example of this happened in the activity room during camp, where bubble activities are set up. All of the other children were gathered around a pot of bubbles with all kinds of bubble blowing devices. Child 1 was off to the side holding onto a table. She jumped toward the table and hopped off to the side, where all of the other children are gathered. She clapped three times and pulled on beads that are hanging from a bulletin board.

> The facilitator approaches her and says, "[Child 1], blow, blow, blow." Child 1 put the beads that she had held onto that day back into her mouth. The facilitator says, "Will you blow?" as Child 1 wanders away from the facilitator. She continues to make rounds away from the rest of the children.

Some of the most remarkable behaviors observed were the repeated behaviors. For Child 1 these behaviors included writhing and rolling on the floor when over-stimulated, running in patterns and lining up objects. The first example of the running behavior finds Child 1 in the music area where the facilitator was getting ready to make a transition to another area. Child 1 had an active time in the music area.

> The facilitator says, "What cha' doin', [Child 1]? This one has different sounds." She then drops to the floor and is on her knees. The facilitator says, "In one minute, we will be finished with music." Child 1 vocalizes by making a sighing sound. She looks through the glass door of the studio at the other guests in the music area and begins running in circles.

Another of Child 1's repeated behaviors was the lining up of objects. In the first example, Child 1 was in the Little Yellow House area, manipulating the stuffed toy birds that were a part of the props in the area.

> Child 1 lines up the birds outside of the tree and to the side of the entrance. She puts one bird in the left side of her feet and two birds on the right side of her feet. Her feet are in the middle of the line of birds and it looks like there are five birds lined up and not three. She moves back into the tree house and says, "huh, huh, huh, huh, ee, ee, ee, my, ha," using various vocal tones and especially a high tone of voice with the "ee's." She puts the birds in a vertical line and moves them one behind another.

Social Behaviors in the Classroom

When Child 1 was observed in the classroom, the biggest surprise was that there were not many surprises in her behavior since many of the initiated, response, and solitary behaviors observed in the camp were also seen in the classroom. One category of these behaviors was the initiation of interaction with both adults and peers as evidenced in the following episode in the classroom. It was in the afternoon, just before school was out and a mother came by early to pick up her child.

> One of the other children's mothers has entered the room and is standing by the door. Child 1 goes to the door, grabs the mother's hand, and then hugs her. Child 1 shows her around the room beginning in the back of the room. Then as they come toward the front of the room, Child 1 lets go of the other mother's hand and goes to her rocking chair in the circle. She makes eye contact with the facilitator.

A similar initiation happened on the playground of SCI. The children had gone to the playground for recess and Child 1 initiated an interaction with the facilitator. Child 1 had just turned a somersault on a grassy hill on the playground as her facilitator was watching from the bottom of the knoll.

> The facilitator climbs the hill and is looking around. Child 1 climbs the hill again and pulls the facilitator down the hill on the other side. The facilitator is laughing and says, "Wee, I did it."

Another time, when she was in the classroom with other children, she expressed a desire to the facilitator to hold a toy.

> Child 1 then goes to the large teacher's cabinet, which hold supplies and toys. The facilitator comes and stands beside her and she takes the facilitator's hand and holds it as she stretches it up to the upper cabinet as if to point it toward the toys in the cabinet that were on the top shelf.

In the following incident, Child 1 once again was not hesitant to demonstrate what she wanted. It wais center time and Child 1 was in a center that she would obviously like to leave.

> After working for a short period of time, Child 1 signs to get up but the facilitator asks her to stay and sits with her so they can work together.

She also frequently initiated social interaction with other children in the classroom setting. In the example below, some of the children had been engaged in an activity at the table but Child 1 had already finished, moving to the book area of the room.

> One of the other children leaves the bean bin at the table and moves to the book area with Child 1. Child 1 has put her book on the floor and the other child picks it up. Both of the children vocalize and the other child sits down, continuing to vocalize. She rolls over onto her back facing away from Child 1 and begins screaming loudly but not in anger. It is more of a scream to hear the sound levels of her own voice. When the screaming begins, Child 1 moves around the other child so that she can look into her face. Both children are lying on their sides facing each other and making

> eye contact for a minute. The facilitator comes over to the book center and reaches her hand down for Child 1 to take. She takes it easily and gets off the floor. She jumped on the beanbag chair and then runs to the back of the room. In the back of the room, she turned around and runs back to the book center and the beanbag. Once at the beanbag, Child 1 runs over to the other child who is still in the floor and kneels beside her while she is on the floor screaming. When the other child sits up and isn't screaming, Child 1 sits down on the carpet in front of the other child and puts her arm in her mouth.

A classroom example of the mimicking behavior was non-verbal. The teacher was reading a book about a baby whale during circle time in the following account.

> Then she asks Child 1 where the baby whale lives. And she holds the book very close to Child 1. The teacher points to the baby whale in the picture, and then Child 1also points to the picture.

The following is an example of a response that Child 1 gave to her teacher during circle time.

> Child 1 is still looking down at the floor and is gently scratching her cheek with her hand. The teacher shows the book especially to Child 1 as she is reading the book. As the teacher reads, "Give us a kiss," from the pages of the book, Child 1 puts her hand over her mouth as if she is "blowing" a kiss.

Sometimes Child 1 responded to a verbal request that was backed up with a gesture as in the following instances.

> In the meantime, Child 1 is standing in the rocking chair. The facilitator asks her to sit down and moves toward her. She takes Child 1's hand and with that, Child 1 sat down easily. The facilitator says to each of the children, "[child's name] want to color?" Child 1 did not come so the facilitator comes to the beanbag chair and reached her hand down to her. Child 1 took her hand but didn't go as easily to the table.

The following example of compliance happened in response to a classmate's mother.

> The mother of one of the other children enters the room to pick up her child, who is in the beanbag chair in the book corner with Child 1. Child 1 moves to the mother, grabs her hand and then hugs her. The mother hugs her back and then shows her the keys that she has in her hand. Child 1 takes the keys out of her hand and looks at the other child who is still on the beanbag chair. Child 1 hugs the mother again, then runs to the mirror and hits it softly but rhythmically.

Just as in the camp setting, Child 1 did not always respond in compliance. Sometimes, she wanted to do things her way. The lights were out in the classroom and a video has been playing. Child 1 was in the beanbag chair in front of the office door.

> The other child is going to help the facilitator to sweep up the beans and needs to get into the office to get the broom. The facilitator

> moves the beanbag chair with Child 1 still on it and Child 1 doesn't move even though she is being scooted across the floor.

Child 1 was not observed participating in group interactions other than those in the SCI classroom. Although the campers did travel throughout the Museum in groups of at least three (a facilitator and two campers) this arrangement did not compose a group in the sense of a group time, because there was no planned activity or structure for group interaction. But group time existed every day in the SCI classroom during circle time. During circle time, Child 1engaged in joint attention behaviors. Child 1 was seated in the circle and the teacher began singing *The Barney Song* as a closing song. Child 1 was at first quiet but then she started vocalizing and got louder as the group got louder, showing that she was attending to the activities of the rest of the group.

> As the group sings a little louder, Child 1 is vocalizing, "ba, ba, nba, mum, mu, mu," and as things got louder she said, "Dot, dot, dot, dot."

There were also times in the group when Child 1 was focused outside of the group. In the following example, Child 1 was being directed by the facilitator to respond to the teacher, who was teaching the children a rhyme about a raccoon. Then her attention was diverted outside of the group, and she tries to leave.

The teacher was saying and teaching a raccoon rhyme to the children

> ...Neither Child 1 nor Child 2 is responsive on their own but the facilitator holds the hand of both Child 1 and Child 2 so that they are miming with the teacher. At one point, the facilitator turns loose of Child 1's hand and she gets up out of her chair ready to

> run to another part of the room. The teacher put up her hand and gently blocked her path so that Child 1 sat down again.

Still another time, Child 1 ignored the aggressive behavior of another child toward her, during group time.

> The teacher turns to Child 1 and asks her to name the color on a page. The other child next to Child 1 hits her without provocation. The teacher took Child 1's hands and signed with them stop and the other child's name. Child 1 did not look at the other child.

In the classroom, Child 1's non-social behaviors were more focused activities including rolling and rocking on the floor, looking at books, and looking in the mirror. In the following example, showing both the book center activity and the rolling on the floor, all of the other children were engaged with the facilitator in a craft activity, but Child 1 was in the book center by herself.

> Child 1 is in the floor at the book center reading a book with her legs stretched out in front of her. There are four books in a stack, which she holds in her lap. One by one, she takes the books off the stack in her lap and lines them up beside her. She is hitting the floor with her right hand in rhythm as she says, "uh, uh, uh, uh, aheeeeeeee," with the last portion of that escalating in volume and pitch to a scream of sorts. She continues this behavior alternately stacking the books in her lap and sorting them into a line on the floor. Suddenly she gets up and runs out of the book corner to the

> corner in the back of the room. She comes back to the carpeted circle area and rolls on the floor.

Just as in the camp setting, repeated behaviors were common in the classroom and tended to be the same behaviors that were seen in the camp.

> She gets up and runs to the book center and rolls over next to Child 2 who is still covered up... She then starts a running pattern between the book center and the back of the room.

In the classroom, the lining up of items was observed in the book center. This behavior was described as a part of the non-social behaviors above.

> Child 1 is in the floor at the book center reading a book with her legs stretched out in front of her. There are four books in a stack, which she holds in her lap. One by one, she takes the books off the stack in her lap and lines them up beside her.

Key Findings from Observations of Child 1

During the course of these observations, Child 1

- Initiated social interaction with other children and adults..
- Responded to adults with compliance and non-compliance, including affection.
- Displayed mimicking behaviors.
- Stayed on the outside perimeter of many group activities, when given a choice.
- Exhibited trademark behaviors such as writhing on the floor, running in patterns and lining up objects.

- Showed empathy for other children.

Child 2

Who is He?

Child 2 was a five-year-old male, whose educational diagnosis included autism and language delay. He was fair skinned, blue eyed and slight of build, and usually had a pleasant expression on his face. His ash blonde hair was combed to one side and had a slight curl to it. Usually his face was looking up and he smiled easily. He was sedentary in nature, as his normal movement was walking rather than running. However, he was the only child who engaged in chasing other children during the camp. According to his mother, he loved the computer and would sit at it for hours. This was borne out by the observations. She emphasized her desire for him to keep up academically during the summer break and said that this was a primary reason for his camp attendance.

His mother delivered him after a twenty-eight week pregnancy in which there were complications, which may have contributed to the premature delivery. Diagnosed with autism in 2001, he presented with behaviors that included difficulties in attending to tasks, initiating interaction, and communicating with others. His strengths included the possession of isolated words, identification of letters and numbers, and the use of purposeful scribbling. His IEP called for him to communicate using the stem, "I want" and point to the picture, initiate interaction with his peers, remain in an area for five minutes, carry his tray to the table, open containers, and clean up after one activity.

Child 2 lived with his mother and apparently from information revealed in the interview saw his father occasionally. His grandparents lived about 30 miles away and he saw them occasionally, but the mother indicated that she was not as comfortable with

them watching Child 2 because they did not completely understand the diagnosis of autism and did not watch him as carefully as she would like. Child 2's mother told a story about a time when her mother and stepfather kept Child 2. It seems that he disappeared for a period-of- time and they later found him down the street. Child 2's mother was upset about the situation but was even more disturbed at the attitude of her parents about it. She said that they thought it was funny. Child 2 did not miss any camp or classroom days and this appears to be a trend from the statements made by the staff, who knew him.

Social Behaviors in Sensory Camp

The first observation of Child 2 occurred in the music area of the museum. As noted in this interaction, Child 2 was not hesitant about using the exhibits. He and the facilitator were at the grand staff in the music area.

> "Child 2, you have to share," says the facilitator after Child 2 had been at the grand staff for 2 to 3 minutes. "Here are drums, what's over here?" Child 2 leaves the area for the adjacent instrument room. In this room, there are lots of instruments that can be hit with mallets or with hands. The facilitator said, "Alright," Child 2 goes to the zither and played once or twice. The facilitator said, "That's great [Child 2]. The child moves to the drums, next to the steel drum, and to the bells. He runs from instrument to instrument. The facilitator picks up a mallet and begins playing the steel drum. Child 2 comes to the steel drum but then goes to an adjacent exhibit.

Child 2 initiated interaction more often with adults than with peers. These initiations included showing affection like stroking the hands and face of the adult, as well as hugging the adult, as shown in the following example that occurred in the field science area. Chicken bones and clay were used to make a picture, but Child 2 was sitting in the lap of the facilitator and wanted to leave the activity table.

> The facilitator…[puts] her arms around him in such a way that he is kept focused. With this physical arrangement, he remains engaged in the activity. When the facilitator moves … Child 2 loses engagement and wants to leave. Finally, as the facilitator has her arms stretched in front of her and Child 2 is in the middle, he turns around and put his hands near her neck as if to hug her. He then takes her ponytail in his hands and begins stroking it.

Other types of initiation with adults included smiling and making eye contact. This first example happened in the music area on one of the first days of camp.

> The facilitator says, "[Child 2] come with me." She then takes him to a drum. She holds his hands and beats the drum in an alternating rhythm. "Good job," says the facilitator, "now what do we play?" Child 2 looks at the facilitator and smiles.

Examples of the willingness of Child 2 to make eye contact and, once again, to show affection, were noted by the following.

> Child 2 sits down and uses his fingers to manipulate the blocks by holding, stacking and turning them. Child 2 focuses his eyes on the blocks and makes eye contact with the facilitator often.

> He then reaches out to the facilitator and brushes his hand under her chin in an affectionate gesture while making eye contact with the facilitator.

Child 2 also moved into close proximity with adults, often choosing to sit with the adult and even hand items to the adult. In this first example, Child 2 moved into close proximity with the researcher during one of the first days of the camp. He was in the field science area and had just come out of the dinosaur dig. The researcher was standing beside the dig area.

> As he wipes the sand off, he approaches the researcher and is attracted by the stars on her nametag. He reaches out to her but touches only the nametag.

This example of adult interaction was even more extraordinary since it included a former teacher that Child 2 had not seen in ten months.

> Child 2 is eating his snack in the birthday room. He is seated forward in the chair and is facing the back of the room. There are four children and two facilitators in this room, which is completely silent. Seated at the table with Child 2 is a child directly across from him. Child 2 looks at his food as he eats. A teacher comes into the room and stops by Child 2's table to talk with one of the facilitators. She is standing next to Child 2. Unsolicited and without warning, he hands her a cracker and the teacher tells him thank you. She leans across the table to talk with the facilitator on the other side of Child 2. After she leaves the table, Child 2 takes

> another cracker apart and hands the side without filling on it to the facilitator seated at this table.

One of the most interesting behaviors that Child 2 initiated was that of making vocalizations in a meaningful context. These vocalizations might best be described as a series of vocables that were strung together with the rhythm of a sentence. Child 2 made these vocalizations when he was away from a social setting, but he also frequently spoke these vocalizations in the presence of adults. In the following example, the facilitator was trying to keep Child 2 in his chair so that he could finish his snack.

> "No, it's snack time now, want your sandwich, what do you want?" She hands him his sandwich and chips and took away the thermometer. He eats one or two of the chips as he sits next to a child without making any contact… and he gets out of his chair…moving to the 8-inch square stained glass windows… The facilitator says, "[Child 2], come back, it's snack time now." To the facilitator, Child 2 says, "Un, un, un, ak,ki,k." He then reaches out to the facilitator and brushes his hand under her chin in an affectionate gesture while making eye contact with the facilitator.

In the following example, Child 2 initiated by vocally expressing a desire to engage with the bubbles during an activity session.

> Child 2 enters the platform area of the bubble maker and positions himself in front of the other child. The bubble is pulled over both of the children several times. Child 2 then wanders away from the area where the children are gathered. He is vocalizing while

> concentrating on other things in the room such as the tops of chairs or the strings of beads hanging from the bulletin board. "Cho stop," says the child. He then runs back to the bubble maker and made it obvious that he wanted another turn.

Even though Child 2's initiated social interactions were more frequent with adults than with peers, there were some striking peer interactions. These included times that Child 2 moved into proximity with another child, initiated play with another child, and talked to the other child. The first example happened in the art area as the children and the facilitator were completing the activity that had been prepared for them.

> Child 2 is...putting circles of beige fun foam (a solid synthetic type material) onto larger pieces of black foam to make rock placemats. The other child in Child 2's group is writing on his placemat and Child 2 looks carefully at what was being written and got very close to the child.

One of the most memorable observations of the entire camp occurred when Child 2 actually initiated play with his partner child. This example was even more dramatic because of the environment in which it occurred. The Barsamian sculpture is a dark circular enclosure about 15 feet in diameter and was sensory in nature, with a constant breeze coming from the moving sculptures and the constant flickering of the strobe light.

> Child 2 enters [the Barsamian] a little slowly. Once inside he starts talking in phrases and moving around the sides. The other child looks up at the sculptures and begins running around the enclosure making screaming noises. At one point Child 2 stands in front of

> and with his back to his partner child and looks back at him vocalizing. Then Child 2 starts running, the partner child begins chasing Child 2, and both children are laughing. This action continues for five or more minutes with Child 2 willingly being chased by the partner child. At times Child 2 would run laughing to the facilitator and grab her. The partner child would stop and laugh and then Child 2 would leave the facilitator and again allow the partner child to chase him. This continues until the facilitator tells the campers that it is time to go to the birthday room.

Child 2's vocal initiations with a peer were less frequent than his initiations with adults but they did happen in this example from the research protocol. This incident was used earlier to demonstrate the similarity of adult interaction in both settings, but it is justified here as an unusually clear example of Child 2's vocal initiation with a peer, since in this instance the initiation was corroborated by the adult. Child 2, his facilitator and a child who was not his partner child are all in the art area.

> Once Child 2 is seated back at the table, the facilitator corrects the actions of the other child. At this point Child 2 looks at this other child (not his partner) and vocalizes. The facilitator says, "Trying to talk to [other child]?"

Child 2's response behaviors in the camp setting included ignoring the action, responding to the action, complying with a directive, imitating the initiated behavior, and refusing to comply. The first example below showed Child 2

ignoring the behavior of others. In the field science area, he was walking around the edge of the dig area where another child had discovered a bone.

> He then turns back toward the sand pit and walks along the edge of it, stepping in accidentally. This time, he smiles and laughs. In the background, another camper yells out, "I got a bone." Child 2 is unresponsive to this outcry. Instead, he walks around the large rocks and feels their texture.

In the following example, Child 2 showed compliance with the directives of adults and includes a reference to Child 2's understandings. Child 1 and his facilitator were in the art area and as the incident ends, they were preparing to move into the field science (dinosaur) area.

> The facilitator comes to get him and takes him by the hand to go into the puppet theater. Inside, she stands on her knees behind him and holds a mask up to his face while she holds one up to her face. He takes the mask and holds it up to his face by himself. The facilitator tells him to hold it up so that he can see out of the eyes. He follows these instructions and then he picks up another mask on his own. The facilitator says, "Time for dinosaurs." Child 2 responds by moving in a slow and trudging sort of way that is reminiscent of a dinosaur.

Child 2 responded to the directives of his partner child in this example, which took place in the field science area.

> The facilitator and the partner child come toward Child 2 and the partner child says, "[Child 2]." Child 2 runs toward his facilitator and partner child and takes the facilitator's free outstretched hand.

Using the Creative Discovery Museum as a setting for the camp provided interesting experiences that could not have been duplicated in a less public setting. On one occasion during the camp Child 2 ended up complying with the directives of a child he had not met. It took place in the Museum's temporary exhibit gallery, which housed the *Magic School bus* exhibit. Child 2 entered the bus portion of the exhibit.

> At first, he liked looking in the bus's rearview mirror at himself but then he goes inside the bus. Three other children on the bus are not a part of the camp but are museum guests. One of the other children says, "Put the vests on." This is a general statement made to all of the passengers on the bus indicating that they should put on the heat proof vests since the Magic School Bus is about to go into the volcano. Child 2 goes to the front of the bus and traces the circular lights on the panel. There is one child in the drivers' seat and Child 2 moves very close to him and acts as though he wants to drive the bus. The other child says, "Sit down, sit down or you'll be hit by lava." Child 2 takes one of the bench seats in the back of the bus and the facilitator helps him put on the vest. He sits quietly with his eyes focused forward on the electronic words across the top of the bus in front.

In addition to complying with the wishes of others, Child 2 also often imitated their words. He was in the activity room with his facilitator where the campers were asked to make volcanoes.

> At one point, the words, "too cool," are said by one of the facilitators. Child 2 mimics the phrasing and rhythm of the words. .. At the table in the front of the room, one of the facilitators says, "It smells like a pickle in here," referring to the smell of vinegar in the room. Child 2 mimics this by saying, "piddle, piddle, piddle," in a singsong rhythmic manner.

On occasion, Child 2 refused to comply with the directives of the facilitator. In the following example, Child 2 was in the field science area and did not want to build a mini-terrarium, which was the activity.

> She then says, "Let's make a terrarium." Child 2 vocalizes and the facilitator says, "Here take this moss." Child 1 refuses and did not want to put the quarter sized piece of stringy green moss in his hand. The facilitator picked it up and tried again. He vocalizes, "So-uh. And then a little more clearly, the researcher thought she heard, "Spid yuhs" the facilitator held his hand and Child 2 pulled back. She says, "Here's water, like water?" and puts his hand in the small pan of water. Child 2 began to vocalize again in unhappy tones.

Sometimes Child 2 exhibited non-social behaviors, characterized by covering his eyes with his hands, ignoring those in close proximity with him, and pulling back as his

facilitator held his hand to accomplish some task. This example occurred in the field science area where Child 2 has been over-stimulated.

> He runs to the back area again. Once again, he stops at the paleo artist monitor and then walks back to the parasorolophus area. Once there, Child 2 peeks back around the corner at the monitor with the paleo artist on it. After examining the graphic and pushing the button, Child 2 wanders over toward and approaches a child sitting at the bone match. The other child vocalizes and gestures for Child 2 to move away. Child 2 seems to be mesmerized by the monitor at which the other child is sitting so he doesn't respond but instead stands still and scratched his arm. Then he laughs at the monitor, turns his back and begins walking back toward the other area. He holds his head in his hands and begins to vocalize a lot.

Child 2's repeated "trademark" behaviors included his speaking in vocables that had the rhythm of a sentence although they were usually unclear in meaning, and putting his head into his hands. His interests included knowledge of computers, and a fascination with mirror images and translucent items. In the camp, he was especially interested in the Style Maker, not so much for its intended purpose to convert photographic portraits into different styles of art but for its mirror-like capabilities as shown in the following.

> During the live shot, he talks in indistinguishable phrases and moves his hands across his face. Although he has several different expressions on his face, he is particularly interested in moving his hands from a crossed position in front of his face. (It should be

> noted that this monitor as with other cameras, shows the motion that is made in the opposite direction. The impression of the researcher is that Child 2 realized that he is moving his arm toward the right but the monitor showed that movement as being to the left.) Child 2 demonstrated an intrigue with this action.

Additionally Child 2 enjoyed looking through the transparent blocks that were a part of the art area. No other child was observed using these blocks in the way that Child 2 did.

> As soon as he is free to leave the art studio area, he goes to the table with the wooden blocks that have transparent colored centers. He stacks these but then picks up some of them and holds them very close to his face. In fact, they are next to his eyes so that he could see through them. He does this repeatedly until it is time to leave the area.

Just as his mother revealed in the parent interview, Child 2 did show an uncanny understanding of computers, as evidenced in the following incident in the camp setting.

> Child 2 stands on this stool and looks at himself in the monitor. He vocalizes when he sees himself. He throws his arms up in the air and watches himself move and talks to himself the whole time. The facilitator takes his picture and pushes the blue rectangles to change the picture into several different styles of art. Then she has to leave to get his partner child. After she left, Child 2 touched the screen to show himself live again. This shot lasts only 30 seconds

> and when the screen goes back to the last shot before Child 2's picture, he is able to complete the sequence to get the computer screen to show him live again. He does this at least five times, always using the same pattern each time. He adds the same unnecessary step to the four-step pattern each time, but the pattern remained the same and each time the sequence is pushed, Child 2 returns to the live shot that he prefers. Once he is back to the live shot, he vocalizes in the same excited manner and stretches out his arms toward the camera.

Social Behaviors in the Classroom

Child 2's actions in the classroom did not change much from those in the camp. He continued to show affection as he initiated interaction with adults more than with other children. In this circle time example, the teacher was asking the children to choose a book.

> Child 2 … reach(es) out for one of the books. As the teacher reads the book, she asks the children to respond with the sound that the animals in the book make. Child 2 does not make the animal sound but does look at the book and puts his hand on the facilitator's knee, who is seated next to him.

The interaction was not limited to touching, as Child 2 was also very willing to make eye contact in the classroom setting.

> Child 2 is in the leisure center, looking at the facilitator. She is trying to get Child 2 to play with a sound type box. Child 2 did not respond but instead he just looked at her, making eye contact.

The chase sequence that Child 2 initiated in the Barsamian sculpture in the camp was repeated on the playground in the classroom setting.

> At this time Child 2 gets off of the swing (which is on the other side of the playground) and runs toward the side of the hill… He looks at the facilitator as he is running and she begins to chase him. He laughs and continues to run. When the facilitator stops running and stands still, he runs past her and looks at her until she begins to chase him again. He continues to look back toward her as she chases him. This action continues for a few minutes until finally the facilitator stops and so does Child 2.

One especially fascinating interaction in the classroom occurred when Child 2 initiated adult interaction vocally to call attention to another child's behavior. In the following incident, the children had been asked by the facilitators to come to the table and play with a pile of beans, which had been dumped into a bin in the center of table.

> Child 2 gets up and moves toward the table and the big bin of beans. The facilitator asks him if he wants to play. He reaches his hand into the beans and he is now opposite the other child at that same table. Both children have their hands in the beans and are simply feeling the beans and running their hands through the beans. The other child at the table puts the beans in his mouth. At

> this time, Child 2 turns his head toward the facilitator who is seated at the computer with her back to the table and he vocalizes something that is inaudible. He goes to the computer to play. The facilitator's attention is directed to the table and she takes the other child to the sink and asks him to spit the beans out of his mouth.

Child 2 was observed initiating peer behavior in the classroom setting, using many of the same types of initiations found in the camp setting. Just as in the camp setting, Child 2 looked at his peers, moved into close proximity with them, and vocalized in the initiating of social interaction. In this first example, Child 2 had been in the tire swing by himself on the other side of the playground when he saw Child 1 preparing for the somersault.

> She (Child 1) then puts her head down onto the grass as if to turn a somersault and does so down the other side of the hill. Child 2 runs up to the spot where she is turning the somersault and then moves back to the swing, which is moving around.

The following incident demonstrates Child 2's vocalizations directed toward another child, either in initiating a behavior or in response to the other child's behavior. The classroom is dark and the children were watching a video in the circle time center. All of the children were either in the beanbag, stretched out on the floor or in one of the chairs. Eventually, all of the children, other than Child 1and Child 2, had left the video to do something else, but these two were still in the middle of the floor watching the video. (The teacher was not present during this time, the facilitators were in charge of the class.)

> Both Child 1 and Child 2 are staying in the circle center. Child 1 stands up and pushes the fast forward on the video screen. [She seems to have no trouble knowing which button to push to make this action happen.] When she does this she says, "ah, ah, ah, ah." Child 2 is still in the floor looking at the video and he vocalizes, "ah, um, um, um."

Child 2 also initiated with peers by reaching for an item that they had. The children were in the circle time and the facilitator had just finished reading a book to them. She asked them to choose cookies or raisins for the snack of the day.

> When it was the turn of the child seated next to Child 2 to choose, he chose raisins and Child 2 reaches his hand across in front of the other child to get the raisins that the facilitator pours out. The facilitator laughs and asks Child 2 which he would like and he pointed to the raisins.

The response behaviors of Child 2 in the classroom were similar to those found in the camp setting. With adults, he responded by being compliant, non-compliant, by giving an appropriate verbal response, by mimicking, or by focusing appropriately. An example of compliance with adult instructions and routine follows. This incident occurred during an afternoon snack time.

> After a few minutes of eating a small portion of the cereal, Child 2 is instructed by the facilitator to stand up, push his chair in and carry his bowl to the garbage. As the facilitators give these instructions, Child 2 is able to follow them one-by-one. He then

> comes back and gets the milk to take to the garbage on his own without direction. However, he puts the almost full container in the garbage rather than pouring it in the sink as directed in a previous session.

Non-compliance with an adult was also a response for Child 2 as shown in the following. The facilitator was trying to get the children to come to the table for snack time. Child 2 was at the computer station with another child.

> The facilitator goes to the computer station where Child 2 and the other child continue to be. She manipulates the bell to make it ring and tells the children to come to the table for snack time. All of the children begin to move toward the snack table, except for Child 2 who continues to work on the computer station. The facilitator comes to the station and begins to click the program until it shuts down. At this point, she also moves Child 2 out of his chair as she is trying to shut the computer down. Child 2 lingers at the computer and points to some of the icons that are coming up on the screen. He begins vocalizing as the computer program shuts down.

At another time, Child 2 also responded by not readily complying with the facilitator's request. The children were seated at the snack table once again.

> Child 2 has his chin in his hands resting on the table. He is not responding to the facilitator's suggestion to eat his snack. He then decided to eat his cereal using his hands, but the facilitator keeps moving his right hand away and telling him to use his spoon to eat

> his cereal with his other hand. She finally holds his left hand so that he will not be able to use it at all and he turns and screeches at his facilitator. He frees the hand she is holding and sort of slaps at her without really hitting her. She calmly responds and continues to hold his free hand. Child 2 then begins eating with his left hand using the spoon.

Many times in the classroom, Child 2 responded to the environment by focusing appropriately. This was the case in the next example that happened as the children when the children were in center time.

> Child 2 is seated at the independent center, completing his work without a problem. His task is to sort some objects by size and he seems to understand without instruction what to do as he is on task during his time in the center.

Another time, Child 2 showed the appropriate response and demonstrated joint attention. He was in the middle of the reading center during an afternoon circle time.

> The facilitator begins to read and both Child 1 and Child 2 are watching the book. The facilitator shifts the book in her hand and it comes closer to Child 2. He begins to reach out and turn the pages and he does this at the appropriate time in the reading of the book.

Child 2's vocal mimicry has already been described in the camp setting, but the following example of physical mimicry was observed in the classroom. It occurred just after the facilitator had taken him out of the room to have his temperature checked,

because she thought he had a fever. Upon returning to the room, Child 2 mimicked the action that had taken place in the first aid room.

> Child 2 returns to the room, and the facilitator says, "No fever." As Child 2 approached the book center, he put his hand to his forehead.

Child 2's responses to peer behavior included ignoring, staying focused on his original task, or compliance. One time in the classroom, another child indicated that he would like Child 2 to join him by sitting beside him during snack time.

> The children are going to the snack table and as Child 2 approaches, one of the children pats the seat beside him and motions for Child 2 to sit beside him. Child 2 ignores this and goes to the bookcase to play.

In the next example, Child 2 responded by staying focused on the computer. Even though he broke the focus to look at Child 1's arm, his focus was still on the computer and what might have interrupted the screen, not on Child 1.

> Child 2 is still at the computer, rocking in the chair. Child 1 walks over to the computer and put the back of her forearm on the keyboard and this changed the screen that Child 2 was working on. Child 2 reset the screen by touching the screen. Child 1 continued to have her forearm on the keyboard and Child 2 looked at her arm on the keyboard. He reached out toward her arm on the keyboard but he didn't actually touch her. Child 1 had put arm on the mouse

in such a way that Child 2's screen was interrupted but Child 2 was able to retrieve the screen without assistance from the facilitator.

The following excerpt indicated Child 2's compliance with another child's directives, while he maintained his characteristic focus on his task as a response to others. This occurred when the children had a free choice time in the classroom.

> The other child in the room chose the computer from his picture list and moves to the computer with Child 2. Both are sitting together although Child 2 does not acknowledge his presence at the computer other than moving his chair around a little to make room for the other child. Child 2's focus is never diverted from the computer. After a few minutes, the other child takes the mouse away from Child 2 but Child 2 does not object. Instead, he gets up as if to leave. It appears that the other child doesn't know how to use the mouse and Child 2 ends up in control of the mouse again.

Child 2's interest in mirrors and in mirror images, seen in the art studio in camp, continued to be seen in the classroom. The teacher often used a mirror that was passed from child to child during circle time.

> Child 2's focus is directed towards the face of whoever is holding the mirror during this activity. When the teacher hands the mirror to Child 2, he takes it and looks into the mirror at himself. He seems intrigued by the idea that his hand is behind the mirror as he is looking into glass, but he can't see his hand. He keeps moving the hand not holding the mirror under the mirror as though he should be able to see it move. He also moves his

free hand above his head and watches this in the mirror. The teacher speaks to Child 2 and asks him questions about how he is like the other children. Child 2 never answers the teacher nor does he ever focus on the teacher. Instead, he is completely focused on the mirror and the image in the mirror.

Key Findings from Observations of Child 2

During the course of these observations, Child 2

- Initiated interaction with adults and peers.
- Showed affection toward adults.
- Interacted easily with exhibits in Sensory Camp.
- Responded to the directives of adults and children with compliance and non-compliance.
- Expressed desires vocally.
- Exhibited trademark behaviors included mimicking language, being occupied by mirror images, and holding his head in his hands.
- Called attention to peer behavior.

Child 3

Who is He?

Child 3 was a six-year-old male, whose primary diagnosis was developmental delay, but he qualified for this study because his two secondary diagnoses included language impairment and autism. Child 3 had blonde hair, cut in a crew cut, and he had an olive complexion. He was muscularly built and almost appeared stocky, although he was not at

all fat or overweight for his age. An accurate description for him was athletic in appearance, and this is validated by the way he moved. He had good control of all of his limbs and he displayed no hesitancy in his gait, as he moved easily from walking to running. Unlike Child 1, he did not run as a means to take in information. His mother had a normal pregnancy and he developed normally during his infancy. His mother reported that he had high fever subsequent to the his DPT shot at 18 months of age, and that he never was as verbal or as focused following the shot.

His educational behaviors included high scores on fine and gross motor skills, as well as communication. His scores were low, however, on the personal and social scales. His behaviors included screaming, crying, and head banging when he is frustrated or angry and he becomes anxious when favored adults or peers leave the room. His IEP called for him to sort and group objects by category and by name, zip and button without assistance, participate in gross motor activities with his peers, and to give direction to his peers using language.

Child 3 lived with his mother and some other adult relatives in a life style that might be described as remote. There was limited transportation to and from his home and no phone service, so it was difficult to get in touch with his parent. He missed most of the camp and was absent in the classroom for several of the days observed. This pattern of absence was normal for him, according to the staff. His mother had no questions about signing the release for him, but she did not attend the parent interview session.

Social Behaviors in Sensory Camp

Child 3 was observed for only one day in the camp setting and for only four days in the classroom. His mother did not show up for the parent interview. For these reasons, the

observations of Child 3 do not give as complete a picture with which to compare his behaviors in the camp and the classroom. The beginning of Child 3's first day of camp was less traumatic because he saw a familiar teacher and was comfortable with her.

> He sees a familiar teacher and goes to her so that his mother had no trouble leaving the room. Child 3 sits down at the front table in the chair facing the front door. He begins to play with the toys that he is offered by his teacher.

Child 3 was not observed initiating interaction with peers in the camp setting and this might be attributed to the lack of observation time. In the one day he was observed in the camp setting, he initiated social behavior with adults by prompting his teacher to give attention to his actions and asking that his picture be taken. In the following example, Child 3 was in the instrument room, singing *Old MacDonald*, which has been initiated by his facilitator.

> Just then, a teacher he knew walks into the room and Child 3 calls her by name saying, "Look, I'm walking like an elephant." He begins skipping in the room, and the facilitator, who was continuing to sing the song, paused for another animal and Child 3 says, "lion" followed by the, "grrr," of a lion. The song continues and Child 3 suggests a zebra and finally a giraffe and then says, "he has a tongue like this." After this activity, Child 3 sits cuddled up in the corner of a cushioned seat for about one minute, while the teacher leaves the room. The teacher comes back with a camera and Child 3 says, "Take a picture of a giraffe with a tongue." She

> takes his picture and then Child 3 says, "Take a picture of me by the cow." He stands by the cow, hits the bells and says, "Moo".

One of the more interesting episodes observed in camp was at the end of Child 3's first and only day in camp. He was seated in the birthday room, which served as the home base for the campers, since it was the room where the campers began and ended their days. Child 3 was seated in the same chair at the end of the day in which he began the day, when the following occurred.

> He sees a mom enter the room and says, "Hey mom, [camper's name]. Bye [camper's name], bye mom, bye [camper's name]." The teacher says as an aside to the researcher. "He wants kids to leave when the mom comes for them." This comment is corroborated by the action that Child 3 takes as each parent enters the room to pick up a child. Child 3 continues to say goodbye to everyone repeatedly until the person leaves the room. Child 3 on his first day of camp seems to know the names of everyone in the camp even those he did not know prior to coming to camp. If he had heard the name once, he knew it.

Child 3 also initiated with adults in a group to let his desires be known, as indicated in the following incident. He was in the field science area and the campers were using shaving cream to color pictures.

> Child 3 takes the can of cream and pushes the button for the cream to come out. "Yellow, want yellow," he says as he continues to

> dispense the cream using three different colors, but he never puts his hands into the cream.

In the same example, Child 3 interacted with peers as he handed the shaving cream to a peer even though he was not asked directly for the item.

> Child 3 stops what he is doing and goes to the spot, which is out of the line of vision of the worktable, where the facilitator had said to lay the pieces. While he is away from the table, but still within hearing of the children, another child asks for the blue shaving cream. When Child 3 returns to the table, he hands the requested shaving cream to the child who asked for it.

The observations of Child 3 were disproportionate to those of Children 1 and 2, since he was absent for the rest of the camp. All of the social behaviors in the camp setting came from the one day's observation.

Social Behaviors in the Classroom

Child 3 initiated a peer interaction that indicated an attempt to control the other children's seat positions. In this example, the children were in their regular classroom preparing for circle time and Child 3 did not like the location of Child 2's chair.

> Child 3 picks his chair up by himself and brings it to the circle. He is seated next to Child 2 but Child 2's chair is not directly beside Child 3 so Child 3 tries to move Child 2 so that he is in a line with him.

Several initiations of social interaction with a peer occurred during snack time. In the first example, Child 3 tried to help another child open a cereal bowl and in the second, he commented on the ability of a child, who is new to the class, to pour his milk.

> Child 3 is seated next to Child 1. He reaches over to her unopened cereal bowl and hits it with his spoon. Child 3 notices that the new child is pouring his milk into his cereal and he says, "Hey he poured."

He also initiated play with other children. The following occurred when Child 3 made a transition from the leisure center to his chart as a part of the classroom routine.

> As another child walked past him, Child 3 raised his hands and made a growling noise as though he was a bear.

In the following example, Child 3 was in the midst of changing from the leisure center to the academics center. Another child was still in the academics center and Child 3 verbally initiated interaction, so that she will leave.

> Child 3 comes out of the leisure center, goes to the schedule, and takes a card. He says, "What's this?" The facilitator replies, "This is academics." Child 3 goes to the academics center and another child is in the seat that is designated for Child 3. He puts his hand on his waist and says to her, "Move [other child]." She did move.

Child 3 also initiated often with adults in the classroom. The following incident occurred during snack time and was on the same day that the teacher had given a lesson about alike and different. The teacher had said that she was different because she was wearing a yellow shirt.

> Speaking to each teacher and facilitator in turn, Child 3 says, "I like your yellow shirt," and "I like your white shirt". He looks at one of the other children and says to the teacher, "I'll help her say her name."

Another way that Child 3 initiated behavior with adults was to tell the adult in charge about the behaviors of other children. Child 3 did this when he notified the teacher that a child was still at the snack table, after snack time was over.

> Child 3 is in the academic center, he turns around to see the child who is still seated at the snack table. He asks the teacher about this child. The teacher responds that he is finishing his snack.

Another example occurred this same day, when Child 3 called the name of a child who left the independent center without permission, while the facilitator in charge was occupied elsewhere.

Child 3 also initiated routine group behaviors such as independently moving the icon on his chart without being told

> Child 3 has come out of the bathroom and goes to the chart by himself to change the picture for the new class period. After moving the appropriate picture, he begins singing, "The more we get together…" He is holding his hands as though they were holding a microphone. He then sits at the table to get ready for snack time.

In the group setting, Child 3 responded to both peers and adults, sometimes just by remaining focused on his task. An example of this happened at the academic work center.

The other child at the center crawled under Child 3 to retrieve a marker that had rolled underneath Child 3's chair.

> During the entire course of his time in this area (approximately 15 minutes), he continues to work well and to show his teacher as he finishes various projects. Child 3 remains seated and continues to work, even when the other child at the same center loses his marker under the table and crawls under the table and under Child 3 to retrieve it.

An especially significant example of compliance was noted below. This example showed compliance with an understood routine and not with a direct request from the teacher. (i.e. The teacher did not tell Child 3 to take his chair to the circle area.)

> The facilitator says, "Circle."... Child 3 picks his chair up by himself and brings it to the circle.

Another example of Child 3's compliant behavior and comprehension of the request involved group responses. The following incidences occurred during circle time and indicate Child 3's attention and capacity for appropriate vocal response.

> The teacher begins asking who is not at school today and Child 3 correctly answers with the name of the missing child. She then begins a rhythm by clapping and hitting her knees. Both Child 2 and Child 3 follow most of the motions of this song. Then the teacher asks, "Who came to school today?" Child 3 answers with the name of the child who is seated next to him.

Still another correct vocal response occurred in circle time when the teacher asked the students to tell the group how they are different from everyone else in the group.

> The class is in the midst of circle time and the teacher is holding a mirror, asking each of the five children to tell the group how he is alike the rest of the group and how he is different. The teacher hands the mirror to Child 3 and asks the question, "How are you like everyone in the group?" Child 3 responds that he has on shoes like everyone else. When the teacher asks, "How are you different?" Child 3 says that his shoes have straps.

Another example of Child 3's compliance included his willingness to sit in the teacher's lap as shown in the following, which happened during circle time.

> It is now time for circle and Child 3 is seated in the teacher's lap with the other children surrounding them in a semi-circular arrangement. The teacher is looking at the calendar with the children and Child 3 is sharing this joint attention… Child 3 points to the day of the week and the teacher teaches a sign for Wednesday, which Child 3 repeats.

Also, Child 3 was willing to be touched by the teacher, even to the point of responding to a hug. In the next behavioral example, Child 3 had been playing on the playground and came into close proximity with the teacher.

> Child 3 is standing in front of the teacher and the teacher holds out her arms. Child 3 then hugs the teacher.

Just as with both of the other observed children, not all of Child 3's responses to adults involved compliance. Some were non-compliant in nature as evidenced by the time when Child 3 was singing at the snack table.

> The children are gathered at the table with the facilitators and the teacher. Child 3 is singing *Jingle Bells* loudly. The teacher, who is seated beside him, tells him to stop singing at the table and Child 3 persists. The teacher tells him that she really likes his singing but that he may not do that at the table. She says that he is welcome to sing in any other area of the room and that he may leave the table and go to one of those other areas if he wants to sing. She asks if he would like to sing more and he says, '"No". She tells him to eat his snack and he did although he continued to mouth the words to himself very quietly.

An even more dramatic example of non-compliance occurred at the independent center when Child 3 decided that it was time to leave. He had been working independently for about ten minutes when the following occurred.

> He left the area before he was finished with his task, and went to the book center to read a book. The teacher tells him to come back to the center because he is not finished. She tells him that he will get a sad face if he chooses not to come back. He said, "No way." He does return, however, to the center and begins rattling one of the plastic bins containing materials for the lesson he is to complete. He says, "No way, I'm finished." Then he signs the

word for finished and looks at the teacher and says, "You're mean, let's go. I'm finished." He looks at another child and says," I'm finished." During this time the teacher keeps saying, "Do your work." Child 3 puts his plastic bin on the floor and the other child in the center reaches over to take something out of it. Child 3 says, "Quit." The teacher ignores this behavior. Child 3 hits his hand on the table and looks at the teacher who is working with the other child. Child 3 yells, "Finished." and leaves the center again. He goes to his chart and then to the leisure center. The teacher takes him to his chart and puts a sad face on the chart.

Mimicking was also observed in Child 3 as evidenced by the following example that took place during a circle time when the teacher referred to her headband.

The teacher says, " I am different because I have a headband."

Child 3 says, "You don't have a headband." Child 3 repeated, "Headband." The teacher then tells a story directed to one of the facilitators about her friend and named the friend. Child 3 says, "talked about friends," and he uses the sign for the word for friend.

The classroom schedule called for children to cycle out of the exclusiveness of the Developmental Communication room and go to an inclusive larger setting. In this example, Child 3 had gone to the larger group setting and the teacher had asked the class to respond to a song on tape by imitating her motions. Child 3 had no problems making eye contact with other adults and with his peers in this setting.

> The children are to sing with the tape but Child 3 just moves to the rhythm of the music and sings very little. However, as the speed of the music gets faster toward the end of the tape, Child 3 does engage in the music and sings. He makes eye contact with the child who is seated next to him and smiles.

In this setting, Child 3 also looked to other children to lead because he gave answers a little after everyone else had responded. Included in this classroom were thirteen other children, who were the physical size of Child 3. Most of these children were more verbally communicative than the children in Child 3's regular classroom.

> Other children come up with a word that contains the beginning sound the teacher is asking for and Child 3 repeats the word a little after everyone else has said the word. He is still looking at the facilitator from the other classroom when he does this. The teacher holds up an 'L' and Child 3 says, "Lion." At first, the teacher doesn't hear Child 3, so the facilitator who brought him to this classroom tells the group that Child 3 said lion. Then everyone repeats the word lion. The teacher then holds up a 'G' and Child 3 says, "grape." ...She holds up a 'z' and Child 3 says, "zebra". [Child 3 seemed to only respond to those letters that he knew. For the other letters, he repeated what the other children said.] The next activity is size discrimination. The children are asked to say big or little when the teacher points to different sizes of circles. Child 3 moves to the rhythm of the words big and little as the class

says them. The teacher reads a book to the class and asks them to respond at various places in the book. The other children read with the teacher, "I see a _____," and the children say and sign the object that is on the page. Child 3 says and signs the object but he does this after everyone else has said the word.

Key Findings from Observations of Child 3

During the course of these observations, Child 3

- Initiated interaction with adults in both the camp and the classroom and with children in the classroom only.
- Matched the faces of parents to their children.
- Responded to peers and adults with compliance and non-compliance, including affection.
- Exhibited trademark behavior of taking a lead role with other children in his group and mimicking.
- Called attention to the behavior of other children.
- Practiced group routines independently
- Looked to other children to lead when not in an exclusive setting

Key Findings from Observations of the Children

From all of the observations, certain behaviors were observed to be common in all of the children. These are listed below.

- All children had trademark behaviors that were repeated from the Sensory Camp to the classroom.

- All children responded to adults and peers with compliance and non-compliance in both settings.
- All children initiated interaction with adults and children.
- The children were at different cognitive levels of development.
- The children were different in their interests and responses to the environment.
- All of the children displayed mimicking behavior of some sort.
- All of the children showed some responsive behavior or initiated affection.

The Parent Interview

The parents of the three observed children were invited to an interview with the researcher. Only two of the parents were present since the third parent did not attend and attempts to get in touch with her were unsuccessful. (She was the parent of Child 3 who attended camp for only one day and was absent from the classroom several times during the observation period. This family had no phone and limited transportation access.) The researcher asked prepared questions, but the conversation also moved along with the answers of the parents, which were analyzed typologically since in the words of Hatch, "the researcher had as … her goal to capture the perspectives of a group of individuals around particular topics" (2002, p. 197).

Even though the analysis of the data began with two typologies, (reasons that the parents chose to send their children to Sensory Camp and the perceived differences in the camp and classroom settings), three other sub-categories emerged from the interview as the questions followed the flow of the conversation. Included were parent perceptions about Sensory Camp, differences in Sensory Camp and other camps, and what the parents wanted the researcher to know about their child. The typologies, or categories of

response, were charted and patterns were immediately seen. These patterns are reported as a subset of the two major typologies that guided the interview.

Typologies

Why Parents Send their Children with Autism to Camp

Three themes related to the reason these parents chose to send their child with autism to camp emerged from the analysis of the parent interview. These three themes, or rationales for Sensory Camp attendance, include socialization, learning, and safety.

Mentioned by both parents, socialization was more of a theme throughout Parent 1's answers. In answer to one of the first questions about why these children were sent to camp, Parent 1 responded that she "...thought it would be good for her socially. I thought it would be a good experience for her. Something outside of school where she could be with children her own age."

This theme of socialization continued as Parent 1 answered questions about her perceptions of the Sensory Camp. This particular perception related outcomes of the camp as Parent 1 said, "I'm hoping this will kind of help her socialize. You know make her a little more comfortable around children her own age...."

Parent 2 also answered the first question with a response that supports the socialization theme as she said, "...I didn't want to let him get out of the setting or get him away from being around other children, away from interacting with other children..." The only other reference she made to socialization was related to the differences that she perceived in Sensory Camp and other camps. She related a story about an encounter Child 2 had with another child at Siskin Children's Institute. She talked about Child 2 hitting another child, but the other child simply grabbed his arm

instead of hitting him back. "....I think that if [Child 2] had started to strike someone [in a regular setting] for something because he doesn't know how to say, don't do it, he could get hurt, the other child might lash out at him." This is a reference to the social processes.

Parent 2's answers centered on the learning aspect of Sensory Camp. The first reference to learning came in the first question when she said, "[I didn't want to get him] away...from learning. That was my main reason for sending him. Continuity is a key thing for him...I'm looking for this to be a learning experience for [him]." Her perceptions about the learning theme continued as she said, "I want [him] to have the same kind of learning experiences that he has during the school day." When asked about the difference in the classroom and the camp her responses included, "I'm not sure there are that many differences, I think both of these are learning environments..." She also stated that she didn't think that a regular camp would know how to put curriculum together to address the things that her child needed. In fact the theme of learning became associated with an outcome when she said, "I don't know that I really have any expectations beyond him just learning..." Parent 1 also discussed the learning aspect of the camp, but in a slightly different vein when she said that she thought that a camp would be more fun than the classroom. In response to the question addressing the differences in Sensory Camp and the classroom Parent 1 said, "...you're going to find that there's a lot more fun experiences not class work, not working on goals really."

Both parents expressed in strong terms the need for their children to be safe. Parent 1 said, "I think that the facilitators will be watching [Child 1] closer that in a normal camp," and Parent 2 agreed that, "[security and safety will be] more appropriate. I think

it's at a higher level." Parent 2 expressed the issue of safety when she said that, "if anything ever happened to [Child 2] how could he tell me," and "he would be an easy child to be abused because he couldn't.... tell you..." The need for safety would appear to of a greater urgency for the camp for children with autism than for other camps. The parents indicated that they would not consider sending their children with autism to a normal camp for various reasons. One of the overriding concerns in sending their children to a camp for typically developing children was safety.

Perceived Differences in the Classroom and the Camp Setting

Parent 1's answers to questions about the differences in Sensory Camp and the classroom are clearly stated as she says, "I think a camp should be based more on fun" and "the children will be more like [Child 1] and that'll be good since she won't be so different from them." Parent 2 responded, "I'm not sure there are that many differences, I think both of these are learning environments..." consistent with the expressions regarding learning as a theme for the reason that parents send their children with autism to camp. She said that she was unsure that there were many differences, that both the camp and the classroom were learning environments but that she didn't think a regular camp could put curriculum together that would address child's needs.

Patterns

During the interview, the parents were asked to tell the researcher anything that she should know about the children so that the observation would be a better representation of the child. The intent of this question was to give the researcher insight into the children from the parent's perspective as background information for the observation portion of this data collection. However, in the analysis of the data, this question provided a link

between the reasons that the parents sent their children to camp with the parents' perception of their child.

This link was especially strong in the answers given to the questions about why the parents sent their children to Sensory Camp and the parents' perception of their children. When Parent 1 told the researcher what she should know about Child 1, the answers referred to social issues. Comments such as, "she's more like a typical child than people would think" and "she's more affectionate than some kids with autism" and she seems to have a sixth sense about people" were common throughout her description of Child 1. Parent 2's description of Child 2, on the other hand, described him as, "very curious in everything" and recounted that, "he was reading at 18 months of age". She also discussed his computer skills. Parent 2 said that Child 2 was loving and mischievous, but much of his focus was on learning.

Both parents used socialization and learning as reasons for sending their children with autism to camp. The pattern emerges when looking at the emphasis each parent placed on each of these themes and the focus of the parent's perception of the child. Parent 1 related a stronger emphasis on socialization and her perceptions of her child were largely social. Parent 2 emphasized learning. Also noteworthy is the fact that both of these parents expressed an anticipated outcome for the camp that was in keeping with this pattern. Parent 1 wanted her child to "come out a little more," and Parent 2 did not, "have any expectations beyond just learning."

Key Findings from the Parent Interview

These were the patterns that emerged from the parent interviews after analyzing the collected data.

- The parents' expectation of the camp was a reflection of the parents' perception of the child.
- The parents would be happy with an inclusive camp, as long as it was designed for children with autism.
- Both parents stated that the need for safety was the first priority and that camps designed for typically developing children would not be safe for their children.

Conclusions from Observations and Parent Interview

An analysis across the classroom and camp domains (see Appendix B) reveals several key findings. This analysis was completed by choosing the included terms (behaviors) that were found in all three children, and could be classified as the strict inclusion domain. These behaviors were found in both the camp and classroom. These terms were identified as follows: child initiated behavior in the camp and classroom with adult and peers, child response behavior in the classroom with adults and peers, non-social behaviors in the classroom, and social attributes in the camp and classroom. The final analysis produced three conclusions, which are listed below.

The Children are Social and have Distinct Personalities

As antithetical as it may be to the very definition of autism, the finding that the children observed were social, was nonetheless real for these children. When the observed behaviors of the children were applied to Katz and McClellan's (1997) social attributes checklist, which was developed for typically developing children, all three children registered just under 50% of the social attributes. While this may not be enough to qualify them as socially adept, it was more than was expected. Although all three children certainly fit the diagnosis of autism as outlined by The American Psychiatric

Association, the widely held connotation is that children with autism are asocial. Observations revealed that all three children had the social capacity to be empathetic, initiate communication, remember people with whom they had previously interacted, make up play, communicate about others, make eye contact, move into close proximity with others, be touched by others, take part in group interaction, express a desire, initiate and respond to non-verbal communication, vocalize/speak in meaningful contexts and comply with requests form adults and peers.

This finding suggested that rather than thinking of children with autism as non-social, perhaps the better way to categorize them was that they have different social expressions than typically developing children. Unless carefully observed, many of the behaviors categorized as social would have been missed. For example, the reaction of Child 1 when she knocked the other child down in the music room during camp was very subtle. Child 1 simply (and naturally) reached out to help her up and pat her back. Child 2's rhythmic - vocalizations at meaningful times might also be missed if not looking for them. Child 3's immediate response to the child who asked for blue shaving cream in the field science area of camp was an indication that he could initiate behavior in response to an indirect request. He was not asked directly. In fact, the request was directed to the teacher, but Child 3 responded. All of these might have been missed if not for careful observation.

Finally, the social ability of children with autism was not only dependent on their cognitive level but was also connected to their individual personality, which existed outside of the diagnosis of autism. Children with autism did not cease to have a personality when the diagnosis of autism was made. This finding is borne out in the parent interview, as the observations of the researcher matched the perceptions the

parents had of their children. Admittedly, the cognitive levels of the children varied, but the variances in the behaviors of the children were not accounted for simply by the differential in their cognition. Given the same classroom environment, the interests of the children were different. Child 2 was interested in visual images, while Child 1 took in much information through movement and interaction with others. Child 3 had a higher cognitive function, but his domains represented more of the characteristics of leadership. This is true in all of the observations except in the larger group. In this group, he did not want to lead unless he knew he was going to be correct as evidenced by the fact that he did not respond unless he had the correct answer. The personalities of children with autism should be considered when research is done with them.

The Behaviors of the Children are the Same in Both Settings

The behaviors of the children did not change with the environment. This could be seen clearly in the domain analysis completed for the camp and the classroom but there were some outstanding similarities for each child. Empathetic behaviors seen in Child 1 were noted in both the camp and in the classroom. Both the episodes in the Museum when she stopped to help the child she had knocked down, and in the classroom when she was concerned about the child who was on the carpet screaming, reveal the same empathetic behavior patterns. In both the camp and the classroom, she ran and tended to stand on the outside perimeter of the room. She also lined up, stacked, and unstacked items in both settings. The only significant difference in her camp and classroom behaviors was difficulty in making transitions in the camp. This was not as apparent in the classroom. This difference may be attributed to the difference in the size of the settings, Child 1's familiarity with the classroom setting, and the lack of a transition routine in the camp

setting. Child 2 evidenced the same initiation of play in the camp and in the classroom, as noted in the Barsamian episodes in the camp and in the playground episode at SCI. He made the same vocalizations in meaningful contexts, using a speech-like rhythm in both settings. He was also intrigued with mirrored movements in both settings. This was noted especially in comparisons of his behavior in the Stylemaker in the Art area of camp and the use of the mirror in circle time during the school day. He was intrigued by the video players in the camp setting and was equally intrigued by the computers in the classroom setting. Child 2 smiled frequently in both settings and ignored the presence of others at times. He was affectionate to adults in charge in both settings.

The comparison of Child 3 in the camp and the classroom was more difficult, due to his absence in the camp setting. During that brief time however, he did demonstrate a responsive behavior when he responded to the child who wanted blue shaving cream but did not ask Child 3 directly. Similar occurrences happened in the classroom when he took his chair to the appropriate place at the announcement of circle time, without being told directly to do so. Interaction with other children was demonstrated in the classroom when Child 3 referred to other children even to the point of reminding the teacher that the child was still at the snack table. He also initiated behavior with adults in both settings. The teacher walked into the instrument room and Child 3 initiated the *Old MacDonald* game during his one and only day of camp. Similarly, a teacher from another classroom walked into the SCI classroom and he initiated conversation with her.

These are just a few of the examples from the analysis that show the similarity of behavior between the two settings. It is prudent to remember that there were certain similarities in the settings. Although the physical environments were different, the

frameworks of the program were similar. The ratio of adult to child in the camp was two children to one adult, which is the same as in the classroom. In addition, the children moved from activity to activity in a predictable routine in the camp setting, and the same is true of the classroom. Additionally, both settings were exclusive to children with autism, and both were adult-directed environments.

On the other hand, evidence from the parent interview indicates that the behaviors would have remained the same, even if the environments had been different. Parent 1 referred to Child 1's behaviors at home that were seen in both the classroom and the camp settings. These behaviors included running and the emphasis on social behaviors. The same is true for Parent 2 as she reported that Child 2's at home behavior included a fascination with the computer.

The social attributes checklist, designed by Katz and McClellan (1997), was used in Table 5 to compare the behaviors of Child 1, 2 and 3 in the camp and classroom. It revealed that there was very little difference between the camp and classroom behaviors. It was noteworthy that of the twenty-four behaviors in the complete checklist, seventeen could be documented as observed in either the classroom or the camp setting. This finding was surprising considering the supposed non-social nature of the children, and their delayed development. It suggests that the children may be more social than a diagnosis of autism would indicate.

More Social Interaction Occurred Between Child and Adult

Although the researcher found evidence of social interaction between peers, more interaction by far occurred between the adult and the child in both the camp and the classroom. The campers interacted more often with all adults, including museum staff

Table 5

Social Attributes of the Children in the Camp and the Classroom

Behavior	Child 1		Child 2		Child 3	
	Camp	Classroom	Camp	Classroom	Camp	Classroom
Is usually in a positive mood.	Yes, his gestures and mood indicated this.	Yes, his gestures and tone of voice indicated this.	Yes, his gestures, tone of voice, and interaction indicated this.	Yes, his gestures, tone of voice, and interaction indicated this	Yes, his gestures, tone of voice, and interaction indicated this	Yes, his gestures, tone of voice, and interaction indicated this
Usually comes to the program willingly. (Reporting on daily entrance and transitions to new settings within the day.)	Yes, she entered willingly, but had trouble with transitions.	Yes, she had no trouble with transitions.	Yes, although she had some trouble with transitions.	Yes, he had no trouble in making transitions	He was a little hesitant to enter the front door, but had trouble with transitions	Yes, he had no trouble with transitions
Shows capacity to empathize.	Yes, she patted the child she knocked down.	Yes, she lay beside the child who was screaming.	Not observed	Not observed	Not observed	Not observed
Does not seem to be acutely lonely.	The actions of the children did not indicate loneliness.					
Displays capacity for humor.	Not observed	Not observed	Yes, he laughed at the visitors in field science.	Yes, he laughed during the video.	Yes, his antics during *Old McDonald* indicated a sense of humor.	Not observed

Table 5

Continued

Behavior	Child 1		Child 2		Child 3	
	Camp	Classroom	Camp	Classroom	Camp	Classroom
Approaches others positively.	Yes, she hugged the researcher without knowing her.	Yes, she took the hand of the mother.	Yes, he initiated a chase sequence in the Barsamian.	Yes, he initiated a chase with facilitator.	Yes, he played with the teacher in the instrument room.	Yes, he acknowledged the teacher when she came into the room.
Expresses wishes and preferences clearly; gives reasons for action and positions.	Yes, she signed for more in the music room.	Yes, she took the hand of the teacher to point to what she wanted.	Yes, he pointed to the bagel in the snack room.	Yes, he took the raisins from the child next to him.	Not observed	Yes, he negatively expressed his desires when he wanted to leave the independent center.
Takes turns fairly easily.	Yes, she took a turn in the bubble activity.	Yes, she took turns on the slide.	Yes, he waited his turn in the sensory room.	Yes, he took turns in being the leader.	Not observed	Yes, he took turns during circle time
Does not draw inappropriate attention to self.	No attention getting behaviors were observed in any of the children.					
Shows interest in others; exchanges information with and requests information from others appropriately.	Yes, she mimicked the sounds of the teacher.	Yes, she joined another child in the book center.	Yes, he offered a cracker to a teacher he had not seen in ten months.	Yes, he was interested in Child 1 when she was turning somersaults.	Not Observed	Yes, he talked to other children in class in ways that indicated interest.

Table 5

Continued

Behavior	Child 1		Child 2		Child 3	
	Camp	Classroom	Camp	Classroom	Camp	Classroom
Interacts nonverbally with other children with smiles, waves, and nods.	Yes, she played ball with a child in the sensory room.	Yes, she joined another child in the book center.	Yes, he smiled at the child to initiate a chase.	Yes, he looked at the arm of Child 1 when she put it on the computer mouse.	Yes, he noted the mothers who picked up their children.	Yes, he moved Child 2's chair into line.
Is sometimes invited by other children to join them in play, friendship and work.	Yes, another child in the sensory room began to chase her.	Not observed	Yes, A child in the Barsamian invited him to chase.	Yes, a child invited Child 2 to sit in the chair next to him.	Not observed	Not observed. Body language of the new child in class indicated that Child 3 would have been invited to play.
Gains access to ongoing groups at play and work.	Yes, she joined the children on the air mattress in the sensory room.	Yes, she joined the child in the reading center.	Yes, he joined the children in the sensory room.	Yes, he joined Child 2 turning a somersault.	Yes, he played with the child in the birthday room.	Yes, he joined the children on the slide.
Accepts and enjoys peers and adults of ethnic groups other than his own.	Yes, all of the children interacted with facilitators that were of other ethnicities in both settings.					

Table 5

Continued

Behavior	Child 1		Child 2		Child 3	
	Camp	Classroom	Camp	Classroom	Camp	Classroom
Has positive relationships with one or two peers; shows capacity to really care about them if they are absent.	Not observed	Not observed	Not observed	Not observed	Not observed	Yes, the new child in class who shared the same cognitive level, interacted with Child 3.
Enters ongoing discussion on the subject; makes relevant contributions to ongoing activities	Not observed	Not observed	Not observed	Not observed	Yes, he was involved in a conversation during the *Old MacDonald* scene in the instrument room.	Yes, he stayed on the topic during circle time.

and adults they had never seen before, than they did with each other. The same is true in the classroom. Children communicated with the teachers and facilitators more often than they did with each other. Although the domain analysis indicates that there are approximately the same categories of adult and peer initiation in both the camp and the classroom setting, the frequency of interaction varied greatly from peer to adult. The type and quality of the interaction between child and adult did not vary significantly from the camp to the classroom setting as seen in Table 6 taken from the domain analysis.

In any qualitative study, the data present findings that are unexpected and go beyond the guiding questions for the study (Marshall & Rossman, 1995). The previous findings were those "above and beyond" findings for this research, but there were four questions guiding this study. Why do parents of children with autism send their children to camp? How are camp settings (including curriculum, teacher interaction, and environment) different from classroom settings? What is the behavior of children with autistic spectrum disorder in a camp setting, designed for children with autism, as compared with a classroom setting? How do children with autism interact with each other in a camp setting? Although some answers to these questions were implied in the findings from the data sources listed above, the following were direct answers to the questions that formed the basis of this research.

The Questions and Answers

Why do Parents of Children with Autism Send their Children to Camp?

The reasons that these parents of children with autism sent their children to camps appeared to be based upon the parent's expectation of her individual child. Child 1's mother kept referring to socialization throughout the interview process with the

Table 6

Child Interaction with Adults and Peers in Both Settings

Child Initiated Behavior with Adults		
Behavior	Camp	Classroom
Making eye contact	√	√
Sitting with the teacher	√	√
Hugging	√	√
Watching adults	√	√
Indicating a desire for something	√	√
Moving into adult proximity	√	√
Smiling, laughing, waving	√	√
Singing a song with the teacher	√	
Engaging in conversation with an adult	√	√
Calling attention to another child	√	√
Handing an adult something	√	√
Imitating conversation	√	√
Telling an adult about other children	√	√
Acknowledging noise		√
Showing work to the teacher	√	√
Offering to help	√	√
Responding to a directive	√	√
Speaking using meaningful language	√	√
Initiating with adults		√
Child Initiated Behavior with Peers		
Behavior	Camp	Classroom
Saying the peer's name	√	√
Vocalizing	√	√
Telling a peer to do something	√	√
Looking at the peer	√	√
Making eye contact	√	√
Reaching for an item from a peer	√	√
Moving into close proximity with a peer	√	√
Changing the peer's seat position		√
Responding to a peer's request	√	
Watching peers	√	√
Sitting with peers	√	√
Caring for peers	√	√
Playing with peers	√	√

researcher. Child 2's mother referred repeatedly to academics and the fact that she did not want Child 2 to get behind over the summer. Another interesting connection to this was the idea these expectations were reflected in the observed behavior of the children. Social behaviors such as eye contact, joint attention, greeting, giving and receiving comfort, imitation, verbal interaction, and awareness of presence noted by Hauck, Fein, Waterhouse, and Feinstein (1995) were observed in both children. However, Child 1's behaviors were more playful and social in nature, while Child 2 was more academic, when given free choice of activities.

Although she was largely non-verbal, Child 1 initiated social behavior with adults and with other children, (even children who were total strangers as well, as adults that were not necessarily known to the child) in both the classroom and the camp setting. Her IEP noted that she took in sensory information kinesthetically through running and jumping, and her observed behaviors reflect this. When on the playground, she did not isolate herself and she was content in the camp setting to be in the middle of groups of children as evidenced particularly in the music studio and in the sensory rooms. Her times of being apart from others were usually during times of sensory overload, as noted in the activity room and sensory room when she walked around the outer circumference of these rooms.

Child 2, on the other hand, when left to his own choices in the classroom, chose to spend large amounts of time at the computer and his first choice of activity on the playground was the tire swing, which was isolated from the other children. His IEP listed the initiation of social interaction as a goal. In the camp setting, Child 1 was stimulated and fascinated by watching his own movements as evidenced by the time he spent in the

Style Maker (blue screen) gallery. He also spent a lot of his time watching the videos in the paleontology area. Although he did initiate social interaction with a peer in the camp setting, this might be described as a covert activity rather than an overtly social action (He merely looked at the child instead of overtly approaching him).

The results of this study indicated that for these parents, expectations of a camp for children with autism are closely tied to the actual behaviors the children bring to the camp setting. A delimitation of this study was that it did not investigate how the behaviors of the children are then connected to the parental expectation. In other words, this study did not investigate whether the child's behaviors were more socially or academically oriented because the parent expected this behavior, or if the parent expected the behavior because the child exhibits the behavior.

Kassari and Sigman (1997) completed research that has relevance to this question of caregiver perception. In a study linking caregivers' perception of the child with autism to the developmental ability of the child, they wrote, "Caregivers undoubtedly form perceptions of their children's behavior from a complex interaction of day-to-day experiences with their children, expectancies for children's development and behavior...and their feelings regarding their ability to cope with discrepancies between expectations and behavior" (p 55). The data in this study corroborated this finding, as the parents' perceptions of their children's developmental abilities were linked to the rationale for sending the child to camp.

How are Camp Settings Different from Classroom Settings?

The camp and classroom settings were both alike and different. The most relevant similarity between the two was found in the teacher/student ratios and teacher/student

interaction. Communication between teacher and child in both settings appeared to be essentially the same, since adults in both settings communicated using methods such as eye contact, one-on-one oral communication, group instruction, signing, giving choices to children, modeling behavior, and physical clues. Additionally, there was more communication between the adults and children, than between the adults or between the children. This was true even in the classroom setting, where three adults worked in the same relatively small space.

Differences between the two environments included the objectives and goals that motivated the curriculum. The camp curriculum was driven by activities, and the classroom curriculum was driven by the IEP goals set for each child. Included in camp activities were the exploration of the museum's exhibits, and the activities that were set up in each area. In the classroom, the activities were designed to convey the curriculum, which was designed for the benefit of each child. In the Museum setting, the exhibits were not designed to meet the needs of these children, although many of these exhibits did prove beneficial and enjoyable for the campers.

The camp activities, arranged for each core area of the museum, were chosen for their appeal to children with sensory integration issues, and for their therapeutic effect on these children. The campers spent about 15 % of their camp time doing these activities. However, the classroom curriculum was designed specifically around the children's IEP goals, and consumed the day. Even snack time in the classroom was designed to facilitate the individual goals that each child needed to achieve. Though activities similar to those in the classroom took place in the camp setting, the classroom facilitators were aware of the child's IEP goals as the child was completing the activity, so that particular skill-

building needs could be addressed. The camp facilitators were not aware of the child's IEP goals.

The physical environments differed tremendously. The classroom is much smaller and more intimate than the museum setting, and other than going to the larger group setting or outside to the playground, the children stayed in this classroom all day. The museum was quite large and open. Even the exhibit galleries were large and geometrically irregular, as opposed to rectangular, like the classrooms. The only two rooms that were analogous to the classroom environment were the Museum classroom, which was used for volcano making and bubble play, and the birthday room, which was used for drop-off, pick-up, and snack times. Even the large playground at the Siskin Children's Institute was open and had lines of sight among all of the components, which was not the case in the museum galleries.

Other differences existed in the nature of the environments. The Museum contained exhibits that could have been viewed by the children as oversized toys. These exhibits were played with daily by every child, allowing for daily interaction with the environment for the duration of the camp time. In the classroom, the only space analogous to this was the playground. Classroom activities could be compared to the activities provided in the camp setting that composed only about 15% of the time. Therefore, the camp time was spent more in playground type activities, and the classroom was an elaboration of the daily activities in the museum galleries.

This difference in physical space may be a reason for the difficult transitions noted in the Sensory Camp that were absent in the classroom setting. Child 1 and 2 did not have problems moving from one activity to another in the classroom, although they did not

necessarily complete these transitions without adult guidance. In the camp setting, however, both children experienced some difficulty making transitions from one gallery to another.

The classroom day began and ended with group time, and included group times interspersed throughout the schedule. Snack time, art activities, circle time, and lunch were examples of intentional group time. In the camp setting the only group time was during drop-off, pick-up, and snack time. Even though these activities took place in a group, they were actually outside of the time defined for the camp. Additionally, there was no group structure to these times, leaving the children with autism to engage in activities that they chose, or no activity at all. In the classroom, however, the group time was structured, and intentionally designed to engage children in conversation and other social activities.

How do the Children Behave in the Two Settings?

The trends in social behavior observed in the camp setting for each child, were the same trends noted in the classroom. The only striking difference is that transitions were not as problematic in the classroom, as they were in the camp. In the classroom, there was a routine for transitions, marked by the fact that with each change in activity, the child had to go to a picture chart on the wall and move a picture. This indicated that he/she had finished the current activity and would be moving on to the next activity. There was no transition routine in the camp setting.

This trend toward similar behavior between the two settings was true even for Child 3, who was only observed one day in the camp setting. The behaviors observed in that short time were also seen in the camp setting. Child 3 used standard language to

communicate in the classroom, as he did in the camp setting. He initiated conversation in both settings, and engaged in the same type of behaviors although there were no negative outbursts as noted in the classroom. This was probably because he was in the camp setting for such a short period-of-time. The same findings were true for Child 1 and Child 2. They made the same types of choices in the classroom, as they made in the camp setting.

For example, Child 1 exhibited the same running behaviors, including the movement in patterns, in both settings. She also vocalized in meaningful contexts in both settings, although the teachers reported that the amount and quality of vocalizations increased during the course of Sensory Camp, and continued to increase when she returned to the SCI classroom. She also was observed initiating behavior with people whom she did not normally see. This was evidenced by the encounter in the music area with the child she accidentally knocked down, and with the mother in the classroom, whom she took by the hand and led through the classroom. Child 1 also sought out and enjoyed interactions with facilitators, and lined up objects in both settings. She had very limited interaction with computers in both the camp and the classroom.

Child 2's behavior in the camp was also predictive of his classroom behavior. He was engaged with videos and computers in both settings. He also seemed to enjoy a focus on his hands, and the movement of his arms, especially the mirrored movement of his arms. He enjoyed the manipulation of objects with his hands and particularly enjoyed textural objects. In both settings he usually chose to engage in activities away from the rest of the group, although in each setting, he was observed initiating a chase behavior. It is interesting to note that the initiation of play in both instances was related to chasing.

Although in the camp, it was with a peer, and in the classroom, the chasing was with an adult.

How do Children with Autism Interact in a Camp Setting?

As noted above, the social behavior of the children did not appear to be different in the camp and classroom setting. The trends in social behavior demonstrated in the camp setting for each child were the same trends noted in the classroom. In articulating these behaviors, they approach many of the traits noted by Katz and McClellan (1997) in their social attributes checklist of typical children. Out of these twenty-four behaviors, the researcher observed sixteen behaviors in one or all of the three children during this study as shown in the Observed Social Attributes chart shown previously.

The conclusion of this observation is that the children studied in this investigation are somewhat social but may display that socialization in ways that are not as overt and therefore not as obvious to the casual observer. This is not to say that the children will be readily accepted by typically developing peers as being social. It is to say that others may be too quick to assume that children with autism are not social beings.

Three children, (including their behavior and the information gained from reading their records), were the focus of the data collection for this study. However, the camp and classroom settings provided a context that made the investigation meaningful, since the study of social behavior needs to take place in a social context. Finally, the parents provided clues that unlocked the answers to the questions investigated in the study. Following the collection and analysis of data, the next step in the study was to determine what these findings meant to the field of camps for children with autism, which is explored in Chapter 5.

CHAPTER V: IMPLICATIONS

Implications Across Key Findings

As the key findings emerged from the individual data sources, the answers to the study's guiding questions became apparent. From these key findings, four implications emerged. These are presented below and are supported by the key findings from the various data sources reported in Chapter 4, along with a discussion of broader implications for the field.

Camps should be Inclusive and Include Group Time

Supporting Key Findings

- Parents would send their children to an inclusive camp as long as it addressed the safety requirements of their children.
- Behaviors of the children did not change from the camp to the classroom.
- More social interaction happened between children and adults than between children in both settings.
- Group time was a part of the SCI curriculum. There was no group time in the Sensory Camp curriculum.

There were several reasons that Sensory Camp was initially designed to be exclusive to children with autism. One of these reasons was the perception held by the developers that parents of children with autism wanted a program, accessible to their child *because* he/she was autistic. However, the parents in this study reported that they would have been willing to enroll their children in an inclusive camp.

One of the assumptions in the development of the camp curriculum was that the camp would provide a more social environment than the classroom. This did not prove to be

true. In both settings, the children interacted more often with adults than with their peers. It was unclear in this research if the higher frequency of interactions between adult and child was a result of the atypically social nature of the peers and the normally social nature of the adults. There could be several reasons for the difference in frequency of child-to-child and child-to-adult interactions, including the fact that the curriculum in both programs was adult-directed. It may be that as a part of the autistic experience, children with autism relate better to adults (Hauck, et al., 1995).

The literature on camps (Gibson, 1974; Scanlin, 2001) indicates that the main difference between a camp and other settings is that a camp has people-centered goals. But in these two settings, which were both exclusive to children with autism, there appeared to be no difference in the concentration placed on socialization (i.e. people centeredness). The objectives of the SCI classroom included the intellectual, emotional and the *social* progress of the individual child. Although there was a peer program at SCI, the observed children with autism were in an exclusive setting. With this arrangement, there could be more intensive concentration on therapies, allowing the children to make social, emotional, and intellectual progress. Even though the observations revealed that children with autism are social, they were social in ways that were more subtle than and different from their typically developing peers. Findings from this research support that better progress toward more overt socialization would be made in a setting inclusive of typically developing children.

It is recommended that developers of camps for children with autism and the developers of other programs for children with autism, such as the Siskin Children's

Institute consider creating an inclusive setting. This would prove to be more beneficial for developing social skills than one exclusively for children with autism.

This recommendation is based on the assumption that the objective of a camp for children with autism is the same objective of camps in general, as articulated by both Scanlin (2001) and Katz (1997). Those objectives are expressed as social-centered outcomes such as team building, social competence, and making friends. If these social centered goals are the objective of a camp for children with autism, then there are at least two caveats for recommending that Sensory Camp be inclusive:

- If a child's behaviors do not change just because he/she is placed in a new physical environment and given a new routine, other factors, such as the inclusiveness of the program, will need to be addressed to effect any type of social change.

- If two children whose social interactions are more subtle than overt are put together, neither will make much progress toward overt socialization.

Both of these caveats are borne out by the findings in this investigation. The behaviors of the observed children did not change from the classroom to the camp, and in both settings more of the social interaction was between the child and the adult rather than child and child. It is assumed that the reason for this is that the adult was more overtly social than the child. The need for inclusion of typically developing peers is obvious when these two elements are considered. Additionally, other research points to this conclusion. The East Bay study (Coffey & Umbarger, 1967), concluded that if the goal of a group setting is to affect the social treatment of children with autism, there should be

typical children in that group. This conclusion is not in opposition to the parents' wishes that the camp be designed for children with autism. It also does not preclude the inclusion of typically developing children in the camp.

In addition to the implication that programs for children with autism should be inclusive, there is a recommendation that the developers of camps build in an intentional group time. Sensory Camp provided no socialization component, except for the fact that the children were paired with a facilitator. But no activity was observed that required two of the campers to work together to accomplish a task, or even allowed for any type of group interaction. Even though, according to the definition of a camp, the Sensory Camp should have been more social, the classroom was the more social of the two settings. This was partly a function of the curriculum that included intentional group times. Camps that wear the inclusive label are not necessarily facilitating social interaction that will effect change in children with (or without) autism. The developers of camp curriculum should incorporate group interaction into the curriculum.

Children with Autism are Children with Unique Personalities

Supporting Key Findings

- Behaviors of the children did not change from the camp to the classroom.
- The SCI curriculum was teacher-directed. Sensory Camp allowed free choice of activities in the exhibit areas.
- The foundations of the two curricula were different. The SCI curriculum was focused on the development of the child as articulated in the IEP. The Sensory Camp curriculum was focused on activities.

- Parents' perception of the camp was a reflection of the parents' perception of the child.
- The observed children were social and had distinct personalities.

The environments changed in this study but the personalities of the children remained the same. The implications of this finding run the gamut from simple to profound. Possessing an observable personality implies that children with autism are distinct children and confirms the importance of people first language, such as the use of the term "children with autism" instead of autistic children. This study also revealed that camp behavior was predictive of classroom behavior, and assumes that the reverse would be true. Other than the variances accounted for by the different operational routines in the camp and the classroom setting, the behaviors of each of the children from one setting to the other were similar. Further study would be valuable to determine the level to which behavior from setting to setting is predictable. This implication suggests a comparative study of typically developing peers as well as children with special needs could be completed to determine the degree to which classroom behaviors and dynamics are predictive of camp behaviors for those same children.

Additionally, this finding informs camp faculty that just like children who are typically developing, children with autism will arrive at camp with different personalities. The point is, even though the defining factor in the term autism is a lack of social capacity, children with autism have different capacities for socialization, just like typically developing peers. Children with autism need to be carefully observed for these social behaviors, since they are often evidenced more subtlety than those same behaviors in typically developing children. This conclusion indicates the need to establish other

types of social programs assumed to be out of the reach of children with autism because they are thought to be unsociable.

All Camps should have Clearly Defined Objectives

Supporting Key Findings

- The objectives of SCI were clearly defined, but there were no stated objectives for Sensory Camp.
- The foundations of the curricula were different. The SCI curriculum was focused on the development of the child as articulated in the IEP. The Sensory Camp curriculum was focused on activities.
- Teacher/facilitator interaction was similar in both settings.
- Group time was a part of the SCI curriculum. There was no group time in the Sensory Camp curriculum.
- There was consistent structure for transitions in the classroom. There was no specific structure for transitions in the Sensory Camp.
- The schedules of the camp and classroom were similar in that a structured rotation was followed each day.
- Parents' perception of the camp was a reflection of the parents' perception of the child.

A difference in the Sensory Camp and the Siskin classroom was intent. The purpose of the Siskin curriculum was to allow the child to develop according to his/her Individualized Educational Plan. Sensory Camp curriculum was based on the desire to provide activities, which could be enjoyed by the children and are sensory in nature. Yet,

even though it was a camp, there was more attention given to the development of group social interaction in the classroom setting.

If the defining factor of the term camp is adhered to, all camp programs should be organized around an intent that is social in nature. The activities should then support this intent with more attention being paid to details such as the incorporation of a group time and a structure for transitions. The implication for this is much broader than just Sensory Camp. All camp programs should have a purpose that drives them. The purpose of a program guides the creation of activities to support the goals of the program and determines the evaluation to assess the outcomes of the program. Program developers often neglect to determine purpose and align the activities and evaluation with that intent. This is true in many educational settings, including classrooms, camps, and museum programs.

Another implication for the developers of curriculum is that assumptions should not be made about a parent's expectation of the program. As the developers of camps formulate objectives for camps, they should consider that the final decision-makers for attendance at the camp are parents and that each parent could have different expectations for the outcome of the camp. This study revealed that expectations may be linked to the parent's perception of the child, and that these expectations may not be the generally accepted outcome of social competence, making friends, getting along, working as a team, and other people-centered goals as noted by Gibson (1974) and Scanlin (2001).

Camps should be Designed for the Child with Disabilities and Accommodations Made for Typically Developing Children

Supporting Key Findings

- Parents stated the need for safety and their perceptions that camps designed for typically developing children would not be safe.
- Parents would send their children to camps with an inclusive setting as long as it was designed for children with autism.

The Americans with Disabilities Act, as well as the Individuals with Disabilities Education Act, call for reasonable accommodations to be made for people with disabilities in various settings. A conclusion of this study was that inclusionary camp settings for children with behavioral disabilities may be better addressed by designing the camp for children with disabilities and making reasonable accommodations for typically developing children. It is reasonable to assume that the safety of children is the primary concern of all parents and program developers. If the program is designed to accommodate the safety requirements of children with autism, it will certainly meet the safety requirements of typically developing children.

An implication for further study is an investigation of curricula that are designed for children with special needs. Is this curriculum as easily and effectively adaptable for typically developing children, as the "regular" curriculum is adaptable for children with special needs? These questions open the door to larger questions addressing the differences in special education curriculum and curriculum designed for typically developing children. Given the same cognitive level, is the curriculum for children with special needs applicable for typically developing children? Benner (1998) makes an

argument for this as she proposes that, "Students with disabilities need programs adhering to curriculum standards of equivalent value as those in general education" (p. 185). She also offers the opposite side of this argument stating that, "IEP's offer the best curricular guide for each individual student receiving special education" (p. 188). The implication of the research in this project supports neither of these arguments, which begin with the typically developing child. Instead, the argument in this research begins with curricula designed for the population of children with special needs, and asks if appropriate accommodations can be made for typically developing children. The rationale for the question is that if program planners begin by planning content and methodology for the most delicate of learning needs, the needs of all other children would be met when accommodations were made.

The history of special education has more to do with funding than with curriculum or methodology. In 1966, Congress established the Bureau for Education of the Handicapped and federal funds were earmarked to serve children with disabilities. However, many children with disabilities remained unserved and in 1975, the law originally known as the Education for All Handicapped Children Act (EAHCA) was passed. With it came a funding mechanism to defray the costs of special education programs. (EAHCA became IDEA when in 1990, the more politically correct term "disability" replaced the term, handicap.) The four purposes of IDEA are to: ensure that all children with disabilities have a free and appropriate education.... that meets their particular needs, ensure that the rights of children with disabilities...are protected, assist states to provide for the education of all children with disabilities, assess and ensure the effectiveness of efforts to educate children with disabilities (Council for Exceptional

Children, 2002). The argument proposed here is that these four tenets are no different for children with disabilities than for typically developing children. The two that are the most relevant to this implication are that all children need services to meet their particular needs, and that the effectiveness of program must be evaluated. If a program or curriculum is designed with these tenets, then all children will be well served.

The core of contemporary thought concerning curriculum is that it should be designed to meet a child at his point of need. Constructivism is an approach to learning that focuses on making connections to prior knowledge so that the learner constructs new knowledge (Schunk, 2000). The point at which a learner's prior knowledge ends is his point of need. If the curriculum is designed to meet the lowest point of need and accommodations are made to raise the bar for other points of need, educators could be more certain that the child had been reached. This proposition to develop a program by making curriculum, activities, and logistics accessible to the lowest point of need and make accommodations for the typically developing child is analogous to laying bricks. The bricks are laid one upon the other because if there is not a solid foundation, the whole thing crumbles. The same could be said of program development. If the most basic of curriculum, activities and logistics are planned for and accommodations are made for others, then all will be solidly served.

In conclusion, this research has served several purposes. The intent is that it will spark an interest in designing programs for children with autism in settings that are not readily thought about for children with autism. Additionally, it will inform the design of these programs so that they provide the most benefit to and enjoyment for children and their parents. Finally, it is the hope of the researcher that the reader of this work has

gained an understanding, which might impact the field of camps for children with autism. And perhaps more importantly, it is hoped the reader will share the researcher's fascination with the subject of autism, her respect or parents and their children with autism, and especially her affection for the children observed in this study.

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Appendix A: Camp and Classroom Schedules

Camp Schedule

	Volcano	School Bus	Rocks	Fossil	Mineral
8:30–8:45	Birthday	Birthday	Birthday	Birthday	Birthday
8:45–9:10	Dino	Changing	Music	Movement	Art
9:10–9:35	Movement	Dino	Art	Music	Dino
9:35–10:00	Snack	Snack	Dino	Dino	Snack
10:00–10:25	Art	Music	Snack	Snack	Movement
10:25–10:50	Music	Art	Movement	Changing	Changing
10:50–11:10	Changing	Movement	Changing	Art	Music
11:10–11:30	Closing	Closing	Closing	Closing	Closing

Monday, July 6
Art: Snake Magnets
Music :Finger piano and songs
Dino: Feel sandstone & make a rock
Changing: Magic School Bus

Tuesday, July 9
Art: Rock placemats
Music: Finger piano
Dino: Cartesian Diver & whirlpools
Changing: Bubbles in classroom

Wednesday, July 10
Art: Animal stamps
Music: Choose an instrument
Dino: Race frogs
Changing: Invention area

Thursday, July 11
Art: Earth clay sculptures
Music: Choose an instrument
Dino: Terrarium making
Changing: Spice painting

Friday, July 12
Art: Rock bracelets
Music: Repeat earlier activities
Dino: Worm garden
Changing: Bubbleology

Monday, July15
Art: Camouflage banks
Music: Finger piano and songs
Dino: Bone impressions
Changing: Magic School Bus

Tuesday, July 16
Art: Paint a volcano
Music: Finger piano
Dino: Butterflies
Changing: Bubbles in classroom

Wednesday, July 17
Art: Rock paperweights
Music: Choose an instrument
Dino: Hot & cold reactions
Changing: Oobleck & whirlpools

Thursday, July 18
Art: Slithering Sams
Music: Choose an instrument
Dino: Egg hunt
Changing: film canister volcanoes

Friday, July 19
Art: Rock pins
Music: repeat earlier activities
Dino: Bunnies
Changing: Bubbles in classroom

Classroom Schedule

Daily Schedule

8:00-8:30	**arrival / schedules / free choice**
8:30-9:15	**sensory / table activities**
9:15-9:30	**circle**
9:30-9:45	**snack**
9:45-10:45	**centers**
10:45-11:00	**bathroom / break**
11:00-11:30	**inclusion / discrete trials**
11:30-12:00	**lunch**
12:00-12:15	**brush teeth**
12:15-1:00	**outside**
1:00-1:15	**bathroom / water break**
1:15-1:30	**table activities**
1:30-1:45	**free choice**
1:45-2:00	**art / sensory**
2:00-2:15	**snack**
2:15-2:30	**circle / behavior charts**
2:30-2:45	**clean up / classroom jobs**
2:45-3:00	**load busses**

Appendix B: Analysis Documents

Master Outline for Findings

The following master outline served as the basis from which to report the findings.

Research questions

What is the behavior of children with autistic spectrum disorder in a camp setting designed for children with autism as compared with a classroom setting?

How do children with autism interact with each other in a camp setting?

How are camp settings including curriculum, teacher interaction and environment different from classroom settings?

Why do parents of children with autism send their children to camp?

I. Parent Perceptions
   - A. Socialization
   - B. Learning
   - C. Safety
   - D. Patterns

II. Curriculum Analysis
   - A. Official Curriculum
   - B. Operational Curriculum

III. Environment Analysis
   - A. Physical Comparison
   - B. Operational Analysis

IV. Social interactions in the Camp and in the Classroom

A. Child Initiated Behavior in the Camp and Classroom

1. With Adults

2. With Peers

B. Child Response Behavior in the Camp and Classroom

1. With Peers

2. With Adults

3. In a Group

C. Non-social Behavior in the Camp and the Classroom

D. Social Attributes in the Camp and classroom

Domains Sensory Camp
Strict Inclusion: X is a Kind of Y

Included terms	Semantic relationship	Cover Term
Choosing which exhibit to explore	Is a kind of	Child initiated behavior with exhibits
Putting face on the exhibit		
Vocalizing while exploring		
Sitting away from the exhibit but looking at it		
Moving among the exhibits without stopping to interact		
Using unintended sensory intake		
Using patterns to explore the exhibit		
Slapping the button		
Using the activity in unintended ways	Is a kind of	Child initiated behavior with walk-up activities
Choosing the order for completing the activity		
Choosing not to focus on the activity		
Pulling back when the facilitator tries to place hands on an activity		
Making eye contact	Is a kind of	Child initiated behavior with adults
Sitting with the teacher		
Hugging		
Watching adults		
Indicating a desire for something		
Moving into adult proximity		
Handing an adult something		
Smiling		
Singing a song with the teacher		
Engaging in conversation with an adult		
Calling attention to another child		
Giving vocal information	Is a kind of	Child initiated peer interaction
Responding non-vocally to a child's request		
Making eye contact		
Watching peers		
Sitting with peers		
Caring for peers		
Playing with peers		
Expressing a desire to peers		
Moving into proximity with peers		

Included terms	Semantic relationship	Cover Term
Approaching peers		
Looking at the other child	Is a kind of	Child response to peer and adult
Responding to a directive		
Laughing		
Waving		
Playing with toys		
Handing others items		
mimicking		
Speaking using meaningful vocables		
Sitting quietly with the teacher to cool down	Is a kind of	Non-social behavior
Watching a video to cool down		
Covering eyes with hand to cool down		
Putting head into hands to cool down		
Showing hesitancy to enter into an activity		
Moving away from the group		
Moving child from place to place	Is a kind of	Adult behavior
Engaging children with each other		
Engaging child with activity		
Asking questions		
Modeling activities and the use of exhibits		
Providing physical barriers to contain the child		
Distracting child	Is a way to	Allow child to make the transition
Showing pictures of the next place		
Picking up the child		
Hold the child's hand		
Instrument room	Is a place where	Social behaviors occur
Outside the music area		
Field science		
Birthday room		
Art		
Mouth of music		
Instrument room		
Little Yellow House		
Classroom		

Included terms	Semantic relationship	Cover Term
Sensory areas		
Ear of music		
Barsamian		
Instrument room	Is a place where	Non-social behaviors occur
Entering the front door		
Barsamian		
Entering the birthday room		
Entering the music area		
Entering the recording studio		
Writhing on the floor	Is a characteristic of	Transition difficulty
Running		
Pulling back on the facilitator's arm		

Domains Classroom
Strict Inclusion: X is a Kind of Y

Included terms	Semantic relationship	Cover term
Conversation	Is a kind of	Child initiated behavior with adults
Imitation of conversation		
Offer to help		
Showing work to teacher		
Acknowledgement of unfamiliar noises		
Telling adult about other children		
Eye contact		
Hugging		
Taking the adult's hand to the child's choice of activity		
Invitation to play		
Mimicking behavior		
Smiling		
Looking at the adult		
Asking questions		
Signing		
Moving into adult proximity		
Saying the peer's name	Is a kind of	Child initiated behavior with peers
Vocalizing		
Telling a peer to do something		
Looking at the peer		
Caring for the peer		
Making eye contact		
Putting something in the peer's face		

Included terms	Semantic relationship	Cover term
Reaching for an item the peer has	Is a kind of	Child initiated behavior with peers
Moving into proximity with another peer		
Moving the peer's chair		
Saying the peer's name		
Chasing the peer		
Approaching the peer		
Move the picture clue on the chart	Is a kind of	Child initiated solitary behavior
Singing		
Rolling on the floor		
Looking in the mirror		
Choosing an area		
Vocalizing		
Placing items in a line		
Playing on the computer		
Looking at books		
Running in patterns		
Swinging alone on the playground		
Rocking back and forth		
Putting head into hands		
Focus on the teacher	Is a type of	Child initiated group behavior
Operating the television		
Vocalizing		
Focusing on a book being read		
Leaving the group		
Doing routine activities without being told		
Focusing on the group leader (adult or child)		
Saying the answer after everyone else	Is a type of	Response behavior in a group
Looking at others to lead		
Focusing outside of the group		
Focusing on an object		
Giving a correct or incorrect response		
Keeping a rhythm		
Signing		
Screaming		

Included terms	Semantic relationship	Cover term
Ignoring	Is a type of	Response behavior to peers
Vocalizing		
acknowledging		
Being compliant		
Smiling		
Playing with toys		
Compliance	Is a type of	Response behavior to adults
Not doing the requested action		
Vocalizing		
Leaving the area		
Taking the adult by the hand		
Indifference		
Taking an item that has been offered		
Mimicking behavior		
Pointing to a body part		
Hug		
Appropriate vocal response		
Repeating words in a conversation		
Sitting in the teacher's lap		
Appropriate non-verbal response		
Misunderstanding directions		
Looking at the adult		
Holding the child's hand	Is a type of	Adult activity
Signing		
Asking questions		
Engaging the child in an activity		
Modeling activities		
Holding the child's hand to model		
Blocking a child's escape path		
Routine	Is a way to	Make a transition
Picture chart		
Singing		
Screaming	Is a characteristic of	overstimulation
Running		
Putting head into hands		
Playground	Is a place where	Social interactions occur
Circle time		
Snack time		

Included terms	Semantic relationship	Cover term
Independent center	Is a place where	Social interactions occur
Reading center		
computer center		
The open space of the room		

Strict Inclusion– Child 1 Camp

Included Terms	Semantic Relationship	Cover Term
Using patterns	Is a kind of	Repeated behavior
Vocalization		
Writhing on the floor		
Running		
Pulling back on an adults hand		
Lining up objects		
Sitting in a dark place	Is a kind of	cool down
Watching a video		
Hesitancy to enter an area	Is a kind of	Non-social behavior
Moving in areas away from the group		
Difficulty making transitions		
Sitting with the teacher	Is a kind of	Child initiated adult interaction
Making eye contact		
Watching the adult		
Hugging the adult		
Indicating a desire for something		
Making eye contact	Is a kind of	Child initiated peer interaction
Watching peer		
Sitting with peer		
Caring for the peer		
Playing with the peer		
Expressing a desire to the peer		
Approaching the peer		
Waving	Is a kind of	Child response behavior
Playing with toys		
Handing items to others		
Receiving an item when offered		
Mimicking		
Refusal to comply		

Strict Inclusion- Child 1 Classroom

Included terms	Semantic Relationship	Cover Term
Running in patterns	Is a kind of	Repeated behavior
Laying on the floor		
Vocalization		
Lining up objects		
Rocking		
Not observed		Cool down
Rolling on the floor	Is a kind of	Non-social behavior
Looking in the mirror		
Looking at books		
Rocking		
Screaming	Is a kind of	Child initiated adult interaction
Eye contact		
Hugging		
Taking adult hand to child's choice of activity		
Signing		
Facing teacher		
Looking at the peer	Is a kind of	Child initiated peer interaction
Eye contact		
Reaching for an item the peer has		
Moving into close proximity with a peer	Is a kind of	Child initiated peer interaction
Caring for a peer		
Focusing outside of the group	Is a kind of	Child response behavior
Focusing on the activity		
Vocalizing		
Ignoring peers		
Compliance		
Leaving the area		
Indifference		
Receiving an item when offered		
Mimicking		

Strict Inclusion – Child 2 Camp

Included term	Semantic Relationship	Cover Term
Putting head into hands	Is a kind of	Repeated behavior
Vocalizing in meaningful vocables		
Interest in mirror images		
Covering eyes with hands	Is a kind of	Cool down
Putting head into hands		
Covering eyes with hands	Is a kind of	Non-social behavior
Pulling back on the facilitator's hand		
Moving away from others		
Ignoring others in close proximity		
Stroking hands and face of facilitator	Is a kind of	Child initiated adult interaction
Sitting with the adult		
Making eye contact		
Smiling		
Vocalizing in meaningful context		
Moving into proximity with the adult		
Handing the adult something		
Play		
Making eye contact		
Moving into proximity with another child	Is a kind of	Child initiated peer interaction
Ignoring	Is a kind of	Child response behavior
Responding to the directive of a peer or an adult		
Laughter		
Non-compliance		
Imitation		

Strict Inclusion – Child 2 Classroom

Included terms	Semantic Relationship	Cover Term
Putting head into hands	Is a kind of	Repeated behavior
Vocalizing in meaningful vocables		
Interest in mirror images		
Not Observed		Cool down
Pulling back on the facilitator's hand	Is a kind of	Non-social behavior
Moving away from others		
Ignoring others in close proximity		
Making eye contact	Is a kind of	Child initiated adult interaction
Hugging		
Invitation to chase		
Mimicking vocalization		
Smiling		
Looking at the adult		
Looking at the peer	Is a kind of	Child initiated peer interaction
Reaching for an item the peer has		
Moving into close proximity with the peer		
Focus on the group	Is a kind of	Child response behavior
Focus outside the group		
Ignore peers		
Compliant to peers		
Smiling		
Compliance to adult		
Not doing the requested action		
Responding appropriately		

Strict Inclusion – Child 3 Camp

Included Terms	Semantic Relationship	Cover Term
Not Observed		Repeated behavior
Sitting quietly in a dark place	Is a kind of	Cool down
Hesitancy coming in the front door	Is a kind of	Non-social behavior
Calls attention to a peer's behavior	Is a kind of	Child initiated adult interaction
Sings a song with the teacher		
Engages in conversation with a peer's mother		
Sits with the teacher		
Makes eye contact		
Plays with toys	Is a kind of	Child response behavior
Responding to a peer's request		

Strict Inclusion – Child 3 Classroom

Included Terms	Semantic Relationship	Cover Term
Not Observed		Repeated behavior
Giving information	Is a kind of	Child initiated peer interaction
Making eye contact		
Looking at the peer		
Saying the peer's name		
Telling a peer to do something		
Moving into proximity with a peer		
Chasing a peer		
Reaching for an item that the peer has		
Calling attention to a peer's behavior	Is a kind of	Child initiated adult interaction
Conversation and imitation of conversation		
Asking questions		
Showing work to teacher		
Makes eye contact		
Saying the answer after everyone else	Is a kind of	Child response behavior
Looking to others to lead		

Included Terms	Semantic Relationship	Cover Term
Focusing outside the group		
Ignoring peers		
Compliance to adult		
hugging		
appropriate vocal response		
sitting in a teacher's lap		
screaming		
mimicking		
Responding to a peer's request		

The Environments Comparison and Contrast

	SCI	CDM
Rotation	Children move daily to the playground and twice a week to a group room. Within the room there is a consistent schedule which includes rotations to one of four centers set up in the room.	The children moved among six areas per day.
Room environment	Contained room with minimal visual and auditory stimulation. Small and contained areas except for the playground.	Open areas with constant visual and auditory stimulation
Student/ teacher ratio	1 teacher and 2 facilitators for a group of 6 children	1 facilitator for 2 children. There are two occupational therapists in the Sensory room daily.
Length of day	8:30 –3:00 pm	8:30 – 11:30 a.m.
Interaction from the outside	Interruptions form other teachers and administrators daily from a consistent staff	Four of the six areas are open to the general public beginning at 10:00 a.m.

Classroom Transitions- Strict Inclusion

Included Terms	Semantic Relationship	Cover Term
Routinely done at the end of each session	Is a way to	Make a transition
Completed as a part of the group expectation		
Picture chart		
Singing		

Camp Transitions - Strict Inclusion

Included Terms	Semantic Relationship	Cover Term
Distracting child	Is a way to	Allow child to make the transition
Showing pictures of the next place		
Picking up the child		
Hold the child's hand		

Camp Adult Behavior toward Children – Strict Inclusion

Included Terms	Semantic Relationship	Cover Term
Moving child from place to place	Is a kind of	Adult behavior
Engaging children with each other		
Signing		
Asking questions		
Engaging child with activity		
Modeling activities and the use of exhibits		
Using the child's hand to model		
Providing physical barriers to contain the child		

Classroom Adult Behavior toward children – Strict Inclusion

Included Term	Semantic Relationship	Cover Term
Holding the child's hand	Is a type of	Adult activity
Signing		
Asking questions		
Engaging the child in an activity		
Modeling activities		
Holding the child's hand to model		
Blocking a child's escape path		

Appendix C: Museum Mission

CREATIVE DISCOVERY MUSEUM

MISSION STATEMENT

- Stimulate the creative spirit and natural curiosity of every child
- Create an excitement for learning through interactive exploration of the arts and sciences
- Foster innovation and excellence as an educational resource
- Support the cultural and economic vitality of the Chattanooga region

Appendix D: Research Agreements

Research Agreement

The following constitutes an agreement to conduct research regarding the nature of camps for children with autism.
Researcher Jayne Griffin

Dates of data collection July – September 2002

Data collection

- Observation of up to four children enrolled in the Sensory Camp held at Creative Discovery Museum (CDM) who are also enrolled in the Siskin Children's Institute. This data collection will take place for the two-week duration of the camp.
- Observation of the same children in the classroom setting at Siskin Children's Institute (SCI) for a period of seven days (two hours per day). This data collection will take place at a time convenient for the teachers at SCI beginning after the opening of school in August and concluding by the end of September, 2002.
- Focus group interview of the parents of all of the children attending the Sensory Camp. This interview will take place on June 24 and will be audiotaped.
- Examination of the curriculum plans used in the Sensory Camp and those used in the SCI settings.
- Examination of the educational records of the participants involved in the observation phase of the research.

All data collection will be completed by the researcher and a paid research assistant.

The researcher will obtain permission to observe the children and review their educational records from the parents/legal guardians of the children through a written consent form (see attached).

It is anticipated that all data will be analyzed by the end of October 2002 and a copy of the results of this data analysis will be provided to CDM and SCI.

Results of the study
The data and the analysis of the data will be published as a dissertation completed at the University of Tennessee at Knoxville. All raw field notes will be kept by the researcher for a period of five years.

A copy of this agreement has been provided to this institution and agreement has been made to its stipulations.

Debbie Matthews, Director Siskin Children's Institute

SISKIN Children's INSTITUTE

May 24, 2002

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To Whom It May Concern:

This letter gives permission to Jayne Griffin to use the Siskin Children's Institute as a research site for the study of children with autism conducted between the months of July and September 2002. Siskin Children's Institute understands the following details of this study:

- The study and its results will be published in the researcher's dissertation proposal.
- The questions addressed in the study include the nature of camps for children with autism.
- Four children who attend the Siskin Children's Institute will be the focus of the study.
- Data collection will involve:
  - Observation of selected children during the Sensory Camp held at Creative Discovery Museum (Permission from the parents of the children will be obtained by the researcher before the observations and record reviews begin).
  - Interviews of the parents whose children are attending the Sensory Camp during the parent orientation session for the camp.
  - Observation of the selected children in the classroom setting at Siskin Children's Institute beginning in August and ending in September of 2002.
  - Examination of the curriculum documents used by Siskin Children's Institute during the time the children are observed.
  - Review children's educational records.

During the time of the study the researcher will have full access to Siskin Children's Institute and all information related to this study and not otherwise protected by data privacy regulations. The researcher will follow all research policy outlined by the Siskin Children's Institute policy and procedures.

Sincerely,

SISKIN CHILDREN'S INSTITUTE

Debbie Matthews

Debbie Matthews
Director of Programs

DM/jlb

CREATIVE
DISCOVERY
MUSEUM

May 24, 2002

To Whom It May Concern:

This letter gives permission to Jayne Griffin to use the Creative Discovery Museum as a research site for the study of children with autism during the month of June through September. Creative Discovery Museum understands the following details of this study.

- The study and its results will be published in the researcher's dissertation proposal.
- The questions addressed in the study include the nature of camps for children with autism.
- Four children who attend both the Sensory Camp held at the Creative Discovery Museum and Siskin Children's Institute will be the focus of the study.
- Data collection will involve:

- observation of selected children during the Sensory Camp held at Creative Discovery Museum. (Permission from the parents of the children will be obtained by the researcher before the observations begin.)
- interviews of the parents whose children are attending the Sensory Camp during the parent orientation session for the camp.
- observation of the selected children in the classroom setting at Siskin Children's Institute beginning in August and ending in September of 2002
- examination of the curriculum documents used by Siskin Children's Institute during the time the children are observed.

The Creative Discovery Museum strongly supports this project. The results of the study will help the Museum in the development of future programs for children with autism and will also benefit other children's museums who are developing programs for children with special needs.

Sincerely,

Henry H. Schulson
Executive Director

VITA

Jayne O'Neal Griffin was born and raised in the Chattanooga area. She attended Middle Tennessee State University and received a Bachelor of Science degree with a major in Elementary Education in 1974, from the University of Tennessee at Chattanooga. She taught grades 3 through 8 for twenty years in schools in the Walker County (North Georgia) school district, where she was a mentor teacher, and named Teacher of the Year in 1990. She received a Masters of Education degree with a major in Administration and Supervision in 1999, from the University of Tennessee at Chattanooga. Currently she is pursuing a Doctor of Education degree from the University of Tennessee at Knoxville. Her anticipated date of graduation is December of 2003. Since 1997, she has held the position of Director of Education at Creative Discovery Museum, which has given her the opportunity to administer and lead many educational programs for teachers, children, and parents.

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