The Effects of Animal-Assisted Activities on the Social and Emotional Development of Young Children with Characteristics of Emotional Behavioral Disorders

THESIS

Presented in Partial fulfillment of the Requirements for
the Master of Education in Environmental Education in the
College of Education and Human Service Professions

By
Elaine K. Schmid, B.S.

*****

University of Minnesota Duluth
2011

Thesis Committee:

Ken Gilbertson, Ph.D., Chair [redacted]

Trudic Hughes, Ph.D. [redacted]

Molly Minkkinen, Ph.D.

Abstract

As emotional behavioral disorders become more prevalent throughout the school-age population, intervention during the early childhood ages is becoming key. Considering that social emotional delays are risk factors for emotional behavioral disorders and the evidence of social-emotional health in the early years leading to emotional well-being in adolescent and adult years, there is a significant need for social and emotional health in early childhood. Animal-assisted activities are ways to teach concepts such as self-awareness, self-regulation, social engagement, emotional understanding, and empathy to children in primary school. In this case study, four 6 and 7 year old children participated in animal-assisted activities with domestic farm animals. Child self-reports (Bryant Index of Empathy), parent-reports (Griffeth Empathy Measure), and behavioral observations (Preschool and Kindergarten Behavior Scales) were all used to measure the change in empathy, social interaction, and social cooperation over the five sessions. Over the course of five one-hour sessions with farm animals, children showed an increase in empathy, social interaction, and social cooperation. This case study demonstrates the impact that animal-assisted activities can have on young children. Future research should investigate the impact of animal-assisted activities on larger, more diverse groups of young children.

Acknowledgments

I owe so much appreciation and gratitude to so many people who helped me throughout this process. A very special thanks goes out to my committee members— Dr. Ken Gilbertson, Dr. Trudie Hughes, and Dr. Molly Minkinnen— for their support throughout this process of learning. Your encouragement and answers to questions that never ended is astounding. Thank you for being dedicated professionals!

I extend my thanks to the instructors at UMD who have helped me along the way— Kevin Zak, Tim Bates, Julie Ernst, Gerry Nierengarten, and Julie Slowiak. I am so grateful for what Julie Slowiak taught me about research design and SPSS.

Many, many thanks to Anne Macaulay and Danny Frank at Woodland Hills for their enthusiasm about my project. Also thanks to Tim Caines and Mikaela at the Lincoln Park Boys and Girls Club for their involvement in the project.

Thank you to my cohort of EE graduate students. My, what we have learned in the past two years! Thanks for lending me your empathetic minds during this time.

And finally, a heartfelt, continued thank you, thank you, thank you to my wonderful friends and family. You have always been there to listen and guide during the difficult moments along this journey, and better yet, to celebrate the joyous moments! A special thank you to my husband Erik, for offering support, first from afar, and then from near, during this period of my life.

Dedication

This thesis is dedicated to the children at the Lincoln Park Boys and Girls Club and Woodland Hills. May your lives always be full of joy and wonder.

Table of Contents

List of Tables

Chapter One

Introduction

"When asked to name the 10 most important individuals in their lives, 7- and 10-year-olds included, on average, two pets."
-Melson, 2003

Background and Setting

Animal-assisted activities are conducted in a variety of settings, with a wide range of populations, and for countless purposes. However, an overall, general theme among the purposes is to use animals to enhance quality of life (Morrison, 2007). One aspect of quality of life that animals have been used to enhance over the years is the emotional well-being of an individual (Macauley, 2006). This may be accomplished by giving a young child the opportunity to go horseback riding, care for domestic animals, or rehabilitate wildlife. All of these examples are animal-assisted activities that, if carried out effectively, could enhance the emotional well-being of an individual. Emotional well-being needs to begin at a young age, and as a child is developing, professionals gauge progress in emotional well-being by how the child is developing socially and emotionally (Landy, 2009).

Social and emotional development is an important component to child development, particularly in the early years, birth to age 8. Social and emotional development in young children includes how young children feel about themselves, how they behave, and how they relate to people close to them, such as caregivers, teachers, and peers. There is strong evidence linking social-emotional health in the early childhood years to school success and health in preteen and teen years, and to long-term health and wellbeing in adulthood (Cooper, Davidson, Higgins, & Isakson, 2009). Some

components of social and emotional development include self-awareness, self-regulation, social engagement, emotional understanding, and empathy (Cooper et al., 2009). When one or more of these components are lacking, children may have difficulty interacting and communicating with their peers. Children with delayed social and emotional development may also have or be at risk for emotional behavioral disorders (Cohen & Strayer, 1996).

Emotional behavioral disorders are prevalent in approximately 3 to 6 percent of school-age children (Kauffman & Landrum, 2009). Children with emotional behavioral disorders demonstrate behaviors that are chronic, extreme, and socially unacceptable (Hallahan, Kauffman, & Pullen, 2009). Many of these children simply lack the social skills to connect with peers and form relationships and therefore act out in inappropriate ways in order to be noticed. Early intervention can be helpful in bringing an end to the undesirable behaviors and teaching children essential social skills to help them succeed later in life.

Considering that social-emotional delays are risk factors for emotional behavioral disorders and the evidence of social-emotional health in the early years leading to emotional well-being in adolescent and adult years, there is a significant need for social and emotional health in early childhood. Animal-assisted activities are ways to teach concepts such as self-awareness, self-regulation, social engagement, emotional understanding, and empathy to children in primary school (Delta Society, 2007). Children at this age are especially drawn to animals. Also, children who lack stable relationships with people have difficulty trusting another person who offers assistance. An animal can provide a non-judgmental living being that will give the child the attention he or she

deserves (Parish-Plass, 2008; Prothmann, Bienert, & Ettrich, 2006). Therefore, incorporating animals into the everyday lives of children, whether it is in a school setting, therapy setting, or non-formal education setting, is thought to be beneficial.

General classroom teachers, special education teachers, non-formal educators, psychologists, and other professionals encounter young children with emotional behavioral disorders on a daily basis. Animal-assisted activities may or may not be an instructional method available to these professionals. Those professionals currently using animal-assisted activities while assisting this population will find this study useful due to the recommendations offered for animal-assisted programs. Professionals who are considering incorporating animal-assisted activities into the work they do will find valuable information on how animal-assisted activities can impact the social and emotional development of primary school youth with emotional behavioral disorders.

Research Question

How do animal-assisted activities affect the social and emotional development of 6- and 7-year-old children with emotional behavioral disorders?

Objectives

1. To describe and quantify how animal-assisted activities affect the development of empathy in 6-year-olds with emotional behavioral disorders.

2. To offer recommendations to individuals and organizations utilizing animal-assisted activities. These recommendations are intended to enhance the way animal-assisted activities are structured, delivered, and evaluated.

Definitions of Terms

Animal-Assisted Activities (AAA)

Constitutive- Animal-assisted activities provide opportunities for motivational, educational, recreational, and/or therapeutic benefits to enhance quality of life. AAA are delivered in a variety of environments by specially trained professionals, paraprofessionals, and/or volunteers, in association with animals that meet specific criteria. (Standards of Practice for Animal-Assisted Activities and Therapy- Delta Society)

Operational- Animal-assisted activities are direct contact experiences with domestic farm animals that provide opportunities for social and emotional benefits. AAA are delivered in a farm environment in association with animals that are accustomed to young children.

Social and Emotional Development

Constitutive- Social-emotional development involves the ability to form close, secure relationships and to experience, regulate, and express emotions. Social-emotional growth is affected by a variety of factors, such as an individual's unique biology and temperament, as well as life experiences. "Social" refers to how individuals interact with others. "Emotional" refers to how individuals feel about themselves, others, and the world. (The University of Maine Center for Community Inclusion and Disability Studies)

Operational- the ability to recognize and respond to the emotions of others; "sharing" emotion (empathy)

Emotional Behavioral Disorders

Constitutive- In accordance with the Individuals with Disabilities Education Act (IDEA) of 2004, a child with an emotional behavioral disorder is categorized under the term emotional disturbance.

(i) Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:

(A) An inability to learn that cannot be explained by intellectual, sensory, or health factors.

(B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

(C) Inappropriate types of behavior or feelings under normal circumstances.

(D) A general pervasive mood of unhappiness or depression.

(E) A tendency to develop physical symptoms or fears associated with personal or school problems.

(ii) Emotional disturbance includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance under paragraph (c)(4)(i) of this section (U.S. Department of Education, 2005).

This study considers the following terms to be synonyms for emotional behavioral disorder: emotionally handicapped, emotionally impaired, behaviorally impaired, socially/emotionally handicapped, emotionally conflicted, emotionally

disturbed, and seriously behaviorally disabled (Hallahan, Kauffman, & Pullen, 2009).

Operational- Children who have characteristics of emotional behavioral disorders exhibit one or more of the following characteristics over a period of 1 month at their after school program site:

(A) An inability to learn that cannot be explained by intellectual, sensory, or health factors.

(B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

(C) Inappropriate types of behavior or feelings under normal circumstances.

(D) A general pervasive mood of unhappiness or depression.

(E) A tendency to develop physical symptoms or fears associated with personal or school problems.

Limitations of the Study

- The results of animal-assisted activities are limited to the animals used in this study. The results apply to small domestic farm animals such as goats and sheep. Results cannot be generalized to include larger domestic farm animals such as cattle and horses or companion animals such dogs and cats.
- Consequently, the results are limited to the conditions specific to the study site.
- The results cannot be generalized to other ages or disabilities of children.

Basic Assumptions

- Animal-assisted activities are an accepted practice for enhancing emotional well-being in young children.
- Animal-assisted activities can be an effective means of outdoor education.

Chapter Two

Review of Literature

The purpose of this chapter is to provide a foundation for this study by reviewing literature that is relevant to the research question and objectives. The areas of literature reviewed are animal-assisted therapy, animal-assisted activities, social and emotional development of 6-year-olds, emotional behavioral disorders, and the relationship between animal-assisted activities and outdoor education. The literature discussed justifies the need for a study on the effects of animal-assisted activities on the social and emotional development of 6-year-olds with emotional behavioral disorders.

Animal-Assisted Activities and Animal-Assisted Therapy

Animal-assisted activities and animal-assisted therapy (AAA and AAT) are closely linked and vary only slightly by definition. In practice, AAA and AAT look similar and are difficult to distinguish. The Delta Society defines AAA as opportunities for motivational, educational, and/or recreational benefits to enhance quality of life. The activities are delivered in a variety of environments by trained individuals with animals that meet specific criteria. On the other hand, AAT is a goal directed intervention in which an animal meeting a specific criterion is an integral part of the treatment process conducted by a health or human service professional. Animal-assisted therapy is designed to promote improvement in human physical, social, emotional, and/or cognitive functioning. The process is documented and evaluated. (Delta Society, 1996).

The Delta Society provides concrete examples of AAA and AAT to distinguish between the two concepts. The following is an example of AAA from the Delta Society:

–An individual brings her dog to a children's long-term care facility to "play" with residents. Although the staff is involved in the visits, the staff has not set treatment goals for the interactions. Aside from signing in and out, no records are kept."

Comparatively, the following is an example of AAT: –A child psychologist is working with a child who has been sexually abused by her father, making her very fearful of men. The psychologist is working on this fear with the child, in conjunction with her therapy dog. The psychologist uses storytelling from the dog's point of view once the child has established a bond with the dog. The child watches how the dog interacts around men that she would normally be afraid of. The psychologist records the child's progress weekly."

In the present study, an overall goal for all participants is to improve social and emotional development; each participant will not have specific treatment goals. Thus, AAA is the term that best describes the treatment. For purposes of this literature review, literature regarding both animal-assisted activities and therapy will be discussed because they are so closely linked in theory and practice.

History and background.

The history of human-animal relationships dates back to ancient times. The Egyptians, Native American tribes, and other cultures early in human history had very spiritual, religious relationships with animals. Some animals were believed to have healing powers and were highly regarded while others were considered pests (Levinson & Mallon, 1997). Then, beginning in the 18th century, animals were thought of as –socializing agents." In 1699, John Locke advocated that children should be given –dogs,

squirrels, birds, or any such thing" to promote the development of ~~t~~ender feelings and responsibility" (Fine, 2006, p. 12).

Late in the 18th century animals became part of treatment programs for the mentally ill. The York Retreat in England was one exceptional program that allowed residents to interact with the animals (rabbits, birds, etc) in the gardens and courtyard. This trend continued through the 19th century. Early in the 20th century, animal-assisted interventions in institutions were rarely happening due to the advances in more scientific medicines (Fine, 2006).

A child psychologist, Boris Levinson, was first credited with bringing AAT into clinical psychology (Macauley, 2006). Levinson discovered the use of pets in psychotherapy by accident one day when his dog was in his office with him at work. A young, distraught boy and his mother arrived for their first appointment, and the connection between the child and dog was instant. In 1961, Levinson presented ~~"~~Pets in Child Psychotherapy" at the annual convention of the American Psychological Association and received mixed reactions. Many were enthusiastic and reported similar experiences, but many also laughed and mocked the idea. In the end, the general reaction to the use of pets in therapy was that they were ~~"~~useful but not crucial factors in treatment" (Levinson & Mallon, 1997). Since the mid-1980s, animals have once again become more accepted in the medical and psychological treatment of humans. Social support seems to be the main reason for including animals in treatment.

Theory.

Animal-assisted therapy and activities are not grounded in an established theory, but several authors have proposed theories or hypotheses on the underlying mechanism of

using animals in therapy. The theories that support the findings that animals increase psychological and physiological health in human are the biophilia hypothesis, social support/attachment theory, and cognitive distraction and redirection.

The biophilia hypothesis, constructed by sociobioligist E.O. Wilson, stems from an evolutionary perspective. Years ago humans had a better chance to survive if they were very aware of their environment and where animals were (Beck & Katcher, 2003). The biophilic method of intervention, which is based on a holistic approach through the interaction with animals in nature, and the stimulation of the nervous system through the senses, has the potential to bring alternative clinical strategies to the treatment of emotional disorders (Antonioli & Reveley, 2005).

The theory of social support states that humans are healthier when they have social companions. This can come from close friends, community members, and animals, among other sources (Beck & Katcher, 2003). Some animals provide, for some people, a form of stress-reducing or stress-buffering social support. (Gee, Harris, & Johnson, 2007; Morrison, 2007). Also consistent with attachment theory, animals can play the role of an attachment figure, or, more commonly, a transitional object (Fine, 2006). Odendaal also suggests that part of social support for humans is the need for attention within and between species. Everyone has a need for attention, and those populations that are underserved have an even greater need for attention, thus pointing to the success of AAA/T (Odendaal, 2000). For many children, companion animals are likely to be powerful motivators for learning, because children's learning is optimized when it occurs within meaningful relationships (Melson, 2003; Richeson, 2003).

Another proposal is that AAA/T works by the mechanism of cognitive distraction and redirection (Morrison, 2007; Sobo, Eng, & Kassity-Krich, 2006). Dogs may distract children from painful thoughts, and the dog's presence may lead children to engage or activate cognitive schemas regarding home and pet companionship. Thought and affect are closely linked in these schemas and can be mobilized instantaneously with the relevant stimuli. Thus, activating thoughts regarding pet companions can bring about positive emotions in children who like dogs (Sobo et al., 2006).

In Nimer and Lundahl's 2007 meta-analysis of AAT, considerable evidence was found that supports the practice of AAT although there was an overall lack of universal understanding of theory and definition in the field. Consequently, one key recommendation was for more research in the AAT/AAA field regarding theory development (Nimer & Lundahl, 2007).

Benefits.

The benefits associated with AAT and AAA have been studied in elderly populations, adults, and children. Benefits generally fall into two categories—medical or behavioral/emotional. In a meta-analysis of AAT, moderately strong findings were found across all outcome levels— medical well-being, behavioral outcomes, and reduction of Autism Spectrum Disorders symptoms— when animal assisted therapy was part of the treatment process. AAT is as effective or more effective than other treatments (Nimer & Lundahl, 2007).

Several studies have shown physiological support for involving animals in psychological treatment. Friedmann and colleagues found that while performing a mildly stressful task, children's blood pressure and heart rate are significantly reduced in the

presence of a dog (Friedmann, Katcher, Thomas, Lynch, & Messent, 1983). Odendaal brought additional physiological evidence to support animal-assisted therapy and activities in a 2000 study. Following positive human-dog interactions, beta-endorphin, oxytocin, prolactin, phenylacetic acid, and dopamine increased significantly in humans. Cortisol levels and blood pressure decreased significantly in humans. All of these responses occurred between five and 24 minutes of positive dog interaction. This physiological information can be used as rationale for animal-assisted therapy and activities (Odendaal, 2000).

Elderly populations, especially those living in long-term residential care, are susceptible to psychological stress due to the many changes happening in their lives and their declining physical health. AAT and AAA in these populations can be especially helpful in improving their psychological state. Weekly AAT sessions with elderly populations helped reduce loneliness in the residents. Residents were also able to recall stories about their own past pets (Banks & Banks, 2002). Animal-assisted activities can decrease depression in elderly residents in long-term care. Although AAA were not found to have any positive influence on anxiety levels, this could be due to the small sample size (Le Roux & Kemp, 2009).

Richeson found that an animal-assisted therapy intervention for elderly people with dementia can reduce agitated behaviors and increase social interaction. Residents were more alert and responsive when the dogs were present or even the day before the dogs came, when staff engaged them in conversation (Richeson, 2003).

A group of institutionalized elders were involved in AAT, plant therapy, and traditional treatment. Those involved in AAT felt more capable of carrying on an

autonomous social relationship with others. Quality of life and mood were also improved after AAT (Colombo, Dello Buono, Smania, Raviola, & De Leo, 2006).

Animal-assisted therapy and activities are used in conjunction with traditional psychotherapy for adults who are suffering mental illness. Depression, drug dependence, and incarceration are some conditions that have been studied among adults. One study examining the effects of AAT on adults with aphasia, acquired language disorder, is also discussed.

Animal facilitated therapy with dolphins reduced depressive symptoms in adult patients with mild to moderate depression. Depressive symptoms improved after two weeks of treatment with no side effects noted, compared to the four weeks it takes to notice improvement in typical psychotherapy (Antonioli & Reveley, 2005). In Souter and Miller's meta-analysis, four out of the five studies reported significant reduction in depression in adults ages 47-85 years between pre and post tests for animal-assisted interventions (Interventions include AAA and AAT.). Studies point to AAA/T being effective at treating depression in adults (Souter & Miller, 2007).

Depressive symptoms were present in some of the sixty adult psychiatric patients included in the treatment portion of a study which included working at a farm with domestic farm animals for 12 weeks, three hours twice a week (Berget, Ekeberg, & Braastad, 2008). After the six-month follow-up period, patients in the treatment group showed significant increases in self-efficacy and coping skills. Patients with the most increased coping skills reported enjoying physical contact with the animals more than other chores. No effect on quality of life among patients in the treatment group was found (Berget et al., 2008).

Animal-assisted therapy influences the counselor and client relationship positively with group participants who are addicted to drugs. Groups that experience AAT appear more attached to the counseling process, place a higher value on the experience, and exhibit less stress during the process (Minatrea & Wesley, 2008). Including a dog in therapy sessions for adults in a residential treatment center undergoing treatment for substance dependence enhances the therapy process. This in turn can lead to higher retention rates and less frequent drug and alcohol relapses (Wesley, Minatrea, & Watson, 2009). In addition to assisting adults in residential treatment, adults in the prison system also see benefits from AAT and AAA.

Prisons around the United States use animal training programs to reduce the recidivism rate of prisoners. Programs around the country use mainly dog and horse training to teach prisoners valuable animal care and training techniques, which they can take with them into the workforce when they leave prison. Emotional needs of the prisoners are also met when they have an animal to care for (Strimple, 2003).

Animals are not only used in psychological treatment, but also in speech and language therapies. In Macauley's 2006 study, participants with aphasia completed 12 weeks of both traditional speech-language therapy and AAT, and reported that they were less stressed, more motivated, and enjoyed therapy more during the AAT sessions even though the progress between AAT and traditional sessions was equal (Macauley, 2006). Participants demonstrated more emotion during the AAT sessions, talking about their pets/loss of pets. An unexpected benefit was that AAT increased the amount of spontaneous conversations (Macauley, 2006). The therapy dog may act like a motivator

for people with speech disorders and may bring about more conversation, directed to the dog (Macauley, 2006).

Animal-assisted therapy and activities have been useful for the elderly population as well as adults in reducing depression, agitation, and loneliness, and in supporting traditional psychotherapy sessions. Animal-assisted therapy and activities also help children cope with trauma, mental illness, hospitalization, and learning disabilities, among other things. Children seem to perceive animals (especially therapy dogs) as non-judgmental, interactive beings that are unrelated to the complications of the human world (Friesen, 2010).

When children were asked the question, "Make believe a child in the hospital can make three wishes. What do you think the three wishes would be?", the most common answers included: being with pets, being able to go home, or not being sick (Kaminski, Pellino, & Wish, 2002).

Canine visitation therapy for children experiencing acute postoperative pain seems to be a good pain management technique, reducing physical and emotional pain in the children (Sobo et al., 2006). Seventy children with chronic diseases (cancer, organ transplants, diabetes, etc) were included in an AAA study. Parent and child moods and physiological states (salivary cortisol levels, heart rate) were assessed before and after the therapies (Kaminski et al., 2002). Parents and children viewed both therapies as beneficial. Pre-therapy heart rates for the children in the pet therapy group were higher, thus suggested that these children experienced excitement and anticipation for seeing the dogs (Kaminski et al., 2002). Patients in the pet-therapy group had more touch/closeness

with the animals than children in play therapy had with other staff and children. Physical touch is a physical need for humans (Kaminski et al., 2002).

Just as AAT and AAA can be used in a hospital setting to reduce physical and emotional pain following operations, they are also seen as beneficial tools in speech and language therapy.

Hippotherapy, a physical, occupational, and speech therapy treatment that utilizes the multidimensional movement of a horse, improved the motivation of children with language-learning disabilities to attend and actively participate in therapy. Improvements in the child's speech and language abilities were also not compromised. In this study, each child demonstrated improvements in his speech and language abilities and progressed toward therapy goals (Macauley & Gutierrez, 2004). Parents also reported that their children made greater improvements in speech and language abilities, motivation, and self-concept following hippotherapy when compared to results from traditional therapy (Macauley & Gutierrez, 2004). Due to the strong connection between motor skills and language development, therapy dogs used in programs for speech and language development for preschool children may be beneficial (Gee, Harris, & Johnson, 2007).

Children ages 5-8 years old with severe disabilities such as autism and Down syndrome and their families were enrolled in a dolphin-assisted therapy program for five days. Children's communicative abilities and social-emotional behaviors improved and remained stable for six months after they participated in dolphin-assisted therapy. Parent-child interactions also improved over the course of the therapy sessions (Breitenbach, Stumpf, Fersen, & Ebert, 2009).

In another study that involved a guinea pig as the therapeutic animal, children ages 7-13 years with autism demonstrated more social behaviors between their acquaintances as well as the guinea pig. Visual, tactile, and verbal social contacts were observed. No children preferred verbal contact, but eye contact and stroking/touching were common among the children (Krskova, Talarovicova, & Olexova, 2010). Finally, a study utilizing a dog during AAA with children with Down syndrome, replicated the results shown in the dolphin-assisted therapy and guinea pig therapy studies (Limond, Bradshaw, & Cormack, 1997).

In a study that assessed the social effects of the presence of a dog on three 5-9 year old children with developmental disabilities, the dog's presence increased positive initiated interactions between the students and teacher. When a student had previously shown a high rate of negative interactions with the teacher, those decreased over the course of the treatment (Walters-Esteves & Stokes, 2008). It may be beneficial for students with developmental disabilities to have a dog as an "assistant" to school counselors, speech and physical therapists, and other professionals they visit. Children may be more apt to participate in activities when a dog is present. Social skills, motor skills, and communication skills may increase and be beneficial for treatment (Walters-Esteves & Stokes, 2008). AAT research has shown that interactions with a therapy dog can increase social risk-taking behaviors to engage in the classroom environment, especially for those who are more reluctant to (Friesen, 2010).

In the presence of a real dog, children with pervasive developmental disorders were more focused on the session and had a higher level of energy. They offered treats to the dog and had more conversations than sessions involving the ball or stuffed dog

(Martin & Farnum, 2002). Children were also more inclined to agree to requests made by the therapists during sessions and not ignore questions. The study shows that AAT may be an effective therapy for children with pervasive developmental disorders (Martin & Farnum, 2002).

Psychological disorders are becoming increasingly common in young children, and AAT and AAA play a role, along with traditional therapies, in alleviating some of the emotional pain children experience (Sobo, Eng, & Kassity-Krich, 2006). Adolescent patients from a psychiatric hospital with acute or chronic mental health problems such as depression, conduct disorder, and post-traumatic stress disorder were involved in AAT with a therapy dog that lived at the hospital. The dog re-created the environment by redefining reality and by making the hospital more like home, friendly, safe, and calm. Overall the presence of a dog had a positive effect on the hospitalized teenagers (Bardill & Hutchinson, 1997).

Ten 13 year olds with severe emotional disturbances and/or mental disabilities in a special education day school participated in a program called "Horse Power". During Horse Power students came to a ranch to participate in grooming, feeding, and riding a horse they were individually teamed with for nine weeks. Feelings of loneliness, self-esteem, and level of empathy were measured before and after the students participated in the program. No significant changes were found. This could be due to the length of the program and the severity of the students' disabilities. A longer program may be necessary to achieve the desired results (Ewing, MacDonald, Taylor, & Bowers, 2007).

Emotionally disturbed youth, ages 11 and 12, were involved in AAT sessions from January-May for one hour each week, in their school setting. Following therapy, the

youth demonstrated improved relationships with peers, more eye contact with others, and appropriate tone of voice (Kogan, Granger, Fitchett, Helmer, & Young, 1999).

In a study of normally developing, preschool and elementary school youth, Triebenbacher found that companion animals, especially dogs, can play a role similar to that of an inanimate transitional object in a child's life. Attachment behaviors such as expression of affection, thinking about the object, and proximity-seeking were seen between the child and his or her pet. Children reported their companion animals to be special family members, friends, and providers of social support and affection (Triebenbacher, 1998). The fact that animals can play an attachment role in a child's life could be extremely valuable to children who have experienced trauma and who may not have a significant attachment figure in their lives.

Animal-assisted therapy can be especially beneficial for abused and neglected children suffering from insecure attachment and the effects of trauma. The presence of an animal provides a calming and less threatening atmosphere for therapy, which allows the child to work through traumatic issues. The relationship between the therapist and the animal makes the therapist seem less threatening and trustworthier in the eyes of the child who experiences difficulties trusting adults. This makes the initial child–therapist relationship more easily established than in other, traditional therapies (Parish-Plass, 2008; Prothmann, Bienert, & Ettrich, 2006).

In a study of children and adolescents in a psychiatric hospital, AAT promoted the psychological well-being of the patients by opening social contact opportunities and increasing the attention and alertness of the child. The worse the child felt before therapy, the greater the effect of AAT was on the child. For example, children who were new to

the therapy setting often felt much more anxious and scared, and therefore benefitted more from the warmth and security brought about by the animal (Prothmann et al., 2006).

A study conducted at Green Chimneys Children's Services (a residential treatment center for children with social, emotional, and learning disabilities) investigated the impact of having a dog live in the children's dorms. This exploratory study came up with several benefits after interviewing and giving questionnaires to staff and students (Mallon, 1994). Companionship, affection, attachment, and touch are all human needs that children in residential care do not always receive. The study found that having a dog in the dorms met some of these needs for the children. Children also received acceptance, non-judgmental love, a confidant, and therapeutic relationship from the dogs (Mallon, 1994).

Another study conducted by Mallon at Green Chimneys examined the role of farm animals at a residential treatment center. Green Chimneys has a farm that children can have informal interactions with around the clock. Mallon found that farm animals can provide some of the same benefits that companion animals provide: companionship, affection, and an outlet for physical touch and nurturance. Children often went to the farm when they were angry, upset, or sad because they felt happier and more secure around the animals (Mallon, 1994).

In a self-contained classroom of six children with severe emotional disorders, having a dog as part of the class was found to be very beneficial for the elementary students. Positive emotional effects were seen in all the children, and the number of emotional crises significantly decreased in the presence of the dog. Part of this success is contributed to the personal relationship each child formed with the dog. When the dog

was in the classroom, lessons of respect, responsibility, and empathy were easily facilitated. Children understood and connected their own feelings and needs to those of the dog (Anderson & Olson, 2006).

If, as Robert Weiss suggests, the opportunity to nurture others is a basic human need, even in childhood, pets may play an irreplaceable role in providing this need for young children (Melson, 2003). Ascione (1992) reports that an elementary school classroom intervention designed to teach more appropriate, humane forms of nurturing resulted in greater empathy toward other children as well as more humane attitudes toward animals. Similarly, 7- and 10-year-olds who reported more "intimate talks" with pets also exhibited higher levels of empathy, and 5- and 6-year-olds who were more attached to their pets expressed greater empathy toward their peers (Melson, 2003). Empathy, or the ability to understand and share the feelings of another, is a necessary condition for nurturance. Therefore, these findings should encourage further inquiry into links between nurturing pets and human relationships (Melson, 2003).

The research on AAT and children point to numerous benefits for disadvantaged children. Some of these benefits include decreased perception of pain and loneliness, and increased speech and language abilities, social skills, self-esteem, and empathy. Animals also provided physical touch, companionship, and unconditional acceptance to children with emotional disturbances.

Many of the areas that AAT brought about improvements in— social skills, self-esteem, empathy, and companionship— are all parts of the social and emotional development of young children.

Limitations.

Despite all the benefits of including animals in therapy or educational settings, limitations to animal-assisted therapy and activities do exist. Animal characteristics, past history of clients, and health risks are some of these limitations.

Although most animals that are utilized in AAA and AAT have gone through extensive training to ensure that they are suitable for the work they are doing, they are still animals and can act unpredictably at times. Handlers must be very aware of stress signals from animals and know when a session has reached its time limit for the animal. Finding professionals who have strengths in animal behavior as well as their human service profession can be difficult. To avoid this dilemma, visiting animal teams (includes the animal and handler) often work with a human service professional, so that there is an expert for the client as well as for the animal (Delta Society, 2007).

In Mallon's 1994 study on dogs in residential treatment centers for children with behavioral disorders, having a dog in the dorms brought up concerns of animal abuse and cleanliness (Mallon, 1994). Animal abuse is a precaution to AAA and AAT. Clients with a history of animal abuse should be carefully evaluated to determine if there is a real benefit for the client as well as no danger to the animal (Delta Society, 2007).

Cleanliness is also a legitimate concern when doing AAA and AAT, especially with immuno-compromised clients. Risk of disease transmission will never be completely eliminated, but by having clients follow proper hand-washing guidelines before and after visits and ensuring that the animal is groomed and well-kept eliminates the majority of the concerns (Delta Society, 2007).

Another health consideration is allergies. Before utilizing an animal all students or clients should be asked if allergies exist. Being allergic to an animal does not always eliminate the possibility of doing AAA and AAT, but accommodations need to be made according to the severity of the allergies (Delta Society, 2007).

Finally, a client with animal fears or phobias is a precaution to AAA and AAT. The goal of AAA and AAT is generally not to resolve fears and phobias of animals, and so professionals must be certain to discuss the fear and phobia with the client before implementing AAA and AAT (Delta Society, 2007).

When implementing AAA and AAT, professionals must be aware of the animal they are working with, the client's history, and the health risks that are involved with AAA and AAT. These therapies and activities can be very safe and beneficial to all when the necessary precautions are taken.

Social and Emotional Development of Young Children

Children in the early primary grades are developing in many domains: cognitive, language and literacy, social, emotional, and physical development. While there are examples of how animal-assisted therapy and activities can affect each of these areas of development, the area that there is a natural connection with is social and emotional development. Social and emotional development in young children includes how young children feel about themselves, how they behave, and how they relate to people close to them, such as caregivers, teachers, and peers. Some components of social and emotional development include self-awareness, self-regulation, social engagement, emotional understanding, and empathy (Cooper et al., 2009). Literature in this section will explore the theories, the components, and how social and emotional development is measured.

Theory.

Psychoanalytical, cognitive, behavioral, and attachment theories attempt to explain how children develop socially and emotionally. Freud's psychosexual theory, Erik Erikson's psychosocial theory of emotional development, Piaget's theory of cognitive development, Vygotsky's sociocultural theory, multiple behavioral theories, contemporary brain development theory, and Bowlby's attachment theory have shaped the way that parents, teachers, and other professionals understand child development.

Sigmund Freud's psychosexual theory and Erik Erikson's psychosocial theory are two theories in the category of psychoanalytical theory that attempt to explain child development (Shaffer, 2005). Freud's theory is based on the idea that human beings are driven by biological urges that must be satisfied. Freud felt that the most significant urge was the sexual urge and that all behaviors were centered on the need for sexual satisfaction (Freud, 1949). Despite the controversial basis for his theory, Freud contributed several important constructs to child development. The concept of unconscious motivation had not been explored before and added another dimension to human psychology. Also, according to Freud, early experiences are critical for later development, which many developmentalists and psychologists believe to this day (Landy, 2009).

Considered a "neo-Freudian" scholar, Erik Erikson's psychosocial theory has similarities with Freud's psychosexual theory. Erikson also believed that there are critical stages in development and children must advance through each stage in order to be successful later in life. However, unlike Freud, Erikson placed more weight on the consciousness, or reality, in one's life. He believed that children are active, curious

explorers of their environment, not slaves to their unconscious urges. Erikson believed that human beings went through eight major crises, or stages, in their lives (Erikson, 1968). Children ages 5-8 years old are in the midst of two crises: Initiative versus Guilt and Industry versus Inferiority. During the Initiative versus Guilt stage, children must learn to balance a sense of initiative while not stepping on others rights and responsibilities. Family is the key social unit. During Industry versus Inferiority, children must acquire both academic and social skills. Failure to acquire the necessary skills will lead to feelings of inadequacy. Teachers and peers are the key social units. Unlike Freud's stages, which end at adolescence, Erikson's stages continue through adulthood (Erikson, 1968). Another theory that promotes the idea of children being active explorers of their environments is Jean Piaget's theory of cognitive development.

Jean Piaget's theory of cognitive development is one of the most significant contributions to child development. According to Piaget, children are constantly adapting to their environment through ongoing experiences and interactions (Landy, 2009). Children ages 5-8 years old fall into two of Piaget's four stages of development, the pre-operational and concrete operational stages. Children in these stages are becoming less egocentric and begin thinking more about the needs of others. Pretend play and role-playing is very prevalent in this stage as well. This type of imaginative play is very important for young children as it helps them gain social skills and routines. During the concrete-operational stage, when children are older than seven years, they are becoming more aware of their self-concepts and what they are capable of. They are also able to think more logically than the pre-operational child but are still unable to apply the logic to abstract ideas (Shaffer, 2005).

The foundation of Vygotsky's sociocultural theory is dialogue between older, more knowledgeable members of society and young children. Just as Piaget was a proponent of children being active, curious explorers of their environments, Vygotsky was as well. However, Vygotsky placed more emphasis on the social contributions rather than children being self-initiative. In the sociocultural theory, a large emphasis is also placed on learning cognitive skills, values, and beliefs pertaining to the culture children grow up in (Shaffer, 2005). Scaffolding and collaborative learning is one way in which 5-8 year old children gain cognitive and social skills. Scaffolding involves the teacher or expert gradually increasing knowledge according to the individual child's skill level (Shaffer, 2005).

John Watson, known as the father of behaviorism, founded the theory of behaviorism, or social learning theory. Behaviorists believe that children begin to develop habits as results of social experiences and environmental influences (Landy, 2009). B.F. Skinner continued the idea that the environment shapes development and that children are passive reactors in the process. Reinforcements and punishments influence whether behaviors will occur again. These behavioral theories place all responsibility on the primary caregivers and teachers of children (Skinner, 1974).

Albert Bandura is another behaviorist with a slightly different take on social learning theory. Whereas Watson and Skinner proposed that children are passive in the process, Bandura sees children as active participants in the learning environment. Children are observational learners and learn through modeling the behaviors of adults in their lives. Cognitive processes are also acknowledged and can influence the effects of reinforcements and punishments (Bandura, 1977).

Newer developments in the field of cognitive neuroscience also contribute to the understanding of social and emotional development. Daniel Goleman's theory of emotional intelligence is based on cognition and brain function. Emotional intelligence stems from the interpersonal and intrapersonal domains of Howard Gardener's theory of multiple intelligences. In Goleman's framework of emotional competencies, he outlines four domains, which are the underpinnings of emotional competency (Van Bockern, 2006). Self-awareness, self-management, social awareness, and relationship management reflect the elements of recognition and regulation in self and others. Specific parts of the human brain are necessary for the development of these domains. The neurological circuitry that connects the limbic areas, especially the amygdala, to areas in the prefrontal cortex is essential for development of emotional intelligence (Cherniss & Goleman, 2001). Children whose brains are not developing normally or have been damaged may have difficulty developing emotional intelligence.

A theory that is closely related to Goleman's emotional intelligence is Mindsight, a term coined by Daniel Siegel. Mindsight is ―the capacity for insight and empathy; the ability of the human mind to see itself and also perceive the minds of others". At the core of mindsight is interpersonal neurobiology (Mind your brain, Inc., 2008). Integration, the process of linking separate components, is the most significant component of interpersonal neurobiology. In relationships, integration happens when two individuals are linked to each other through empathy but are still respected as individuals, with individual thoughts and feelings. Integration is also necessary as a part of how the brain functions. Each part of the brain has a unique function, but it is only when those parts are

linked that empathy, intuition, morality, and other more advanced concepts can emerge (Siegel, 1999).

Finally, a theory that attempts to explain early child development and relationships is Bowlby's attachment theory. Attachment theory stresses the importance of the earliest interactions infants have with their primary caregivers. The quality and consistency of these interactions and relationships is crucial to forming interpersonal relationships later in life. Attachment is a two-way process, where infants are becoming more aware of how their caregiver will respond and where caregivers are becoming more able to interpret their infant's cues and signals. Infants who are securely attached receive predictability, warmth, and appropriate care from their caregivers (Bowlby, 1982). The 5-8 year old child who is securely attached does not have a high need for physical contact from their caregiver, rather they have more of a goal-directed partnership. A 5-8 year old child with a resistant, avoidant, or disorganized attachment may struggle establishing relationships with peers and teachers.

Table 1

Summary of Major Child Development Theories

Theorist	**Type of Theory**	**Major Construct**	**Stage of Development for 5-8 year olds**
Freud	Psychoanalytical	Importance of Unconscious stressed Biological urges drive behaviors	3-6 years: Phallic 6-11 years: Latency
Erikson	Psychosocial	Continuing sense of achievement is important Children are active, curious explorers of their environments	3-6 years: Initiative vs. Guilt 6-12 years: Industry vs. Inferiority
Piaget	Cognitive	Children are continuously adapting to their environments through experiences and interactions.	2-7 years: Preoperational 7-11 years: Concrete Operational
Vygotsky	Sociocultural	Collaborative learning and culture are major influencers on cognitive and social development	No stages proposed.
Watson, Skinner	Behavioral	Social interactions and experiences contribute to habits. Reinforcement and punishment influence if behaviors will happen again.	No stages proposed.
Bandura	Social Learning	Cognition can be used to regulate behaviors. Children learn through modeling.	No stages proposed.
Gardener, Goleman	Emotional Intelligence (EI)	Combination of interpersonal and intrapersonal intelligences Brain development is	No stages proposed.

		significant to the development of EI	
Siegel	Mindsight; Interpersonal Neurobiology	Ability to see one's own mind and perceive others' minds Integration in the brain is key in developing empathy and morality	No stages proposed.
Bowlby	Attachment	Quality and consistency of parent-child relationship is critical in the early years Quality of attachment will influence relationships later in life	3-6 years: Physical contact is not central, goal-directed partnership

Many theories exist on child development, and this list is certainly not exhaustive. While all the theories attribute development to different factors, looking at them collectively is essential. The social and emotional development of a child is not dependent on any one factor. Children are shaped by their family, peers, teachers, environment, and heredity. In this study, emphasis is not placed on any one factor—development is seen as a milieu.

Measuring Social and Emotional Development.

There are many components of social and emotional development of young children. According to the National Center for Children in Poverty, self-awareness, self-regulation, emotional understanding, social engagement, and empathy are some of the main components that make up social and emotional development (Cooper et al., 2009). While all components are important in a child's development, in order to make this study as clear and concise as possible, one component of social and emotional development will be measured.

The relationship between two aspects of social and emotional development, prosocial behavior and empathy, was analyzed in Eisenberg and Miller's 1987 study. Prosocial behaviors are behaviors that are voluntary, intentional behaviors that are beneficial to others. Empathy is defined as an affective state influenced by another's emotional experiences. Although the relationship between prosocial behavior and empathy varied depending on which measures were utilized, significant evidence exists that shows how empathizing and affective-role taking are imperative to the development of social engagement, cooperative behaviors, and interpersonal relationships in children (Eisenberg & Miller, 1987).

Being able to recognize and respond to others' emotional needs is key in forming interpersonal relationships and engaging in prosocial behaviors. Empathy has often been defined as ~~a~~n emotional response resulting from the recognition of another's emotional state or condition, a response which is very similar or identical to what the other individual is perceived to experience" (Eisenberg et al., 1996, p. 195). However, various definitions have been proposed, making the construct of empathy difficult to interpret (Kestenbaum, Farber, & Stroufe, 1989).

Empathy is considered by many to have two components, a cognitive component and an affective component (Kestenbaum et al., 1989). Cognitive empathy is present when an individual can mentally see the perspective of another individual. In contrast, affective, or emotional, empathy is the ~~v~~icarious sharing of emotion" (Smith, 2006). The two types of empathy can function independently of one another; for example, a child may experience affective empathy but not have the cognitive ability to master the cognitive aspect of empathy. However, as described in the previous paragraph's

definition, the two often exist simultaneously (Kestenbaum et. al., 1989; Smith, 2006).

Empathy is a developmentally appropriate construct to use to measure social and emotional development (Borke, 1971). In Borke's study on children ages 3-8 years old, she found that children as young as 3 years old were able to distinguish between pleasant and unpleasant experiences. Older children (6-8 years) could more easily distinguish between a variety of emotions such as sad, happy, angry, and scared. This confirms the belief that as children naturally experience more social interactions they become more aware of others' emotions (Borke, 1971).

Although some children may naturally develop empathy through positive interactions with family members and peers, other children may be at a disadvantage for developing empathy. Lack of empathy is considered a risk factor for the development of disruptive behavior disorders (DBD); studies have shown an inverse relationship between anti-social behaviors and empathy development. Children and adolescents with DBD may have no, or very few, positive social interactions and role models, as well as brains that have developed in a way that makes empathy development a challenge (De Wied, Gispen-de Wied, & Van Boxtel, 2010).

In 2000, Hastings et al. conducted a study that demonstrated the relationship between concern for others and young children at risk for disruptive behavior disorders. When compared to 4-5 year old children who were not at risk for behavior disorders, 4-5 year old children who were at risk showed no significant differences in their concern for others. However, as these same children entered elementary school, at 6-7 years old, children at risk for behavior disorders showed a significant drop-off in the ability to show concern for others. Across time, risk, and measures, girls consistently showed greater

concern for others than boys. It is still uncertain whether children with disruptive behavior disorders actually lose the ability to show concern for others as they enter elementary school or if they retain the ability but selectively exhibit concern (Hastings, et al., 2000).

Cohen and Strayer compared affective and cognitive empathy in conduct-disordered youth to that of normally developing adolescents. Empathy was assessed through multiple methods, and conduct-disordered youth consistently reported significantly lower levels of empathy than their normally- developing peers. It is important to note however, that the adolescents with conduct disorders were not unemotional or indifferent to the video vignettes presented to them. Rather, these youth often responded with a higher level of personal distress than their normally developing peers (Cohen & Strayer, 1996).

Empathy has a close relationship with sympathy and personal distress (Landy, 2009). Children who are not able to regulate their emotions effectively can actually show decreased levels of empathy because they become so distressed when they experience the emotions of others. Sympathy can also result from empathy, but this emotion involves concern and sadness for the other individual, and the person does not actually experience the emotions of the other individual (De Wied et al., 2010; Landy, 2009).

In 2010, De Wied et al. conducted a study on empathy with boys with DBD, ages 8-12 years. The boys showed a deficit in both types of empathy when watching video vignettes. However, boys with DBD, as well as the control group of normally developing boys, showed significantly higher levels of empathy when they viewed a baby bear in distress than when they viewed a young child in distress (De Wied, et al., 2010). This is

an interesting phenomenon, particularly for this study, which shows that these boys are not entirely incapable of feeling empathy.

In the previous study, boys were able to feel emotions for a bear in distress, whereas it was difficult for them to feel emotions for another child in distress. Experiencing humane attitudes and empathy towards an animal may be linked directly to experiencing other human beings' emotions (Ascione & Weber, 1996). Children in special education and regular education elementary school classrooms who participated in AAA were able to understand and connect with the feelings that the animals in their classrooms experienced (Anderson & Olson, 2006; Melson, 2003). Lessons of empathy and respect were more easily facilitated in the presence of a dog (Anderson, & Olson, 2006). In one classroom, greater empathy towards children and more humane attitudes towards animals went hand-in-hand (Melson, 2003). In 1990, Poresky measured companion animal bonding in preschool children and analyzed the relationship between the strength of the bond between a child and his or her pet and the child's empathy score. Children who had a stronger bond with their pets had higher empathy scores than children without pets (Poresky, 1990).

Landy offers six principles for encouraging social competence, empathy, and caring behavior. One principle is ―Model caring behavior toward the child and others. Show caring behavior toward the less fortunate. Reinforce and encourage caring behavior." (Landy, 2009, p.579). This principle can be met through animal-assisted activities. The Delta Society's Standards of Practice offers examples of how animals can be utilized to improve socialization and the ability to express feelings in clients. Caring for an animal, receiving affection from an animal, observing an animal's reaction to

human behaviors, and seeing the reaction from the animal's perspective are all sample goals to encourage caring behavior and socialization (Delta Society, 1996).

Emotional Behavioral Disorders

Most students experience social, emotional, or behavioral difficulties at some point during their school years. However, some students experience chronic, extreme, and socially unacceptable behaviors that become roadblocks in their ability to learn. It is these children who are considered to have emotional behavioral disorders (Kauffman & Landrum, 2009).

The definition of emotional behavioral disorder varies from teacher to teacher, researcher to researcher, and state to state. An exact definition is difficult to come by because emotional behavioral disorders are difficult to measure and pinpoint. Because the definition is not exact, the prevalence of emotional behavioral disorders also varies. Estimates can vary from 0.5% to 20% of the school population. However, a reasonable estimate is 3% to 6% of the school population (Kauffman & Landrum, 2009).

Prior to age 8, children's behaviors are easier to change because children are rapidly developing and their behaviors are more malleable than they are at age 13. Therefore, teaching aggressive children social skills during early childhood is a worthy investment. Treatment will have the greatest impact at this time (Webster-Stratton & Reid, 2003).

Many of the children with the most severe cases of Emotional Behavioral Disorders will find themselves in residential placement at some point in their lives. A study was conducted to examine differences in youth being placed in residential care in 1995 and 2005 (Duppong-Hurley et al., 2009). Youth in residential care in 2005 were

more likely to have two or more psychiatric diagnoses and also more likely to struggle with substance abuse than youth in residential care in 1994. Also, more serious mental health issues were identified in 2005 and more psychotropic medications were being prescribed for these youth (Duppong-Hurley et al., 2009).

Causes of Emotional Behavioral Disorders.

Many factors contribute to a diagnosis of Emotional Behavioral Disorder. Biological, family, school, and cultural factors can all play a role in a child's diagnosis (Kauffman & Landrum, 2009).

Biological factors include genetics, temperament, and brain damage. Genetics play a role in most Emotional Behavioral Disorders that children experience. Attention deficits, autism, depression, and anxiety all have a hereditary component (McGuffin & Thapar, 1997). However, disorders are not genetically transmitted, rather, each disorder is influenced by genetic factors, so certain individuals may have a genetic predisposition to behave in a particular way (Kauffman & Landrum, 2009). Each child is born with an innate tendency to behavior in a particular way. This is their temperament, which is closely related to genetics. However, unlike genetics, temperament can be shaped by the environment in which the child grows up. The child's temperament will influence how others respond to him or her and then that response can influence the child's temperament (Kaufmann & Landrum, 2009).

Brain damage can occur before, during, and after birth and have a large effect on antisocial behavior (Kauffman & Landrum, 2009). In 2007, Sterzer et al. conducted a study that compared brain images of normally developing adolescents to adolescents with conduct disorders. They found that youth with conduct disorders had reduced grey matter

volume in the amygdala and anterior insular cortex. Both of these areas of the brain are critical in emotional regulation and processing. The empathy levels of adolescents in this study were also assessed, and an inverse relationship between empathy level and the volume of the anterior insular cortex was determined. Structural differences in the brain influences development of empathy and can lead to more aggressive behaviors (Sterzer, Stadler, Poustka, & Kleinschmidt, 2007).

The way a family is structured as well as how the family interacts with one another can present a risk for development of Emotional Behavioral Disorders. Family structure, including number of parents in a household, siblings, and alternative care can have an impact on children's behavior. A study conducted in 1995 showed that boys growing up in families where only a mother is present were more likely to act aggressively than boys growing up in families where a father or mother's male partner is present. Father-mother households added a protective factor to the boys' lives. In this particular study, family structure did not affect girls' aggressive behaviors (Vaden-Kiernan, Ialongo, Pearson, & Kellam, 1995).

An increasing number of children are entering alternative care systems, such as foster care, due to parental neglect and abuse (Kauffman & Landrum, 2009). Foster families and adoptive families often do not have the skills and supports in place to raise a behaviorally difficult child. Students with Emotional Behavioral Disorders who were placed in foster care are at the highest risk for having academic and social problems in school (Smucker, Kauffmann, & Ball, 1996).

The way in which families interact is another factor that contributes to Emotional Behavioral Disorders in children. Research has shown particular parenting styles and

disciplinary techniques to be more effective with children with behavioral problems. Two dimensions of discipline include responsiveness and demandingness. Responsiveness is demonstrated through warmth, reciprocity, and attachment between parent and child. Demandingness is demonstrated through parental control, positive and negative consequences for behavior, and monitoring (Baumrind, 1996). A parenting style that has both of these dimensions is authoritative; a relationship between authoritative parenting and decreased tobacco usage and other health risk behaviors was found in a recent study (Adamczyk-Robinette, Fletcher, & Wright, 2002). Unfortunately, authoritative parenting is not the typical interaction seen in families of children with behavioral disorders (Kauffman & Landrum, 2009).

School provides an important socialization opportunity for children with Emotional Behavioral Disorders. Inappropriate expectations and inconsistent behavior management techniques can contribute to the worsening of behavioral issues. Labels, classrooms standards, and students' individual needs all factor into what teachers expect of students. All too often labels and classroom standards hold precedence over the individual needs of the child (Hallahan et al., 2009; Kauffman & Landrum, 2009). When managing behaviors, in order to effectively increase socially appropriate behaviors, reinforcement must immediately follow the behavior and it must consistently follow the behavior (Alberto & Troutman, 2009).

Peer groups, ethnicities, neighborhoods, social class, and the mass media are all components within the cultural factor of Emotional Behavioral Disorders. Peer groups can be very significant cultural influences, especially as children reach the adolescent ages (Adamczyk-Robinette, Fletcher, & Wright, 2002). Different ethnicities have varying

values, demands, and prohibitions attached to them, which can impact how a child behaves. The neighborhood and social class of children may affect their behaviors, but this does not necessarily correlate to true behavior disorders. However, where children grow up and how wealthy their parents are can contribute to where they are living and what kind of social conditions they are surrounded by. The mass media, particularly the level of violence and advertising in the media, can also have an impact on what children do for leisure (Hallahan et al., 2009; Kauffman & Landrum, 2009).

None of these factors—biological, family, school, and cultural—is likely to be the sole cause of an Emotional Behavioral Disorder. A combination of factors is often the leading cause of Emotional Behavioral Disorders. Once identified as having an Emotional Behavioral Disorder, students are eligible for a wide variety of services and educational accommodations.

Education, Treatment, and Interventions.

Children with Emotional Behavioral Disorders have a diagnosis from the Diagnostic Statistics Manual and are clinically diagnosed before being eligible for special education services. Depression, anxiety, oppositional defiant disorder, conduct disorder, bipolar disorder, and attention deficit hyperactivity disorder are among some of the more common Emotional Behavioral Disorders. The severity of the disorder will affect the types of services the child receives (Pacer Center, 2010). Many children will receive both special education services as well as mental health services. Parent and family education, individual therapy, and group treatment are all methods that are used to improve the lives of these children (Hoagwood, et al., 2007).

In Webster-Stratton and Reid's 2003 study, they found that parent training is one of the most effective approaches but can be very difficult to carry out. Parents have busy schedules and may not find the time to devote to learning about and implementing strategies to help their child. Also, parents may not be consistent with the strategy or intervention chosen by the team (Webster-Stratton & Reid, 2003). Webster-Stratton and Reid also found that peer group treatment approaches to teach social skills works, but the skills are not generalized well beyond the group setting (Webster-Stratton & Reid, 2003).

Most classroom educational intervention programs focus on teaching young children with Emotional Behavioral Disorders necessary social skills. Dina Dinosaur is a program for children ages 4-8 years old with Oppositional Defiant Disorder and focuses on empathy, perspective taking, and emotional regulation. This program consisted of 22 sessions each for children and parents. It is important to note that a program like this is not a stand-alone treatment for children with Oppositional Defiant Disorder. Many other factors influence the outcomes of educational plans and treatments of children with Emotional Behavioral Disorders (Webster-Stratton & Reid, 2003).

Another program used during the early school years is the First Step Program. Similar to the Dina Dinosaur, this three month-long program includes a school intervention component for the children and parent training (Walker et al., 2009). It also screens children for behavioral issues.

Second Step is a violence prevention program and social emotional learning program that focuses on empathy, social problem solving, and anger management techniques. To learn the concept of empathy, children in preschool through ninth grade participate in role-playing and respond to and discuss their feelings regarding

hypothetical situations. This program is based largely on Bandura's Social Learning theory (Frey, Hirschstein, & Guzzo, 2000).

Prevent-Teach-Reinforce (PTR) is another social skills curriculum for children in grades K-8 that is recommended for children with Emotional Behavioral Disorders. This program was taught over 71 treatment days and accomplished a small change in social skills and problem behaviors. The authors realize that for some severe Emotional Behavioral Disorders, this time period may be too short to reach substantial change in behavior (Iovannone et al., 2009).

The Better Play Times program is a unique intervention for children with social, emotional, and behavioral problems. This is a child-directed play session with a school staff member. It has a goal to "gain insight into the feelings and emotions of others" among other goals such as developing emotional vocabulary and self-esteem, and exploring problems and solutions. Primary school children in this treatment program met weekly for 30 minutes over 12 weeks. Although successes were significant, the authors realize that they cannot attribute the successes entirely to the therapy sessions due to other factors in the lives of the children such as other therapies they were part of, their family lives, and community (Woolf, 2008).

Animal-assisted activities and therapy have also been used as interventions for this population of children. Youth in residential treatment centers and psychiatric hospitals who suffered from mental health problems such as depression, conduct disorder, and bipolar disorder, benefited greatly from the presence of an animal. Both dogs and farm animals have been utilized in these settings. The animals were able to provide the need for physical touch, were listeners and comforters, unconditionally

accepting therapists, and catalysts for teaching and learning (Bardill & Hutchinson, 1997; Mallon, 1994).

Children with less severe disorders who are placed in special education schools or classrooms also benefit socially and emotionally from the interactions with an animal. Feelings of loneliness, self-esteem, and level of empathy were measured before and after 10 special education day students participated in a nine-week horse care program. No significant changes were found. This could be due to the length of the program and the severity of the students' disabilities. A longer program may be necessary to achieve the desired results (Ewing et al., 2007).

Emotionally disturbed youth, ages 11 and 12, were involved in AAT sessions from January-May for one hour each week, in their school setting. Following therapy, the youth demonstrated improved relationships with peers, more eye contact with others, and appropriate tone of voice (Kogan et al., 1999).

In a self-contained classroom of six children with severe emotional disorders, having a dog as part of the class was found to be very beneficial for the elementary students. When the dog was in the classroom, lessons of respect, responsibility, and empathy were easily facilitated. Children understood and connected their own feelings and needs to those of the dog (Anderson & Olson, 2006).

Parent training, social skills curriculums, play therapy, and animal-assisted therapy have been used as tools to improve the lives of children with Emotional Behavioral Disorders.

Animal-Assisted Activities as a Component of Outdoor Education

Many definitions for outdoor education exist among organizations, universities, and individual researchers. In 1958, Donaldson and Donaldson defined outdoor education as education ~~"~~*~~in~~*, *about*, and *for* the outdoors" (Neill, 2008). This classic definition provided a solid foundation for outdoor education for almost 30 years (Priest, 1986). In 1986, Simon Priest offered a redefinition of the term outdoor education. Outdoor education is ~~"~~a~~n~~ experiential process of learning by doing, which takes place primarily through exposure to the out-of-doors. In outdoor education, the emphasis for the subject of learning is placed on RELATIONSHIPS, relationships concerning people and natural resources" (p. 13).

Intrapersonal, interpersonal, ecosystemic, and ekistic are the four domains of relationships that this definition of outdoor education places emphasis on (Priest, 1986). The goal of animal-assisted activities in this study is to help children build intrapersonal and interpersonal relationships by caring for farm animals in an outdoor setting.

Although the primary purpose of animal- assisted activities in this study is not to educate children on the ecosystemic and ekistic relationships, Kahn and Kellert speak of the developmental probability that young children can extend the care for animals to care for habitats and ecosystems (Kahn & Kellert, 2002). Care for and knowledge about the relationships among animals, habitats, and ecosystems along with knowledge of action skills and personality factors leads to an intention to act and ultimately to responsible environmental behavior (Hines, Hungerford, & Tomera, 1987).

In 2000, Shultz conducted a study on ~~"~~Empathizing with Nature". When participants were asked to take the perspective of an animal being harmed by nature, they

showed more biospheric concern than they did when viewing other images of the natural environment. This suggests that participants felt greater levels of empathy when seeing an animal being harmed, and thus had a greater sense of concern for the biosphere. These results have implications for environmental and outdoor education; when children have direct experiences with nature and animals, they should feel more connected to each other and the Earth (Shultz, 2000).

Measurement Tools

Empathy can be assessed in a variety of ways depending on the ages of the individuals and the type of empathy that is being measured. Self-report questionnaires, parent and teacher reports, picture/story/video methods, physiological measures, and facial indices are all useful in measuring empathy. In this section of the literature review, the most common instruments for measuring empathy in 5-8 year old children are described.

The Bryant Index of Empathy is a paper and pencil test that was developed in 1982 when there was a great need for a valid, reliable measure of empathy that was consistent across age ranges. This index was based on a well-known adult empathy test, the Mehrabian and Epstein scale (Bryant, 1982). The Bryant index is suitable for children and adolescents, from ages 5 years and older. It is a 22-item self-report that asks children to answer ~~"y~~es" or ~~"n~~o" to statements and is designed to take around ten minutes. The test has an emphasis on affective empathy (Landy, 2009). The Bryant Index of Empathy has been used to assess empathy responses in elementary school children after animal interactions (Ascione & Weber, 1996). This index has also been used to assess empathy in youth with conduct disorders (Cohen & Strayer, 1996).

When tested on first graders, test-retest reliability for this instrument was r=. 74. Convergent validity was supported for each item, across grade levels. Discriminate validity was not significant; when empathy index scores were compared to reading achievement scores in first graders, there was no correlation. While reliability and validity make this instrument moderately successful in measuring empathy in young children, Bryant (1982) still emphasizes the need to use other sources of data in addition to this measure in order to create a more complete picture of empathy.

The Griffith Empathy Measure is a parent-report and an adaptation from the Bryant Index. The scale is a 23-item questionnaire that parents use to rate their children on a 9-point Likert scale for each item. This instrument measures both cognitive and affective empathy. Children under the age of 8 may not have the cognitive ability to report on their own feelings, hence the necessity of a parent-report for empathy (Dadds et al., 2008).

This parent-report of empathy has an r= .81 for reliability across age ranges and genders. However, when used as a two-factor measure, the cognitive component of the measure was found to be weak. Comparing reports that mothers completed to those that fathers completed supported convergent validity. The parent-report scores were also compared to the Bryant Index of Empathy self-report and behavioral observations and were found to be consistent. To test divergent validity, empathy scores were compared to verbal IQ scores and there was no correlation (Dadds et al., 2008).

The Interpersonal Reactivity Index (IRI) is another self-report of empathy. This index takes a multi-dimensional approach by including four sub-scales that address the various types of empathy. Personal distress, fantasy, perspective taking, and empathic

concern are all measured. The index contains 28 questions and has been tested for validity and reliability on adults (Davis, 1980). However, particular questions and sub-scales may be appropriate for measuring empathy in children. The empathic concern component of the IRI has been used to measure empathy in youth with conduct disorders (Cohen & Strayer, 1996).

A behavioral observation tool used to examine social skills (including empathic concern) is the Preschool and Kindergarten Behavior Scales (PKBS), second edition, developed by Kenneth Merrell. The second edition is the most recent version of the scale and was updated in 2003 (Violence Institute of New Jersey, 2007).

The PKBS is intended for use with children ages 3-6 years. Parents, teachers, and other caregivers are the intended users of this 76-item scale. The 76 items are divided between two scales: the social skills scale and problem behaviors scale. The social skills scale is then made up of three sub-scales: Social Cooperation, Social Interaction, and Social Independence. The problem behaviors scale is made up of two sub-scales: Externalizing Problems and Internalizing Problems. Additionally there are five supplementary problem behavior sub-scales to use (Merrell, 2003).

Test-retest reliability, inter-rater reliability, internal consistency, and criteria validity have all been assessed for the sub-scales. The test-retest reliability is 0.87, inter-rater reliability is 0.63, and internal consistency is 0.97. Criteria validity was found to be acceptable (Merrell, 2003).

Picture, story, and video methods are often used to assess empathy. Children are told a story or shown a video or picture that are designed to induce emotion. Once the child has heard the story or seen the video or picture, there are various ways to measure

the level of empathy in the child. Self-reports such as those listed above can be utilized (Cohen & Strayer, 1996). Facial indices and physiological measures are two less common ways to measure empathy in the case of picture, story, and video methods (Eisenberg & Miller, 1987).

Facial expressions have been identified as a way to measure empathic responses. In de Wied et al's study in 2010, cheek and eyebrow muscle movements were recorded using electromyography as boys with Disruptive Behavior Disorders watched video vignettes. In other studies, trained observers look for facial tics or movements of other facial muscles. The most common physiological measure when assessing empathy is heart rate (De Wied et al., 2010; Hastings, 2000). However, one challenge when measuring heart rate is that it is difficult to know if the increase in heart rate stems from empathy, personal distress, sympathy, or even anxiety (Eisenberg & Miller, 1987).

Each assessment tool has benefits as well as limitations. However, the tools described in the previous paragraphs have all been tested for reliability and validity and have been utilized in several empathy studies.

Summary of Literature

Approximately 6 % of school-age children receive special education services for Emotional Behavioral Disorders, and the complexity of their diagnoses are on the rise (Duppong-Hurley et al., 2009; Kauffman & Landrum, 2009). Educational strategies and interventions that currently exist for these students are social skills curriculum, parent training workshops, and various types of therapies.

Several programs that teach social skills for children with Emotional Behavioral Disorders emphasize the importance of teaching empathy and perspective taking during

the early school years (Frey, Hirschstein, & Guzzo, 2000; Webster-Stratton & Reid, 2003). Lack of empathy is seen as a risk factor for Emotional Behavioral Disorders, and there is also significant evidence that empathizing and affective-role taking are imperative to the development of social engagement, cooperative behaviors, and interpersonal relationships in children (de Wied et al., 2010; Eisenberg & Miller, 1987).

Animal-assisted activities and therapy have been used to improve the health and well-being of the elderly, adults, adolescents, and young children (Nimer & Lundahl, 2007). Several studies have analyzed programs that are specifically for children with special needs. Children in special education and regular education elementary school classrooms who participated in AAA were able to understand and connect with the feelings that the animals in their classrooms experienced (Anderson & Olson, 2006; Melson, 2003). Lessons of empathy and respect were more easily facilitated in the presence of a dog (Anderson, & Olson, 2006). In one classroom, greater empathy towards children and more humane attitudes towards animals went hand-in-hand (Melson, 2003).

In this study, animal-assisted activities will be conducted with farm animals and will take place outside. Although the primary purpose of animal- assisted activities is not to educate children on the outdoors and the environment, Kahn and Kellert speak of the developmental probability that young children can extend the care for animals to care for habitats and ecosystems (Kahn & Kellert, 2002). For this reason, animal-assisted activities are often placed in the context of outdoor education programs.

Chapter Three

Methodology

Research Design

A descriptive research strategy, specifically a case study design, was utilized to describe the extent to which animal-assisted activities affect the social and emotional development of 6-year-old children with emotional behavioral disorders.

A case study design was appropriate to use in this study for several reasons. First, in order to address the primary study objective, "To describe and quantify how animal-assisted activities affect the development of empathy in 6-year-olds with emotional behavioral disorders", it was appropriate to do an in-depth analysis of a small group. Second, the research in the field of animal-assisted activities with farm animals and children with emotional behavioral disorders is only emerging. Studies that are in-depth can offer a better understanding of the phenomenon, although these studies may not offer cause-effect relationships.

Limitations or threats to validity can be found in case studies. The internal validity in this particular study may be weak in the areas of history, maturation, and instrumentation (Gravetter & Forzano, 2009). Outside influences such as family life and school may have affected the results of the study. Maturation is a source of validity threat in this population because they receive special education and often times mental health services. These other services could explain the change in empathy other time. Last, instrumentation could become a threat to validity if the observer was not consistent in measurements across sessions. Case studies also introduce a bias and subjectivity to interpretation when observing and coding behaviors (Gravetter & Forzano, 2009).

Threats to the external validity or generalization of results may also be present. Characteristics of the participants as well as features of the study cannot be generalized to other populations or settings (Gravetter & Forzano, 2009). In Chapter 1, these limitations are noted:

- The results of animal-assisted activities are limited to the animals used in this study. The results apply to small domestic farm animals such as goats and sheep. Results cannot be generalized to include larger domestic farm animals such as cattle and horses or companion animals such dogs and cats.
- Consequently, the results are limited to the conditions specific to the study site.
- The results cannot be generalized to other ages or disabilities of children.

Subject Selection

Participants in this study were 6-year-old children who were diagnosed with emotional disturbances according to the Individuals with Disabilities in Education Act. Six-year-old children were chosen based on their social and emotional malleability at this age; the shifts in empathy will be more visible at this age, and the activities will likely have more of an impact. The target population for this study was all 6-year-old children with emotional disturbances. However, the sample was selected from the accessible population, which was located in Duluth, Minnesota and available during after-school hours.

A nonprobability sampling technique, convenience sampling, was utilized. Although convenience sampling can introduce bias into the sample, this was the easiest way to obtain a sample, given the population and geographic location. Students with emotional behavioral disorders comprise approximately 3% to 6% of the school

population (Kauffman & Landrum, 2009). In a small city such as Duluth, Minnesota, these statistics indicate that the accessible population is small to begin with, and having access to each special education student in the school district is not possible.

Acceptance into the study required a commitment to the six sessions, a signed parental consent form, and minimal parental involvement. Parents were asked to do the following:

- Sign a consent form for their child to be involved in the study.
- Complete a pre and post parent measure of child empathy for their child.
- Do their best to make sure their child attends all six of the activities.

A maximum of 10 children were included in this study based on their regular attendance at the school or organization. Ten was chosen based on the number of staff and volunteers needed to safely teach this many children and the amount of time it requires to analyze data for this many participants.

Outcome Measures

Three data collection methods were utilized in order to triangulate data and strengthen the results of the study. Child self-reports, a parent-report, and behavioral observations by a trained observer measured outcomes.

Empathy was the dependent variable being measured in this study. The child self-report used in this study was an adaptation of the Bryant Index of Empathy. The adaptation as well as the original index are located in Appendices A and B, respectively.

The parent-report utilized in this study was an adaptation from the Griffeth Empathy Measure. Both the adaptation and the original measure are included in Appendices C and D, respectively.

Both the child and parent reports were adapted from these well-established tools to better serve the population in this study. First, the number of items was shortened to just five relevant items. Five was determined to be an appropriate amount for a 6-year-old with an emotional behavioral disorder to answer without becoming exhausted. Two items regarding feelings towards animals were added to better assess how animals affect development of empathy. Parents were asked to assess the same five statements regarding their child's empathy.

The adapted measures were tested for face and content validity. First of all, a panel of experts examined them: early childhood, special education, and environmental education faculty at a university. Finally, two working professionals, who work with at-risk youth in the community, evaluated them.

Each session was videotaped in order to conduct behavioral observations at a later time. A single trained observer made observations in order to be consistent across time and participants. The criteria for a trained observer was someone who studied the literature regarding the behavioral observation tool, practiced rating the behaviors, and had little bias regarding the children or the intervention going into the project. The behavioral observation tool that was used was the Preschool and Kindergarten Behavior Scales (PKBS), second edition, developed by Kenneth Merrell. The second edition was the most recent version of the scale and was updated in 2003 (Violence Institute of New Jersey, 2007).

For purposes of this study, the Social Cooperation and Social Interaction sub-scales were the tools used to identify change in empathy over the six sessions of animal-

assisted activities. The complete scales are included in Appendix E, but some of the relevant items that were rated include:

- Tries to understand another child's behavior
- Comforts other children who are upset
- Is sensitive to adult problems (–Are you sad?")

Using behavioral observations in addition to parent-reports and child self-reports of empathy strengthened the data that was collected.

Conditions of Testing

Once children were selected for participation by the partnering organization (i.e. Boys and Girls Club) and myself, a pre-research parent meeting was held at the organization. The purpose of this meeting was four-fold:

1. First of all, the parents received an explanation of what the study entailed, why it was significant, and what would be asked of them and their children throughout the study.
2. Second, consent forms were signed.
3. Third, parents completed the adapted Griffeth Empathy Measure.
4. Finally, parents were informed of and asked to attend the final post-research parent meeting where they completed the adapted Griffeth Empathy Measure and received a $20 gift card. In order to receive the gift card they had to complete the requested surveys and their child had to attend all six sessions.

Immediately prior to the first session of animal-assisted activities, the children and I met to discuss the activities they participated in. During this time, the children completed an adapted Bryant Index of Empathy. I read the questions to the children to ensure

understanding of the items. Throughout the entire study, no names were associated with data. Each participant received an identification number that was associated with his or her data.

Children were then involved in six sessions of animal-assisted activities at Woodland Hills. The six sessions occurred over a span of three weeks. During transport to and from each session, children were asked to answer just one of the questions from the adapted Bryant Index of Empathy. This gave a daily report of the child's empathy shift. Each session was videotaped for purposes of behavioral observation. A volunteer familiar with videotaping and unfamiliar with the research objectives videotaped the children.

Immediately following the final session of animal-assisted activities, children completed the adapted Bryant Index of Empathy as a post-test. Soon thereafter, the post-research parent meeting was held. During this meeting, parents completed the adapted Griffeth Empathy Measure as a post-test. When the post-test was completed, parents were thanked for their participation and received the $20 gift card.

Table 2

Summary of Conditions of Testing

One Group of Seven Students: 6-year-olds Emotional Behavioral Disorders Receiving Special Education Services in the Duluth Public Schools
1. Parent meeting to give specifics of the study, have consent form signed, and collect initial data from parents.
2. Child meeting to explain study and collect initial data from children.
3. Six sessions of animal-assisted activities, over a three-week time period. Sessions are videotaped. One question from adapted Bryant Index of Empathy is asked as a pre/post question of the child each session.
4. Post-study data collected from children immediately following the final session.
5. Parent meeting to collect post-study data and thank parents with a $20 gift card.

Treatments

Children participated in six sessions of animal-assisted activities at Woodland Hills. Woodland Hills is a residential treatment center that has a strong farm component. The criteria for selecting Woodland Hills' farm program included:

- The appropriate animal species and temperament. Animals were domestic farm animals (goats, sheep, llamas, chickens, etc) and were habituated and trained so that they behaved in a way that was safe around children with behavior disorders.
- An indoor space for students and animals to work in, in the case of inclement weather.

Participants in this study did not come into contact with residents of Woodland Hills; participants were primarily in the barns and outdoors in the pastures during the treatment. Activities involved direct animal experience with domestic farm animals such as sheep, goats, chickens, and llamas. An outline of the animal-assisted activities curriculum is included as Appendix I.

Data Analysis

Descriptive statistics were used to analyze the data from this study. Descriptive statistics summarized, organized, and simplified the scores from child self-reports of empathy, parent-reports, and behavioral observations. The self-reports, parent-reports, and behavioral observations were coded before computing statistics.

Frequency was calculated to provide an overall picture of the data and was useful in seeing where any individual score lied in relation to the other scores.

Measures of central tendency such as mean, median, and mode were also calculated. These measures found a single score that was most representative of the entire group.

Finally, measures of variability such as the range, variance, and standard deviation were calculated. Measures of variability were useful in finding out how spread apart or how similar scores of empathy were from child to child. These measures helped show how representative a single score is of the entire group.

Using frequency, measures of central tendency, and measures of variability was appropriate for the type of study that was conducted. A case study warranted the use of descriptive statistics.

Chapter Four

Results

Research Design

A descriptive research strategy, specifically a case study design, was utilized to describe the extent to which animal-assisted activities affect the social and emotional development of young children with characteristics of emotional behavioral disorders.

Subject Selection

Participants in this study were 6-and-7-year-old children who displayed characteristics of emotional disturbances according to the Individuals with Disabilities in Education Act. Because children's diagnoses is confidential and protected information within the school district, the participating organization did not have access to this information. In order to identify children who displayed characteristics of emotional disturbances, the following actions were taken.

A social work student (also employee at the participating organization, Boys and Girls Club of Lincoln Park) with extensive knowledge in children and behavior disorders initially selected a pool of 12 children, based on their display of characteristics related to emotional disturbances. Then, I also did a total of two hours of observation of all 12 children and chose 10 of the children to participate in the study. I observed children in three unique settings: the game room, computer lab, and while watching a movie. See Appendix K for the checklist used by the social work student and myself.

Once the ten children were chosen to participate, a letter describing the study,

consent form, Boys and Girls Club permission slip, and pre-treatment Griffeth Empathy Measure were sent home to all parents on three different occasions. Of the ten children selected to participate, four children returned the necessary paperwork to begin the treatment sessions. Table 3 below describes the four participants.

Table 3

Participant Characteristics

Participant ID	Age	Sex	Race
3	6	F	White
6	6	M	American Indian
10	7	M	White
11	6	M	White

Outcome Measures

The three outcome measures used in this study were the Griffeth Empathy Measure, Bryant Index of Empathy, and Pre-Kindergarten Behavioral Scales- Social Cooperation and Social Interaction.

Conditions of Testing

A pre-research parent meeting was offered to all parents to discuss the benefits of the study for them and their children. Only one parent attended this meeting. As an incentive, a $20 Super One gift card was offered upon completion of all six sessions and required paperwork.

Immediately prior to the first session of animal-assisted activities, the children

and I discussed the activities they would be participating in. During this time, all the children completed an adapted Bryant Index of Empathy. I read the questions to the children to ensure understanding of the items.

Children were then involved in five sessions of animal-assisted activities at Woodland Hills. The five sessions occurred over a span of three weeks. Each session was videotaped for purposes of behavioral observation.

Immediately following the final session of animal-assisted activities, three of the children completed the adapted Bryant Index of Empathy as a post-test. Three days after the final session, the post-research parent meeting was held. No parents attended this meeting. Two parents returned the post-research Griffeth Empathy Measure. One parent qualified for the $20 Super One gift card by completing all necessary paperwork throughout the entire study.

Treatment

Children participated in five sessions of animal-assisted activities at Woodland Hills. Examples of these activities include brushing, walking, and feeding the animals, acting out hypothetical situations, and discussing feelings of the animals and themselves. The entire animal-assisted activities curriculum is located in Appendix L.

Data Analysis

Descriptive statistics were used to analyze the data from this study. Descriptive statistics summarized, organized, and simplified the scores from child self-reports of empathy, parent-reports, and behavioral observations. The self-reports, parent-reports, and behavioral observations will be coded before computing statistics.

Results

The results are presented in three sections, according to the outcome measure used.

Griffeth Empathy Measure.

The Griffeth Empathy Measures asked parents to rate their child's level of empathy on a scale of -4 (low) to +4 (high). With a total of five statements, the highest score (or highest level of empathy) one could receive was +20. The lowest score (or lowest level of empathy) one could receive was -20. The mean score increased slightly from the pre-test to the post-test. Before AAA, the mean score was 10 (n=4), and after AAA, the mean score was 10.5 (n=2). Table 4 contains more descriptive statistics for the Griffeth Empathy Measure.

Table 4

Descriptive Statistics of Griffeth Empathy Measure

	Pre-AAA	Post-AAA
Frequency	4	2
Mean	10	10.5
Range	7 (14-7)	5 (13-8)
Standard Deviation	3.162	3.536

Bryant Index of Empathy.

The Bryant Index of Empathy asked children to self-report their own levels of empathy, based on five true or false statements. The highest score (or highest level of

empathy) one could receive was +5. The lowest score (or lowest level of empathy) one could receive was 0. The mean score increased slightly from the pre-test to the post-test. Before AAA, the mean score was 2.25 (n=4), and after AAA, the mean score was 3.67 (n=3). Table 5 contains more descriptive statistics for the Bryant Index of Empathy.

Table 5

Descriptive Statistics of Bryant Index of Empathy

	Pre-AAA	Post-AAA
Frequency	4	3
Mean	2.25	3.67
Range	4 (5-1)	3 (5-2)
Standard Deviation	1.893	1.528

Preschool and Kindergarten Behavior Scales.

Each of the five sessions was videotaped and later scored by the author using the Social Cooperation and Social Interaction subscales of the Preschool and Kindergarten Behavior Scales.

The Social Cooperation subscale included 12 items that describe the child's ability to follow instructions from adults, compromise with peers, and cooperate with others. Each item was ranked as "Never" (Score of 0), "Rarely" (1), "Sometimes" (2), or "Often" (3). The score for each item was totaled to determine the raw score. The highest raw score (best social cooperation skills) that could be achieved in this subscale is 36.The raw scores for each individual was totaled and divided by the frequency to find the mean raw score. The mean raw score was then converted to the school rater standard score and

a corresponding percentile was determined based on the standard score.

Percentile scores fluctuated throughout the sessions of AAA, however, the mean percentile increased from the 19th percentile to the 30th percentile, overall. When children score in the 19th percentile, they are performing equal to or higher than 19% of the normative population. However, in the 30th percentile, children are scoring equal to or higher than 30% of the normative population in social skills. Table 6 contains descriptive data for all five sessions.

Table 6

Preschool and Kindergarten Behavior Scales— Social Cooperation Subscale

	Session 1	Session 2	Session 3	Session 4*	Session 5
Frequency	4	3	3	2	3
Mean- Raw	24.00	26.33	26.33	22.50	26.00
Mean- Standard Score	88	93	93	86	93
Percentile	19	30	30	16	30

*Session 4 is an outlier because the only two participants present were the participants with the lowest scores throughout the study. Naturally, this would create low scores overall for the session.

The Social Interaction subscale included 11 items that describe the child's ability to establish and maintain friendships, mostly among peers. Each item was ranked as ~~N~~ever" (Score of 0), ~~R~~arely" (1), ~~S~~ometimes" (2), or ~~O~~ften" (3). The score for each item was totaled to determine the raw score. The highest raw score (best social interaction skills) that could be achieved in this subscale is 33. The raw scores for each individual was totaled and divided by the frequency to find the mean raw score. The

mean raw score was then converted to the school rater standard score and a corresponding percentile and risk level were determined based on the standard score.

Percentile scores remained near the 5th percentile for social interaction skills throughout the study, meaning participants scored only equal to or higher than 5% of the normative population. The standard scores reflect a high or moderate risk level for participants throughout the study. Participants in the high-risk level may be in need of special services and are at a very high risk for developing significant deficits in their social behaviors. Participants in the moderate-risk level should be considered for special services due to the possibility of developing maladaptive social behaviors. Table 7 contains descriptive data for all five sessions.

Table 7

Preschool and Kindergarten Behavior Scales— Social Interaction Subscale

	Session 1	Session 2	Session 3	Session 4*	Session 5
Frequency	4	3	3	2	3
Mean- Raw	11.50	11.33	14.00	8.00	13.67
Mean-Standard Score	70	67	74	60	74
Percentile	5	4	7	2	7
Risk Level	High	High	Moderate	High	Moderate

*Session 4 is an outlier because the only two participants present were the participants with the lowest scores throughout the study. Naturally, this would create low scores overall for the session.

Summary of Results

The Griffeth Empathy Measure and Bryant Index of Empathy showed increases in empathy when comparing empathy before AAA and after AAA. Participants are at the highest risk for maladaptive social interaction behaviors but improved throughout the study in their social cooperation behaviors.

Chapter Five

Discussion

Findings

Over the course of five one-hour sessions with farm animals, 6 and 7 year olds in this particular study showed an increase in empathy (before AAA, *M*= 2.25, after AAA, *M*= 3.67), social interaction (before AAA, *M*=70, after AAA, *M*= 74), and social cooperation (before AAA, *M*=88, after AAA, *M*=93).

Specific Topics of Discussion

Participant Recruitment.

Recruiting participants who were 6-years-old, had an emotional behavioral disorder, and attended the partnering organization was a challenge. The partnering organization (an out-of-school time youth agency) did not have access to protected data from the school district, and thus, could not identify which children had emotional behavioral disorders in the school district. Although it is important for the privacy and safety of children to have this information protected from outside parties, it also limits the services these children can receive in out-of-school time programs. For purposes of this study, several trained professionals did behavioral observations to identify children with characteristics of emotional disturbances, based on the IDEA qualifications. In the future, the organization may consider partnering with the school district to better serve this vulnerable population.

There were also a limited number of participants due to low parental involvement.

In order for a child to participate in the study, a parent or guardian had to sign a consent form for the researcher and a permission slip for the partnering organization. Out of the 10 children selected for participation, only four children could participate. Consent forms and permission slips were sent home to parents multiple times over the course of 2 weeks. Parents were also invited to a parent meeting where dinner was served in an effort to get more forms signed. Only one parent attended this meeting.

Due to low numbers of participants, only five of the six sessions were conducted. The partnering agency would not allow any less than three children to participate because they could not afford to give up a staff for less than three children. On the day of the first session, only 2 participants had their forms signed, so session 1 was cancelled.

Influences on Results.

Scores from the Bryant Index of Empathy may not represent the child's empathy level accurately. Myself or another staff member read each item to each child in an attempt to ensure understanding. However, it was noted that some children still did not comprehend the statements or did not care enough to put thought into the statements.

Scores from the Preschool and Kindergarten Behavior Scales decreased significantly in Session 4. During Session 4, only two children participated, and these two children exhibited the most challenging behaviors throughout the entire study. This naturally made the scores low during Session 4.

Summary of Recommendations

When implementing animal-assisted activities and therapy, it is imperative to have a risk management plan. Many agencies implementing these treatments do not have

risk management plans, which greatly affects the credibility of the field. Standardizing these risk management plans and setting industry standards would be a second recommendation.

When using AAA and AAT as treatment modalities, providing clients with hypothetical situations as well as authentic experiences is extremely valuable. In this study, hypothetical situations gave participants the ability to think about how animals would feel given certain situations. For example, participants would not be able to see how an animal felt if he/she was being mistreated, but when read a story about an animal being mistreated they were able to put themselves in the animal's shoes.

However, authentic experiences are equally important. Skilled professionals can allow for an authentic interaction between a child and an animal. When a child can see the consequences of his or her own actions, this is where much of the learning will take place.

Finally, a recommendation for organizations implementing AAA and AAT is to evaluate as much as possible. AAA and AAT is a new field that can benefit clients greatly. However, if documentation and evaluation is not happening, no one will know the benefits, except for the professionals who are already invested in the treatment. In order for health insurance companies to recognize AAA and AAT as an acceptable treatment modality, documentation of the benefits the treatment provides is crucial.

Recommendations for providing services to this special needs population include making certain that the measurements being used to evaluate the child are appropriate for where the child is developmentally. If children do not understand what they are being asked, the data can easily be flawed.

A second recommendation for agencies providing services to special needs populations is that, as much as possible, agencies should collaborate and share data to increase the benefits children can receive. In this case specifically, out-of-school time agencies and schools should share data that will benefit children.

Summary of Future Research

Looking into the future of AAA and AAT research, it will be important to continue studying the effects of treatment with all types of animals. Research should continue with all vulnerable populations and strive to reach a larger, more diverse sample size.

Conclusion

When working with young children with special needs, many factors can influence the success of treatment. Parental involvement, partnerships among organizations serving these children, and access to the appropriate treatment modality all play a part in assisting the child reach his or her own potential.

As shown in this study, animal interactions can positively affect the development of social skills such as cooperation, perspective taking, and emotional understanding in young children. All of these skills make up the larger concept of empathy. Young children with higher levels of empathy are likely to have more success in making friends, showing compassion, and staying healthy into their teen and adult years.

References

Adamczyk-Robinette, S. L., Fletcher, A. C., Wright, K. (2002). Understanding the authoritative parenting—early adolescent tobacco use link: The mediating role of peer tobacco use. *Journal of Youth and Adolescence, 31*, 311-318.

Anderson, K. L., & Olson, M. R. (2006). The value of a dog in a classroom of children with severe emotional disorders. *Anthrozoos, 19*, 35-49. Retrieved from http://www.ingentaconnect.com/content/berg/anthroz/2006/

Antonioli, C., & Reveley, M.A. (2005). Randomised controlled trial of animal facilitated therapy with dolphins in the treatment of depression. *BMJ, 331*, Retrieved from Academic OneFile database

Alberto, P. A., & Troutman, A. C. (2009). *Applied Behavioral Analysis for Teachers*. Upper Saddle River, NJ: Pearson.

Ascione, F. R., & Weber, C. V. (1996). Children's attitudes about the humane treatment of animals and empathy: One year follow-up of a school-based intervention. *Anthrozoos, 9*, 188-195.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Banks, M. R., & Banks, W. A. (2002). The effects of animal-assisted therapy on loneliness in an elderly population in long-term care facilities. *Journal of Gerontology, 57A*(7), 428-432.

Bardill, N., & Hutchinson, S. (1997). Animal-assisted therapy with hospitalized adolescents. *Journal of Child and Adolescent Psychiatric Nursing, 10*(1), 17-24, Retrieved from Academic OneFile database

Baumrind, D. (1996). The discipline controversy revisited. *Family Relations*, *45,* 405-414.

Beck, A. M., & Katcher, A. H. (2003). Future directions in human-animal bond research. *American Behavioral Scientist, 47*(1), 79-93. doi: 10.1177/0002764203255214

Berget, B., Ekeberg, O., & Braastad, B. O. (2008). Animal-assisted therapy with farm animals for persons with psychiatric disorders: Effects on self-efficacy, coping ability, and quality of life, a randomized controlled trial. *Clinical Practice and Epidemiology in Mental Health, 4*(9), doi: 10.1186/1745-0179-4-9

Borke, H. (1971). Interpersonal perception of young children: Egocentrism or empathy? *Developmental Psychology*, *5*(2), 263-269.

Bowlby, J. (1982). *Attachment*. New York, NY: Basic Books.

Breitenbach, E., Stumpf, E., Fersen, L. V., & Ebert, H. (2009). Dolphin-assisted therapy: Changes in interaction and communication between children with severe disabilities and their caregivers. Anthrozoos, *22*, 277-289. doi: 10.2752/175303709X457612

Bryant, B. K. (1982). An index of empathy for children and adolescents. *Child Development, 53*(2), 413-425. Retrieved from: http://www.jstor.org/action/showPublication?journalCode=childdevelopment

Cherniss, C., & Goleman, D. (Ed.). (2001). *The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups, and organizations*. San Francisco, CA: John Wiley and Sons.

Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology*, *32*, 988-998.

Colombo, G., Dello Buono, M., Smania, K., Raviola, R., & De Leo, D. (2006). Pet therapy and institutionalized elderly: A study on 144 cognitively unimpaired subjects. *Archives of Gerontology and Geriatrics, 42*, 207-216. doi: 10.1016/j.archger.2005.06.011

Cooper, J. L., Davidson, L. L., Higgins, L. B., & Isakson, E. (2009). *Indicators for social-emotional development in early childhood: A guide for local stakeholders*. Retrieved from National Center for Children in Poverty website: http://www.nccp.org/publications/pub_901.html

Dadds, M. R., Hunter, K., Hawes, D. J., Frost, A. D. J., Vassalo, S., Bunn, P., Merz, S., & El Masry, Y. (2008). A measure of cognitive and affective empathy in children using parent ratings. *Child Psychiatry and Human Development, 39*, 111-112. doi: 10.1007/s10578-007-0075-4

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10*, 85-104.

De Wied, M., Gispen-de Wied, C., & Van Boxtel, A. (2010). Empathy dysfunction in children and adolescents with disruptive behavior disorders. *European Journal of Pharmacology*. *626*, 97-103. doi:10.1016/j.ejphar.2009.10.016

Delta Society. *Animal-assisted therapy (AAT) Applications 1.* Delta Society, 2007.

Delta Society. (1996). *Standards of practice for animal-assisted activities and therapy.* Delta Society.

Duppong-Hurley, K., Trout, A., Chmelka, M. B., Burns, B. J., Epstein, M. H., Thompson, R. W., & Daly, D. L. (2009). The changing mental health needs of youth admitted to residential group home care. *Journal of Emotional and Behavioral Disorders*, *17*(3), 164-176. doi: 10.1177/1063426608330791

Eisenberg, N., Fabes, R. A., Murphy, B., Karbon, M., Smith, M., & Maszk, P. (1996). The relations of children's dispositional empathy-related responding to their emotionality, regulation, and social functioning. *Developmental Psychology*, *32*(2), 195-209.

Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin, 101*(1), 91-119.

Erikson, E. H. (1968). *Identity, youth, and crisis*. New York, NY: W.W. Norton & Company.

Ewing, C. A., MacDonald, P. M., Taylor, M., & Bowers, M. J. (2007). Equine-facilitated learning for youths with severe emotional disorders: A quantitative and qualitative study. *Child Youth Care Forum, 36*. 59-72. doi: 10.1007/s10566-006-9031-x

Fine, A. H. (Ed.). (2006). *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice*. San Diego, CA: Elsevier.

Freud, S. (1949). *An outline of psychoanalysis*. New York, NY: W.W. Norton & Company.

Frey, K. S., Hirschstein, M. K., & Guzzo, B. A. (2000). Second step: Preventing aggression by promoting social competence. *Journal of Emotional and Behavioral Disorders*, *8*(2), 102-113. Retrieved from

https://login.libpdb.d.umn.edu:2443/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=3183611&site=ehost-live

Friedmann, E., Katcher, A. H., Thomas, S. A., Lynch, J. J., & Messent, P. R. (1983). Social interaction and blood pressure. Influence of animal companions. *Journal of Nervous and Mental Disease, 171*(8), 461-465.

Friesen, L. (2010). Exploring animal-assisted programs with children in school and therapeutic contexts. *Early Childhood Education Journal, 37*, 261-267. doi: 10.1007/s10643-009-0349-5

Gee, N. R., Harris, S. L., & Johnson, K. L. (2007). The role of therapy dogs in speed and accuracy to complete motor skills tasks for preschool children. *Anthrozoos, 20*, 375-386. doi: 10.2752/089279307X245509

Gravetter, F. J., & Forzano, L. B. (2009). *Research methods for the behavioral sciences*. United States of America: Wadsworth.

Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2009). *Exceptional learners: An introduction to special education* (11th ed.). United States of America: Pearson.

Hastings, P. D., Zahn-Waxler, C., Robinson, J., Usher, B., & Bridges, D. (2000). The development of concern for others in children with behavior problems. *Developmental Psychology, 36*, 531-546. doi: 10.1037//0O12-1649.36.5.531

Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *Journal of Environmental Education*. *18*(2). 1-8.

Hines, L. M. (2003). Historical perspectives on the human-animal bond. *American Behavioral Scientist, 47(*7), 7-15. doi: 10.1177/0002764203255206

Hoagwood, K. E., Olin, S. S., Kerker, B. D., Kratochwill, T. R., Crowe, M., & Saka, N. (2007). Empirically based school interventions targeted at academic and mental health functioning. *Journal of Emotional and Behavioral Disorders*, *15*(2), 66-92. Retrieved from Academic Search Premier Database

Iovannone, R., Greenbaum, P. E., Wang, W., Kincaid, D., Dunlap, G., & Strain, P. (2009). Randomized controlled trial of the prevent-teach-reinforce (PTR) tertiary intervention for students with behavior problems. *Journal of Emotional and Behavioral Disorders*, *17*(4), 213-225. doi: 10.1177/1063426609337389

Jalongo, M. R., Astorino, T., & Bomboy, N. (2004). Canine visitors: The influence of therapy dogs on young children's learning and well-being in classrooms and hospitals. *Early Childhood Education Journal, 32*, 9-16. Retrieved from Academic Search Premier Database

Johnson, R. A., Odendaal, J. S. J., & Meadows, R. L. (2002). Animal-assisted interventions research: Issues and answers. *Western Journal of Nursing Research, 24*(4), 422-440. doi: 10.1177/01945902024004009

Kahn, Jr., P. H., & Kellert, S.R. (Eds.). (2002). *Children and Nature*. Cambridge, MA: The MIT Press.

Kaminski, M., Pellino, T., & Wish, J. (2002). Play and pets: The physical and emotional impact of child-life and pet therapy on hospitalized children. *Children's Health Care, 31*(4), 321-335, Retrieved from Academic Search Premier.

Kauffman, J. M., & Landrum, T. J. (2009) *Characteristics of emotional and behavioral disorders of children and youth* (9th ed.). Upper Saddle River, NJ: Prentice Hall.

Kestenbaum, R., Farber, E. A., & Sroufe, A. L. (1989). Individual differences in empathy among preschoolers: Relation to attachment history. *New Directions for Child and Adolescent Development, 44*, 51-64.

Kogan, L. R., Granger, B. P., Fitchett, J. A., Helmer, K. A., & Young, K. J. (1999). The human-animal team approach for children with emotional disorders: Two case studies. *Child and Youth Care Forum, 28*(2), 105-121.

Krskova, L., Talarovicova, A., & Olexova, L. (2010). Guinea pigs— The "small great" therapist for autistic children, or: Do guinea pigs have positive effects on autistic child social behavior?. *Society and Animals, 18(*2), 139-151. doi: 10.1163/156853010X491999

Landy, S. (2009). *Pathways to competence.* Baltimore, MD: Paul H. Brookes.

Le Roux, M. C., & Kemp, R. (2009). Effect of a companion dog on depression and anxiety levels of elderly residents in a long-term care facility. *Psychogeriatrics, 9*, 23-26. doi: 10.1111/j.1479-8301.2009.00268.x

Lefkowitz, C., Paharia, I., Prout, M., Debiak, D., & Bleiberg, J. (2005). Animal-assisted prolonged exposure: A treatment for survivors of sexual assault suffering posttraumatic stress disorder. *Society and Animals, 13*(4), 275-295, doi: 10.1163/156853005774653654

Levinson, B. M., & Mallon, G. P. (1997). *Pet-oriented child psychotherapy*. Springfield, IL: Charles C. Thomas.

Limond, J. A., Bradshaw, J. W. S., & Cormack, K. F. M. (1997). Behavior of children with learning disabilities interacting with a therapy dog. *Anthrozoos*, *10*, 84-89, Retrieved from http://www.ingentaconnect.com/content/berg/anthroz/1997/00000010/F0020002/art00005

Macauley, B. L. (2006). Animal-assisted therapy for persons with aphasia: A pilot study. *Journal of Rehabilitation Research and Development, 43*(3), 357-366. doi: 10.1682/JRRD.2005.01.0027

Macauley, B. L., & Gutierrez, K. M. (2004). The effectiveness of hippotherapy for children with language-learning disabilities. *Communication Disorders Quarterly, 25*(4), 205-217. doi: 10.1177/15257401040250040501

Mallon, G. P. (1994). Cow as co-therapist: Utilization of farm animals as therapeutic aids with children in residential treatment. *Child and Adolescent Social Work Journal*, *11*, 455-474.

Mallon, G. P. (1994). Some of our best therapists are dogs. *Child and Youth Care Forum, 23*(2), 89-101.

Marino, L., & Lilienfeld, S. O. (2007). Dolphin-assisted therapy: More flawed data and more flawed conclusions. *Anthrozoos, 20*, 239-249. doi: 10.2752/089279307X224782

McGuffin, P., & Thapar, A. (1997). Genetic basis for bad behavior in adolescents. *Lancet*, *350,* 411-412.

Martin, F., & Farnum, J. (2002). Animal-assisted therapy for children with pervasive developmental disorders. *Western Journal of Nursing Research, 24*(6), 657-670. doi: 10.1177/019394502320555403

Melson, G. F. (2003). Child development and the human-companion animal bond. *American Behavioral Scientist, 47*(1), 31-39. doi: 10.1177/0002764203255210

Merrell, K. W. (2003). *Preschool and Kindergarten Behavior Scales - Second Edition*. Austin, TX: PRO-ED.

Minatrea, N. B., & Wesley, M. C. (2008). Reality therapy goes to the dogs. *International Journal of Reality Therapy, 28*(1), 69-77, Retrieved from Academic Search Premier database.

Mind your brain, Inc. (2008). *Mindsight institute- About us.* Retrieved from: http://mindsightinstitute.com/about_us/mission/

Morrison, M. L. (2007). Health benefits of animal-assisted interventions. *Complementary Health Practice Review, 12*(1), 51-62. doi: 10.1177/1533210107302397

Nimer, J., & Lundahl, B. (2007). Animal assisted therapy: A meta-analysis. *Anthrozoos, 20*, 225-238. doi: 10.2752/089279307X224773

Neill, J. (2008, Jan 20). *What is outdoor education? Definition (definitions)*. Retrieved from http://wilderdom.com/definitions/definitions.html#Donaldson1958

Odendaal, J. S. J. (2000). Animal-assisted therapy-- Magic or medicine? *Journal of Psychosomatic Research, 49*, 275-280. doi:10.1016/S0022-3999(00)00183-5

Pacer Center, Inc., (2010). What is an emotional or behavioral disorder? Retrieved from http://www.pacer.org/c3/curriculum/session6/handouts/What%20is%20an%20Emotional%20or%20Behavioral%20Disorder.pdf

Parish-Plass, N. (2008). Animal-assisted therapy with children suffering from insecure attachment due to abuse and neglect: A method to lower the risk of intergenerational transmission of abuse? *Clinical Child Psychology and Psychiatry, 13*(1), 7-30. doi: 10.1177/1359104507086338

Poresky, R. H., (1990). The young children's empathy measure: Reliability, validity and effects of companion animal bonding. *Psychological Reports*, *66*, 931-936.

Priest, S. (1986). Redefining outdoor education: A matter of many relationships. *Journal of Environmental Education*, *17*(3), 13-15.

Prothmann, A., Bienert, M., & Ettrich, C. (2006). Dogs in child psychotherapy: Effects on state of mind. *Anthrozoos, 19*, 265-277. Retrieved from http://www.ingentaconnect.com/content/berg/anthroz/2006/

Ratliffe, K. T., & Sanekane, C. (2009). Equine-assisted therapy: Complementary medicine or not?. *Australian Journal of Outdoor Education, 13*(2), 33-43. Retrieved from Academic OneFile database.

Reichert, E. (1998). Individual counseling for sexually abused children: A role for animals and storytelling. *Child and Adolescent Social Work Journal, 15*(3), 177-185. Retrieved from Academic Search Premier database.

Richeson, N. E. (2003). Effects of animal-assisted therapy on agitated behaviors and social interactions of older adults with dementia. *American Journal of Alzheimer's Disease and Other Dimentias, 18*(6), 353-358. doi: 10.1177/153331750301800610

Schultz, P. W. (2000). Empathizing with nature: The effects of perspective taking on concern for environmental issues. *Journal of Social Issues, 56*(3), 391-406.

Shaffer, D. R. (2005). *Social and personality development.* Belmont, CA: Thomson Wadsworth.

Siegel, D. J. (1999). *The developing mind*. New York, NY: The Guilford Press.

Sobo, E. J., Eng, B., & Kassity-Krich, N. (2006). Canine visitation (pet) therapy. *Journal of Holistic Nursing, 24*(1), 51-57. Retrieved from http://jhn.sagepub.com/cgi/content/abstract/24/1/51

Skinner, B. F. (1974). *About behaviorism*. New York, NY: Random House.

Smith, A. (2006). Cognitive empathy and emotional empathy in human behavior and evolution. *The Psychological Record, 56*, 3-21.

Smucker, K. S., Kauffman, J. M., & Ball, D. W. (1996). School-related problems of special education foster care students with emotional or behavioral disorders: Comparison to other groups. *Journal of Emotional and Behavioral Disorders*, *4*, 30-39.

Souter, M. A., & Miller, M. D. (2007). Do animal-assisted activities effectively treat depression? A meta-analysis. *Anthrozoos, 20*, 167-180. doi: 10.2752/175303707X207954

Sterzer, P., Stadler, C., Poustka, F., & Kleinschmidt, A. (2007). A structural neural deficit in adolescents with conduct disorder and its association with lack of empathy. *NeuroImage*, *37,* 335-342. doi: 10.1016/j.neuroimage.2007.04.043

Strimple, E. O. (2003). A history of prison inmate-animal interaction programs. *American Behavioral Scientist, 47*(1), 70-78. doi: 10.1177/0002764203255212

The University of Maine Center for Community Inclusion and Disability Studies. (n.d.). *Friends & feelings: Social-emotional development in young children tipsheet*. Retrieved from http://www.ccids.umaine.edu/ec/growingideas/socemotip.htm

Triebenbacher, S. L. (1998). Pets as transitional objects: Their role in children's emotional development. *Psychological Reports, 82*(1), 191-200.

U.S. Department of Education. (2005). *27th annual report to Congress on implementation of the Individuals with Disabilities Education Act*. Washington, DC: Author.

Vaden-Kiernan, N., Ialongo, S., Pearson, J., & Kellam, S. (1995). Household family structure and children's aggressive behavior: A longitudinal study of urban elementary school children. *Journal of Abnormal Child Psychology, 23,* 553-568.

Van Bockern, S. (2006). Soul-filled teaching and learning. *Reclaiming Children and Youth*, *14*(4), 218-222.

Violence Institute of New Jersey. (2007, Feb). *Preschool and kindergarten behavior scales- Second edition.* Retrieved from http://vinst.umdnj.edu/VAID/TestReport.asp?Code=PKBS

Walker, H. M., Seeley, J. R., Small, J., Severson, H. H., Graham, B. A., Feil, G. E., Serna, L., Golly, A. M., & Forness, S. R. (2009). A randomized controlled trial of the first step to success early intervention: Demonstration of program efficacy outcomes in a diverse, urban school district. *Journal of Emotional and Behavioral Disorders*, *17*(4), 197-212. doi: 10.1177/1063426609341645

Walters Esteves, S., & Stokes, T. (2008). Social effects of a dog's presence on children with disabilities. *Anthrozoos, 21*, 5-15. doi: 10.2752/089279308X274029

Webster-Stratton, C., & Reid, M. J. (2003). Treating conduct problems and strengthening social and emotional competence in young children: The dina dinosaur treatment program. *Journal of Emotional and Behavioral Disorders*, *11*(3), 130-143. Retrieved from Academic Search Premier Database

Wesley, M. C., Minatrea, N. B., & Watson, J. C. (2009). Animal-assisted therapy in the treatment of substance dependence. *Anthrozoos, 22*, 137-148. doi: 10.2752/175303709X434167

Woolf, A. (2008). Better play times training—theory and practice in an EBD primary school. *Emotional and Behavioral Difficulties*, *13*(1), 49-62. doi: 10.1080/13632750701814682

Appendices

Appendix A

UNIVERSITY OF MINNESOTA

Duluth Campus

CENTER FOR ENVIRONMENTAL EDUCATION
Department of Education
Health, Physical Education & Recreation
Outdoor Program

College of Education and Human Service Professions

107 Sports & Health Center
1216 Ordean Court
Duluth, Minnesota 55812-3032

218-726-8677
Fax: 218-726-6243
E-mail: ceed@d.umn.edu
www.d.umn.edu/ceed/

Adapted Bryant Index of Empathy

Child's ID Number: 01 02 03 04 05 06 07 08 09 10

Please listen to each statement and decide how well it describes you. *Circle true or false for each statement.* Do not leave any statement unanswered.

1. I get upset when I see an animal being hurt.....**True False**

2. It's silly to treat goats and llamas as though they have feelings like people.....**True False**

3. It's hard for me to know what an animal is feeling. .....**True False**

4. It's silly to hug an animal. .....**True False**

5. I get upset when I see another boy or girl being hurt. .....**True False**

Complete confidentiality is ensured. No one, with the exception of the researcher, will see which child is associated with this empathy measure. Adapted from Bryant's Index of Empathy, 1982

Appendix B

Name: …… Bryant's Index
Class: …….

Please read each statement and decide how well it describes you. *Circle true or false for each statement.* Do not leave any statement unrated.

1. It makes me sad to see a girl who can't find anyone to play with…...**True** **False**
2. People who kiss and hug in public are silly……**True** **False**
3. Boys who cry because they are happy are silly……..**True** **False**
4. I really like to watch people open presents, even when I don't get a present myself……**True** **False**
5. Seeing a boy who is crying makes me feel like crying……**True** **False**
6. I get upset when I see a girl being hurt……**True** **False**
7. Even when I don't know why someone is laughing, I laugh too…….**True** **False**
8. Sometimes I cry when I watch TV……**True** **False**
9. Girls who cry because they are happy are silly……...**True** **False**
10. It is hard for me to see why someone else gets upset……**True** **False**
11. I get upset when I see an animal being hurt……..**True** **False**
12. It makes me sad to see a boy who can't find anyone to play with **True** **False**
13. Some songs make me so sad I feel like crying…….. **True** **False**
14. I get upset when I see a boy being hurt…….. **True** **False**
15. Grown-ups sometimes cry even when they have nothing to be sad about……**True** **False**
16. It's silly to treat dogs and cats as though they have feelings like people……**True** **False**
17. I get mad when I see a classmate pretending to need help from the teacher all the time……**True** **False**
18. Kids who have no friends probably don't want any……...**True** **False**
19. Seeing a girl who is crying makes me feel like crying……..**True** **False**
20. I think it is funny that some people cry during a sad movie or while reading a sad book……**True** **False**
21. I am able to eat all my cookies even when I see someone looking at me wanting one…….. **True** **False**
22. I don't feel upset when I see a classmate being punished by a teacher for not obeying school rules……**True** **False**

Appendix C

UNIVERSITY OF MINNESOTA

Duluth Campus

CENTER FOR ENVIRONMENTAL EDUCATION
Department of Education
Health, Physical Education & Recreation
Outdoor Program

College of Education and Human Service Professions

107 Sports & Health Center
1216 Ordean Court
Duluth, Minnesota 55812-3032

218-726-8677
Fax: 218-726-6243
E-mail: ceed@d.umn.edu
www.d.umn.edu/ceed/

Adapted Griffeth Empathy Measure- Parent Report

Child's ID Number: 01 02 03 04 05 06 07 08 09 10

Completed by: □ Mother □ Father □ Other ……

Please read each statement below and indicate the extent to which you agree or disagree. *Mark your answers by placing a cross on the appropriate point on the line*. Do not leave any statement unanswered.

1. My child gets upset when he/she sees an animal being hurt.

Strongly disagree — Strongly agree

I	I	I	I	I	I	I	I	I
-4	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**

2. My child treats goats and llamas as though they have feelings like people.

Strongly disagree — Strongly agree

I	I	I	I	I	I	I	I	I
-4	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**

3. It is hard for my child to know what an animal is feeling (based on body language and other cues).

Strongly disagree — Strongly agree

I	I	I	I	I	I	I	I	I
-4	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**

UNIVERSITY OF MINNESOTA

Duluth Campus

CENTER FOR ENVIRONMENTAL EDUCATION
Department of Education
Health, Physical Education & Recreation
Outdoor Program

College of Education and Human Service Professions

107 Sports & Health Center
1216 Ordean Court
Duluth, Minnesota 55812-3032

218-726-8677
Fax: 218-726-6243
E-mail: ceed@d.umn.edu
www.d.umn.edu/ceed/

4. My child thinks it is silly to hug an animal.

Strongly disagree								Strongly agree
I	I	I	I	I	I	I	I	I
-4	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**

5. My child gets upset when another person is being hurt.

Strongly disagree								Strongly agree
I	I	I	I	I	I	I	I	I
-4	**-3**	**-2**	**-1**	**0**	**+1**	**+2**	**+3**	**+4**

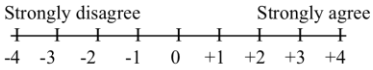
Complete confidentiality is ensured. No one, with the exception of the researcher, will see which child is associated with this empathy measure. Adapted from the Griffeth Empathy Measure- Parent Report, 2006

Appendix D

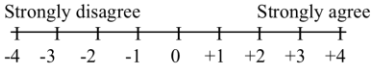
Child's name:…… GEM-PR
Completed by: Mother Father Other …….

Please read each statement below and indicate the extent to which you agree or disagree. *Mark your answers by placing a cross on the appropriate point on the line.* Do not leave any statement unrated.

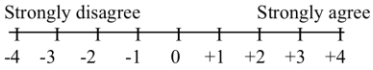
Example: If you somewhat agree with the statement, you would place a cross as indicated below.



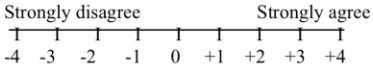
1. **It makes my child sad to see another child who can't find anyone to play with**.



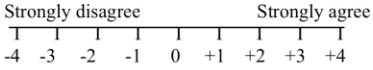
2. **My child treats dogs and cats as though they have feelings like people.**



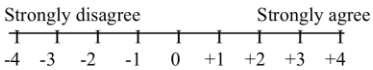
3. **My child reacts badly when he/she sees people kiss and hug in public.**



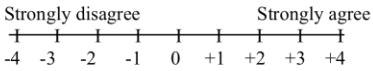
4. **My child feels sorry for another child who is upset.**



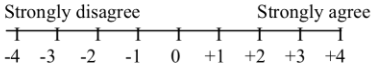
5. **My child becomes sad when other children around him/her are sad.**



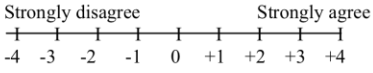
6. **My child doesn't understand why other people cry out of happiness.**



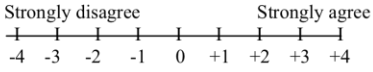
7. **My child gets upset when he/she sees another child being punished for being naughty.**



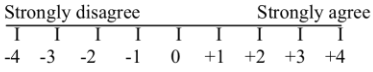
8. **My child seems to react to the moods of people around him/her.**



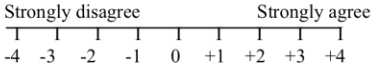
9. **My child gets upset when another person is acting upset.**



10. **My child likes to watch other people open presents, even when he/she doesn't get one themselves.**



11. **Seeing another child who is crying makes my child cry or get upset.**



Child's name:…… GEM-PR
Completed by: Mother Father Other …….

Please read each statement below and indicate the extent to which you agree or disagree. *Mark your answers by placing a cross on the appropriate point on the line*. Do not leave any statement unrated.

12. My child gets upset when he/she sees anther child being hurt.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

13. When I get sad my child doesn't seem to notice.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

14. Seeing another child laugh makes my child laugh.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

15. Sad movies or TV shows make my child sad.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

16. My child becomes nervous when other children around him/her are nervous.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

17. It's hard for my child to understand why someone else gets upset.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

18. My child gets upset when he/she sees an animal being hurt.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

19. My child feels sad for other people who are physically disabled (e.g., in a wheelchair).

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

20. My child rarely understands why other people cry.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

21. My child would eat the last cookie in the cookie jar, even when he/she knows that someone else wants it.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

22. My child acts happy when another person is acting happy.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

23. My child can continue to feel okay even if people around are upset.

Strongly disagree Strongly agree
-4 -3 -2 -1 0 +1 +2 +3 +4

Appendix E

PKBS–2

Summary/Response Form

Preschool and Kindergarten Behavior Scales

Second Edition

Section I. Child Information	Section II. Rater Information
Child's Name _____	Rated By _____
Age: _____ Years _____ Months Sex: M ☐ F ☐	Relationship to Child _____
Is this child receiving services in a school or in a school-related program (e.g., Preschool, Head Start)? _____ Yes _____ No	Date Completed _____
If Yes, what is the name of the school and the program? _____	List the setting(s) in which you observe or interact with this child: _____
If this child has a disability, please list the special education service category or classification: _____	

Section III. Instructions and Scales

Please rate the child on each of the items on pages 2 and 3 of this rating form. Ratings should be based on your observations of this child's behavior **during the past 3 months.** The rating points after each item appear in the following format:

Never	Rarely	Sometimes	Often
0	1	2	3

Never If the child does not exhibit a specified behavior, or if you have not had an opportunity to observe it, circle 0, which indicates *Never.*

Rarely If the child exhibits a specified behavior or characteristic, but only very infrequently, circle 1, which indicates *Rarely.*

Sometimes If the child occasionally exhibits a specified behavior characteristic, circle 2, which indicates *Sometimes.*

Often If the child frequently exhibits a specified behavior or characteristic, circle 3, which indicates *Often.*

Please complete all items and do not circle between numbers.

Additional copies of this form (#10362) may be purchased from PRO-ED, 8700 Shoal Creek Blvd., Austin, TX 78757-6897
800/897-3202, Fax 800/397-7633, www.proedinc.com

Social Skills Scale

	Never	Rarely	Sometimes	Often	Scoring Key		
1. Works or plays independently	0	1	2	3			
2. Is cooperative	0	1	2	3			
3. Smiles and laughs with other children	0	1	2	3			
4. Plays with several different children	0	1	2	3			
5. Tries to understand another child's behavior ("Why are you crying?")	0	1	2	3			
6. Is accepted and liked by other children	0	1	2	3			
7. Follows instructions from adults	0	1	2	3			
8. Attempts new tasks before asking for help	0	1	2	3			
9. Makes friends easily	0	1	2	3			
10. Shows self-control	0	1	2	3			
11. Is invited by other children to play	0	1	2	3			
12. Uses free time in an acceptable way	0	1	2	3			
13. Is able to separate from parent without extreme distress	0	1	2	3			
14. Participates in family or classroom discussions	0	1	2	3			
15. Asks for help from adults when needed	0	1	2	3			
16. Sits and listens when stories are being read	0	1	2	3			
17. Stands up for other children's rights ("That's his!")	0	1	2	3			
18. Adapts well to different environments	0	1	2	3			
19. Has skills or abilities that are admired by peers	0	1	2	3			
20. Comforts other children who are upset	0	1	2	3			
21. Invites other children to play	0	1	2	3			
22. Cleans up his or her messes when asked	0	1	2	3			
23. Follows rules	0	1	2	3			
24. Seeks comfort from an adult when hurt	0	1	2	3			
25. Shares toys and other belongings	0	1	2	3			
26. Stands up for his or her rights	0	1	2	3			
27. Apologizes for accidental behavior that may upset others	0	1	2	3			
28. Gives in or compromises with peers when appropriate	0	1	2	3			
29. Accepts decisions made by adults	0	1	2	3			
30. Takes turns with toys and other objects	0	1	2	3			
31. Is confident in social situations	0	1	2	3			
32. Responds appropriately when corrected	0	1	2	3			
33. Is sensitive to adult problems ("Are you sad?")	0	1	2	3			
34. Shows affection for other children	0	1	2	3			
			Raw Score Totals				
					SC	INT	IND

Problem Behavior Scale

	Never	Rarely	Sometimes	Often	Scoring Key	
1. Acts impulsively without thinking	0	1	2	3		
2. Becomes sick when upset or afraid	0	1	2	3		
3. Teases or makes fun of other children	0	1	2	3		
4. Does not respond to affection from others	0	1	2	3		
5. Clings to parent or caregiver	0	1	2	3		
6. Makes noises that annoy others	0	1	2	3		
7. Has temper outbursts or tantrums	0	1	2	3		
8. Wants all the attention	0	1	2	3		
9. Is anxious or tense	0	1	2	3		
10. Will not share	0	1	2	3		
11. Is physically aggressive (hits, kicks, pushes)	0	1	2	3		
12. Avoids playing with other children	0	1	2	3		
13. Yells or screams when angry	0	1	2	3		
14. Takes things away from other children	0	1	2	3		
15. Has difficulty concentrating or staying on task	0	1	2	3		
16. Disobeys rules	0	1	2	3		
17. Has problems making friends	0	1	2	3		
18. Is afraid or fearful	0	1	2	3		
19. Must have his or her own way	0	1	2	3		
20. Is overly active—unable to sit still	0	1	2	3		
21. Seeks revenge against others	0	1	2	3		
22. Defies parent, teacher, or caregiver	0	1	2	3		
23. Complains of aches, pain, or sickness	0	1	2	3		
24. Resists going to preschool or day care	0	1	2	3		
25. Is restless and fidgety	0	1	2	3		
26. Calls people names	0	1	2	3		
27. Is difficult to comfort when upset	0	1	2	3		
28. Withdraws from the company of others	0	1	2	3		
29. Bullies or intimidates other children	0	1	2	3		
30. Seems unhappy or depressed	0	1	2	3		
31. Has unpredictable behavior	0	1	2	3		
32. Is jealous of other children	0	1	2	3		
33. Acts younger than his or her age	0	1	2	3		
34. Destroys things that belong to others	0	1	2	3		
35. Is moody or temperamental	0	1	2	3		
36. Is overly sensitive to criticism or scolding	0	1	2	3		
37. Whines or complains	0	1	2	3		
38. Gets taken advantage of by other children	0	1	2	3		
39. Disrupts ongoing activities	0	1	2	3		
40. Tells lies	0	1	2	3		
41. Is easily provoked—has a "short fuse"	0	1	2	3		
42. Bothers and annoys other children	0	1	2	3		
			Raw Score Totals			
					EP	IP

Section IV. Additional Information

Please use the following space to provide any additional information about this child that you believe would be useful for understanding his or her behavior.

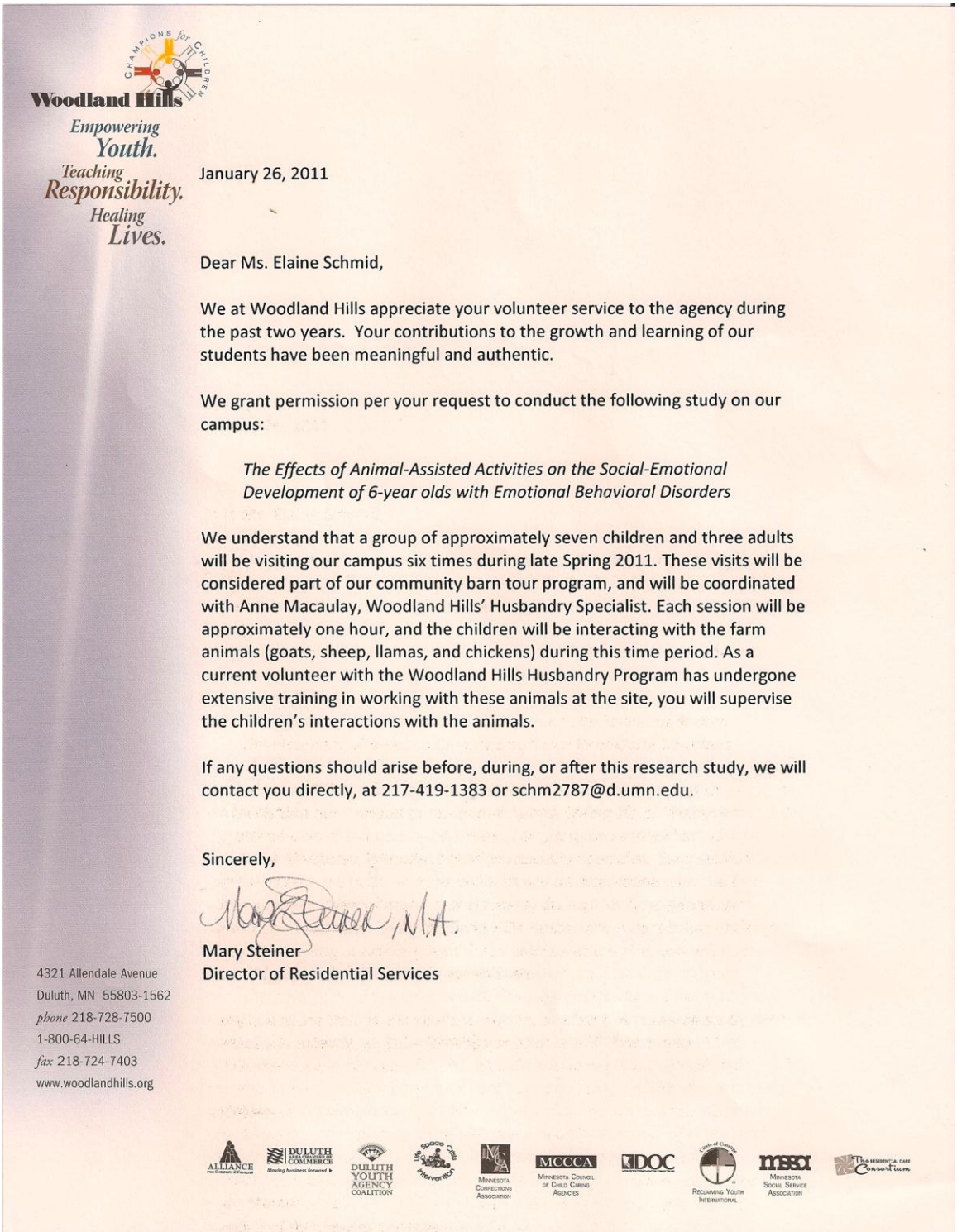
Section V. Score Summary Table

Norm tables used: ☐ **Home Rater** ☐ **School Rater**

PKBS–2 Scales	Raw Score	Standard Score	Percentile Rank	Risk Level (if indicated) Moderate	High
Social Skills Subscale					
Social Cooperation (SC)	_____	_____	_____	☐	☐
Social Interaction (INT)	_____	_____	_____	☐	☐
Social Independence (IND)	_____	_____	_____	☐	☐
Composite Score (sum of subscale standard scores)		_____	_____	☐	☐
Composite Standard Score		_____			
Problem Behavior Subscale					
Externalizing Problems (EP)	_____	_____	_____	☐	☐
Internalizing Problems (IP)	_____	_____	_____	☐	☐
Composite Score (sum of subscale standard scores)		_____	_____	☐	☐
Composite Standard Score		_____			

Higher Social Skills scores indicate greater levels of social adjustment.
Higher Problem Behavior scores indicate greater levels of problem behavior.
All standard scores are based on a normative mean of 100 and a standard deviation of 15.

Appendix F



Woodland Hills
Champions for Children

Empowering Youth.
Teaching Responsibility.
Healing Lives.

January 26, 2011

Dear Ms. Elaine Schmid,

We at Woodland Hills appreciate your volunteer service to the agency during the past two years. Your contributions to the growth and learning of our students have been meaningful and authentic.

We grant permission per your request to conduct the following study on our campus:

The Effects of Animal-Assisted Activities on the Social-Emotional Development of 6-year olds with Emotional Behavioral Disorders

We understand that a group of approximately seven children and three adults will be visiting our campus six times during late Spring 2011. These visits will be considered part of our community barn tour program, and will be coordinated with Anne Macaulay, Woodland Hills' Husbandry Specialist. Each session will be approximately one hour, and the children will be interacting with the farm animals (goats, sheep, llamas, and chickens) during this time period. As a current volunteer with the Woodland Hills Husbandry Program has undergone extensive training in working with these animals at the site, you will supervise the children's interactions with the animals.

If any questions should arise before, during, or after this research study, we will contact you directly, at 217-419-1383 or schm2787@d.umn.edu.

Sincerely,

Mary Steiner, M.A.

Mary Steiner
Director of Residential Services

4321 Allendale Avenue
Duluth, MN 55803-1562
phone 218-728-7500
1-800-64-HILLS
fax 218-724-7403
www.woodlandhills.org

ALLIANCE · DULUTH CHAMBER OF COMMERCE · DULUTH YOUTH AGENCY COALITION · Minnesota Corrections Association · MCCCA Minnesota Council of Child Caring Agencies · DOC · Reclaiming Youth International · MSSA Minnesota Social Service Association · The Residential Care Consortium

Appendix G

BOYS & GIRLS CLUBS
OF THE NORTHLAND

December 13, 2010

Dear Ms. Elaine Schmid,

You have the permission of the Boys and Girls Club to conduct the following study with children who are enrolled in after-school activities at our Lincoln Park location:

The Effects of Animal-Assisted Activities on the Social-Emotional Development of 6-year olds with Emotional Behavioral Disorders

We understand that a group of approximately seven children will be selected to participate in the study based on their regular attendance at the Boys and Girls Club, their diagnosis of EBD, age, and parental involvement. Parents must sign a consent form that will allow their children to participate in the study.

We will provide transportation to and from Woodland Hills for six animal-assisted activity sessions in late Spring 2011. Each session will be approximately one hour, and the children will be interacting with the farm animals (goats, sheep, llamas, and chickens) during this time period. The researcher, Ms. Elaine Schmid, who has had training in working with these animals at the site, will supervise the children's interactions with the animals. Ms. Schmid has also had extensive experience and training in working with children with special needs in a farm setting.

The childrens' empathy will be assessed through self-report, parent-report, and behavioral observations before, during, and after the animal-assisted activities.

We will also provide a staff or volunteer who is qualified to transport the children and also offer any necessary assistance with the children during the session.

If any questions should arise before, during, or after this research study, we will contact Elaine Schmid directly, at 217-419-1383 or schm2787@d.umn.edu.

Sincerely,

Tim Caines, Branch Director

Appendix H

UNIVERSITY OF MINNESOTA

Duluth Campus

CENTER FOR ENVIRONMENTAL EDUCATION
Department of Education
Health, Physical Education & Recreation
Outdoor Program

College of Education and Human Service Professions

107 Sports & Health Center
1216 Ordean Court
Duluth, Minnesota 55812-3032

218-726-8677
Fax: 218-726-6243
E-mail: ceed@d.umn.edu
www.d.umn.edu/ceed/

Consent Form
Effects of Animal Interactions on Young Children's Social Development

Your child is invited to be in a research study, which examines how animal interactions influence the development of empathy in children. Your child was selected as a possible participant because he or she is 6 or 7 years old and regularly attends the Boys and Girls Club at Lincoln Park. We ask that you read this form and ask any questions you may have before allowing your child to be in the study.

Elaine Schmid is in the Department of Health, Physical Education, and Recreation at the University of Minnesota Duluth and will be conducting this study. This completes requirements for her M.Ed. degree. Dr. Ken Gilbertson is supervising the project.

Background Information:
The purpose of this study is:

1. To describe and quantify how animal-assisted activities affect the development of empathy in young children.
2. To offer recommendations to individuals and organizations utilizing animal-assisted activities. These recommendations are intended to enhance the way animal-assisted activities are structured, delivered, and evaluated.

Procedures:
If you allow your child to be in this study, **I would ask your child to do the following things**:

- Participate in six 1-hour sessions of animal-assisted activities at Woodland Hills. The researcher and one staff member will be present during these activities.
- Complete two empathy self-reports (This is a time commitment of approximately 10 minutes per self-report, done at the beginning of the first session and upon completion of the sixth session.)

If you allow your child to be in this study, **I would ask you to do the following things:**

- Encourage your child's participation in every session.

UNIVERSITY OF MINNESOTA

Duluth Campus

CENTER FOR ENVIRONMENTAL EDUCATION
Department of Education
Health, Physical Education & Recreation
Outdoor Program
College of Education and Human Service Professions

107 Sports & Health Center
1216 Ordean Court
Duluth, Minnesota 55812-3032
218-726-8677
Fax: 218-726-6243
E-mail: ceed@d.umn.edu
www.d.umn.edu/ceed/

- Complete two parent-reports describing your child's feelings towards other people and animals. (This is a time commitment of approximately 10 minutes per parent-report, done at the beginning of the first session and upon completion of the sixth session.)
- Allow your child to be videotaped during each session as a way for researchers to observe behaviors.

Risks and Benefits of being in the Study:

The study has several risks:

As with any interaction with an animal there may be the slight risk of harm such as a scratch, nip, or allergic reaction, however, every effort will be made to minimize this possibility by assuring appropriate adult supervision, monitoring of stress to the animal, and appropriate choice of animals included in the activity. A risk management strategy is in place for animal-assisted activities at Woodland Hills. Children will wash hands before and after animal contact and have staff supervision when interacting with animals. A complete copy of the risk management strategy is available to you.

The parent and child self-reports ask for information that could be considered personal and sensitive information. Questions regarding how your child interacts with his or her peers and how he or she feels about people and animals will be asked.

The benefits to participation are:

Your child will have the unique opportunity to gain hands-on experience with farm animals at no additional cost to you.

You will receive a $20 gift card to a local store upon completion of the final parent-report.

The information collected from your child will be contributing to the body of knowledge regarding animal-assisted activities and social-emotional benefits to young children.

Research-Related Injury:

In the event that this research activity results in an injury, treatment will be available, including first aid, emergency treatment and follow-up care as needed. Care for such injuries will be billed in the ordinary manner to you or your insurance company. If you think that you have suffered a research related injury, let the researcher know right away.

UNIVERSITY OF MINNESOTA

Duluth Campus

CENTER FOR ENVIRONMENTAL EDUCATION
Department of Education
Health, Physical Education & Recreation
Outdoor Program

College of Education and Human Service Professions

107 Sports & Health Center
1216 Ordean Court
Duluth, Minnesota 55812-3032

218-726-8677
Fax: 218-726-6243
E-mail: ceed@d.umn.edu
www.d.umn.edu/ceed/

Confidentiality:
The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a participant. Research records will be stored securely and only researchers will have access to the records.

Voluntary Nature of the Study:
Participation in this study is voluntary. Your child's decision whether or not to participate will not affect his or her current or future relations with the University of Minnesota or with the Boys and Girls Club of the Northland. If your child decides to participate, he or she is free to not answer any question or withdraw at any time without affecting those relationships. In addition to your permission, your child will also be asked if he or she would like to take part in this study.

Contacts and Questions:
The researcher conducting this study is Elaine Schmid. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at 217-419-1383 or schm2787@d.umn.edu. You may also contact her advisor, Dr. Ken Gilbertson, at 218-726-6258 or kgilbert@d.umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I give my child consent to participate in the study.

Signature of Parent or Guardian: _____Date: _____

Signature of Investigator: _____Date: _____

Appendix I

Outline for Animal-Assisted Activities			
Activity descriptions are not extremely detailed for a purpose. When working with children and animals, one must be flexible based on the needs of both the children and the animals.			
Week Number	**Session Number**	**Animal Type**	**Activities**
1	1	Goats	Introduction to all the animals at Woodland Hills. Discuss guidelines to follow when interacting with animals. Introduce goats in more depth: names and ages. Let kids pet them after talking about proper touch. Activity about what goats need to be happy and healthy: food, water, shelter, people who care for them, etc: very similar to what they need. Let students physically set up an appropriate environment for a goat (i.e. food, water, bedding)
	2	Goats/Possibly Sheep	Review guidelines to follow when interacting with animals. Take the two dwarf goats for a walk, letting students take turns walking them. Incorporate behaviors and feelings of the goats during the walk, based on how the goats and the students are acting. If sheep cooperate, let the students interact with/pet the sheep briefly. Sheep's needs are similar to goats' needs.
2	3	Rabbits	Review guidelines to follow when interacting with animals. Activity about what rabbits need to be happy and healthy: food, water, shelter, people who care for them, etc: very similar to what they need. Let students touch and feel grain and hay and then have them take turns grooming and brushing the rabbits. Prepare treats for the rabbits and

			feed.
	4	Rabbits	Review guidelines to follow when interacting with animals. Discuss animal behavior. Play a feelings game (matching pictures of animal feelings to pictures of students' feelings). Do rabbit enrichment. Take note of the rabbits' behaviors and compare it to how the students are acting around the rabbits.
3	5	Chickens	Review guidelines to follow when interacting with animals. Chicken activity- *will add more detail soon.*
	6	Llamas	Review guidelines to follow when interacting with animals. Briefly introduce the llamas. Students may be able to groom one of the llamas, depending on the llama's mood. Children can assist the instructor in walking a llama. This is an activity that the instructor will do primarily, but children can help. Conclusion to all 6 sessions: review the activities, say goodbye to the animals for the last time.

Appendix J

Permission Slip-Lincoln Park School Branch

Dear Parent/Guardian,

_____ has been invited to go to **Woodland Hills as part of an animal care experience on May 4, 6,11,13,18 and 20th.** We will be leaving the Club at **4:00** P**M** and will arrive back to the Club around **6:00 PM**. We will be traveling by Club van. If you have any questions you can call Tim Caines at 725- 7706.

Sincerely,

Tim Caines

------sign and return the bottom part-----Please post the top half on your fridge ----------

I give _____my permission to go to Woodland Hills as part of an animal care experience on May 4, 6,11,13,18 and 20th. from 4:00 P.M. to 6:00 PM. I believe all necessary precautions will be taken & appropriate supervision will take place. Beyond that, I do not hold the staff or the Boys & Girls Club of Duluth responsible. I give club staff permission to take necessary action. I understand that my child will follow all Boys & Girls Club of Duluth guidelines.

_____ _____

Parent/guardian Signature Date

Parent Guardian Phone _____

Emergency Contact & Phone _____

Appendix K

Checklist for Observations

Name:_____

Age:_____

Child must meet one or more of these criteria, as determined by social work student and researcher.

_____ An inability to learn that cannot be explained by intellectual, sensory, or health factors.

_____ An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.

_____ Inappropriate types of behavior or feelings under normal circumstances.

_____ A general pervasive mood of unhappiness or depression.

_____ A tendency to develop physical symptoms or fears associated with personal or school problems.

Appendix L

Complete Animal-Assisted Activities Curriculum

- Parent Recruitment Meeting
- Educational Activities for Children
- Parent Wrap-up Meeting

Session Topic: Parent Information

Date and Time: Monday, April 25, 6:30-7:15pm

Location: Boys and Girls Club

Participants Present: Participant #3's mother

Adults (Staff/Researchers) Present: Tim and Elaine

Goals: Parents should be able to explain the basic reason for the research study. They should know what is expected of themselves and their children during the research. Parents will complete the consent form and the Griffeth Empathy Measure.

Materials:

- 10 consent forms
- 10 Griffeth Empathy Measures
- 10 pencils and pens
- Food
- 10 Reminder Slips for the follow-up parent meeting

Plan for Teaching the Goals:

Welcome! My name is Elaine Schmid, and I want to thank you for your interest in my research regarding animal interactions and childrens' development of empathy. I am very excited to be offering this service for your child, at no additional cost to you.

Together, we will go through the consent form, and I will answer any questions you have during this process. [Read through the consent form and answer questions that come up.] Now that we have read the consent form and talked about the details of the study, I would like to answer any questions or address any concerns you may be having.

If you feel comfortable with what the study is going to ask of you and your child, please sign and date the consent form. A copy of this form will be given to you before you leave today. If you decide not to participate, there are no consequences for you or your child. You may leave the blank form with me.

If you have decided to allow your child to participate, please complete a Griffeth Empathy Measure, indicating the quality of and level of empathy your child exhibits on a daily basis.

Please plan to attend the final parent meeting, after your child has participated in the study. This will be on Monday, May 23 from 6:30-7:15 at the Boys and Girls Club.

Plan for Evaluating the Goals:
Ask parents the following questions to assess their understanding of the research process:
What will you and/or your child gain from being involved in this research study?
As the parent of a child involved in this study, what is required of you?
Briefly describe what your child will be asked to do if he or she participates in this study.
Do you or your child receive compensation? If yes, what is the compensation?

Collect consent forms.
Collect Griffeth Empathy Measures.

Session Topic: Introduction to the Project/Goats

Date and Time: Friday, May 6, 4:30-5:30

Location: Boys and Girls Club and Woodland Hills' Barns

Participants Present: Participants 3, 6, 10, and 11

Adults (Staff/Researchers) Present: Amanda, Elaine, and Erik

Goals: Students will be able to describe what they will be doing in the upcoming weeks, related to the research. Students will complete a Bryant's Index of Empathy as a pre-test. Students will be able to list two rules to follow when they are around live animals. Students will respond appropriately to goats' needs when walking them. Students will identify the feelings of animals and treat animals accordingly.

Materials:

- 10 of Bryant's Index of Empathy
- 10 pencils
- Video Camera
- First Aid kit
- Hand Sanitizer
- 10 scenarios, typed out
- 2 collars
- 2 leashes

Plan for Teaching the Goals:

Welcome! My name is Elaine, and I will be your teacher for the Animal Program that you are signed up for. You are signed up for this program because your parent(s) thought that you would be interested in learning about caring for farm animals. In this program, we will be taking 6 field trips to see, learn about, and care for farm animals. You will get to feed, brush, and walk goats, sheep, llamas, and rabbits. Before we start the program, I would like you to answer five questions about your feelings and behaviors. I will also ask you to answer these questions after our 6 field trips. During the field trips, Erik will be video-recording all of us. If anything sounds scary or you are unsure about anything I have asked you to do, please tell me. You will not have to be close to an animal that you think is scary, and I will never ask you to do something unsafe. You do not have to be in this Animal Program if you do not want to be. No one will be mad at you.

Pass out the Bryant's Index of Empathy and read the instructions to the students. Then, proceed with the questions, once they know what they should do. Collect all the papers. Before leaving for Woodland Hills, let the students see the video camera, what it does,

how it works, and answer questions they have about it. Then, make it clear that the video camera is off-limits for them.

Briefly introduce the children to all the animals at Woodland Hills and discuss guidelines to follow when interacting with animals.

- Use calm, quiet voices at all times.
- Do not approach animals who are sleeping or eating.
- If you are putting yourself, another group member, or an animal in danger, you will be asked to sit out for the rest of the session.
- Listen and be respectful towards all staff and children.

Introduce the students to the goats in depth.
Bill- oldest goat- Nubian- 8 years old
Oliver and Charlie- Nigerian Dwarf goats- 2 years old
Walda and Terah- Saanan goats- 3 years old

Let the children have 5-10 minutes to get to know the goats and sheep by petting, after you model appropriate petting.

Take children into the barn to show them the indoor shelter the animals have, as well as what they eat.

Students will each get a scenario of animals in various situations. They need to act out (individually) how they think the animal would feel or act in that situation, and the rest of the group should guess what emotion the student is acting out.

Take Oliver and Charlie for a walk, letting students take turns walking them. Incorporate behaviors and feelings of the goats during the walk, based on how the goats and the students are acting.

Wrap-up the session by reviewing what the students learned and allowing for a little time for students to pet the animals again.

Plan for Evaluating the Goals:
Students will be videotaped and later the researcher will observe each individual child and record the observed behaviors.

Students will submit a completed Bryant's Index of Empathy as a pre-assessment.

Session Topic: Rabbits

Date and Time: Wednesday, May 11, 4:30-5:30

Location: Woodland Hills

Participants Present: Participants 3, 6, and 11

Adults (Staff/Researchers) Present: Steph, Elaine, and Erik

Goals: Students will describe what a rabbit needs to be happy and healthy. Students will identify the feelings of animals and treat animals accordingly.

Materials:

- Video Camera
- First Aid kit
- Hand Sanitizer
- Items that rabbits need: hay, pellets, water bottle, cage, wood to chew on, salt block, toys
- Items that rabbits do not need: random household items
- Grooming brushes
- Rabbit treats

Plan for Teaching the Goals:
Review guidelines to follow when interacting with animals.

Introduce the students to the rabbits in depth.
Rascal and Riley- 4.5 years
Sox- 4 years
Boomer Jr.- 6 years
Larry- Dwarf Hotot- 8 years
Macey- 2.5 years and Otis- 4 years

Let the kids have 5-10 minutes to get to know the rabbits by petting, after you model appropriate petting. (Students will not hold the rabbits.)

Give students a pile of items: some that rabbits need for their care and other items that are random. Have them sort out what rabbits need and talk about each item, asking them why it is an item that rabbits need.

Finally, let students take turns grooming the rabbits and giving the rabbits treats. Wrap-up the session by reviewing what the students learned and allowing for a little time for students to pet the animals again.

Plan for Evaluating the Goals:

Students will be videotaped and later the researcher will observe each individual child and record the observed behaviors.

Session Topic: Rabbits

Date and Time: Friday, May 13, 4:30-5:30

Location: Woodland Hills

Participants Present: Participants 3, 6, and 11

Adults (Staff/Researchers) Present: Steph, Elaine, and Erik

Goals: Students will identify the feelings of animals and treat animals accordingly. Students will create enriching and entertaining games and activities for the rabbits.

Materials:

- Video Camera
- First Aid kit
- Hand Sanitizer
- 5 sets of the matching game
- Rabbit enrichment items: cardboard boxes, paper bags, toilet paper tubes, hay, socks, phone books, towels, etc
- Masking tape

Plan for Teaching the Goals:
Review guidelines to follow when interacting with animals.

Let the kids have 5-10 minutes to pet the rabbits.

Discuss animal behavior by playing a matching game. This can be played like memory, in pairs. Have 10 pairs (10 different emotions) of cards. One card should be a picture of a human expressing an emotion, and the other card should be a picture of an animal expressing the same emotion.

Do rabbit enrichment activities with the rabbits outside of the rabbits' cages. Have the students set up games and activities that they think rabbits would like, according to the needs of rabbits that they learned the previous session. Ideas are TP tubes stuffed with hay, a rabbit "condo" with boxes and bags, and "digging stations" with towels and phone books.

Wrap-up the session by reviewing what the students learned and allowing for a little time for students to pet the animals again.

Plan for Evaluating the Goals:

Students will be videotaped and later the researcher will observe each individual child and record the observed behaviors.

Session Topic: Chickens

Date and Time: Wednesday, May 18, 4:30-5:30

Location: Woodland Hills

Participants Present: Participants 3 and 10

Adults (Staff/Researchers) Present: Pat, Elaine, and Erik

Goals: Students will identify the feelings of animals and treat animals accordingly. Students will describe what a chicken needs to be happy and healthy.

Materials:

- Video Camera
- First Aid kit
- Hand Sanitizer
- 10 brown paper bags
- 10 items that chickens need (greens, carrots, grain, grit, water, food dish, wood shavings, plastic heart, wooden piece to represent a roost, and a piece of fence)
- Treats for the chickens

Plan for Teaching the Goals:
Review guidelines to follow when interacting with animals.

Introduce the students to the chickens in more depth—tell them the names of some of them and show them how to pick them up and pet them. Let the students look for and collect any eggs.

Let the kids have 5-10 minutes to get to know the chickens by petting, after you model appropriate petting. (Students will not hold the chickens.)

Play the "Secret Sacks" game to teach students what chickens need to be happy and healthy. Before students arrive, put 10 different items (greens, carrots, grain, grit, water, food dish, wood shavings, plastic heart, wooden piece to represent a roost, and a piece of fence) that chickens need in 10 different brown paper bags. The students' jobs are to each identify what is in their bag WITHOUT looking. They can only feel the item and then decide what it is. Once they think they know what their item is, they should come back in a circle and all share what chickens need.

Have students look around the chickens' pen and make sure they have everything they need. They can spread more wood shavings on the floor and feed the chickens some treats, like grass and vegetables.

Wrap-up the session by reviewing what the students learned and allowing for a little time for students to pet the animals again.

Plan for Evaluating the Goals:
Students will be videotaped and later the researcher will observe each individual child and record the observed behaviors.

Session Topic: Goodbyes to Animals

Date and Time: Friday, May 20, 4:30-5:30

Location: Woodland Hills and Boys and Girls Club

Participants Present: Participants 3, 6, and 10

Adults (Staff/Researchers) Present: Steph, Elaine, and Erik

Goals: Students will identify the feelings of animals and treat animals accordingly. Students will care for the animals by walking and grooming them. Students will complete a Bryant's Index of Empathy as a post-test.

Materials:

- Video Camera
- First Aid kit
- Hand Sanitizer
- Grooming brushes
- 1 halter
- 2 lead ropes

Plan for Teaching the Goals:
Review guidelines to follow when interacting with animals.

Students will groom the goats and miniature horse. Students can also assist the instructor in walking the horse. This is an activity that the instructor will do primarily, but the students can help. The instructor will keep a hold of one lead rope, while a student can hold another lead rope attached to the halter.

Wrap-up all 5 sessions and let students say their final goodbyes to individual animals. Take a photo of each participant with his or her favorite animal.

Once back at the club, have students complete the Bryant Index of Empathy as a post-test. Thank the students for their time and say good-byes.

Plan for Evaluating the Goals:
Children will be videotaped and later the researcher will observe each individual child and record the observed behaviors.

Children will complete the Bryant's Index of Empathy as a post-assessment of their learning over the 6 sessions.

Session Topic: Parent Wrap-Up

Date and Time: Monday, May 23, 6:30-7:15pm

Location: Boys and Girls Club

Participants Present: None

Adults (Staff/Researchers) Present: Tim and Elaine

Goals: Parents will describe their child's responses to the six sessions of animal-assisted activities. Parents will provide feedback on the process.

Materials:

- 10 Griffeth Empathy Measures
- 10 pencils and pens
- Food
- 4 $20 Super One gift cards

Plan for Teaching the Goals:
This session will be an open discussion for the parents and researcher to discuss the entire research process. If parents are interested in the research results, they can provide contact information, and the researcher will pass on the results.

Parents will be asked to complete the final empathy measure for their child. Upon completion of the empathy measure, they will each receive a $20 gift card to Super One. Thank the parents for their time and say good-byes.

Plan for Evaluating the Goals:
Parents will complete the Griffeth Empathy Measure.