

Effects of Animal-Assisted Therapy on a Student with an Emotional/Behavioral Disorder

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Abstract

This single-subject action research project examines the effects of animal-assisted therapy on the self-esteem and classroom behaviors of a student with an emotional/behavioral disorder. An 18-year-old male attending a special education school in northeastern St. Paul participated in animal-assisted therapy research for four weeks. Quantitative data were collected from the Rosenberg Self-Esteem Scale, the Coopersmith Self-Esteem Inventory and classroom behavior tracking sheets. The findings of this research reveal an increase in the student's self-esteem and an improvement in the student's classroom behaviors. The results of this study provide important evidence for teachers of students with emotional/behavioral disorders to further consider animal-assisted therapy as a tool to improve the social skills and self-esteem of students.

Effects of Animal-Assisted Therapy on a Student with an Emotional/Behavioral Disorder

“Intimacy with a beloved pet or special animal makes millions of people feel as though they win the lottery every day” (Becker & Morton, 2002, p. ix). It has been the opinion of many professionals that animals have the power to heal the human spirit through unconditional love and unending devotion. Yet, it seems serious research providing empirical evidence into the effects of animal-assisted therapy on patients and other human subjects has just begun.

Positive interaction with animals is not a new phenomenon. It has been a part of Greek, Egyptian, Roman and many eastern and western cultures for thousands of years. The first documented case of accidental animal-assisted therapy is credited to child psychologist, Boris Levinson. In 1962 he discovered that he was able to make significant progress with a disturbed child when his dog Jingles attended therapy sessions (Levinson, 1969). Since Levinson's discovery, other psychologists, veterinarians, doctors, teachers and dog owners have experienced the human-animal bond and have recognized that it is relevant in the treatment of patients and students who are in need of physical and emotional healing. Spadafori (2005) believed dogs have the ability to touch people on a level that provides emotional support. “No one who has ever watched one [therapy dog] work can doubt the difference they make” (Spadafori, 2005, p. H5).

Can a wet nose bring joy? Can a lick heal the soul? Can the touch of soft fur be calming? Can gentle loving eyes ease fear? In a 2005 study by the American Heart Association, researchers found that animal-assisted therapy can reduce blood pressure in both healthy and hypertensive patients and reduce anxiety in hospitalized patients. They concluded that even short-term exposure to dogs has beneficial physiological and psychosocial effects (American Heart Association, 2005).

In her book, *Why the Wild Things Are – Animals in the Lives of Children*, Melson (2001) documented communications between children and animals in many settings. While observing the behaviors of animals and children's interactions with the animals, she noted that social connections are a key coping resource. These social connections are of great importance to those who study how a child's sense of self grows. In fact, a child's self-esteem emerges through interactions with others.

Can relationships with dogs be generalized to human peers? Piaget's theory of cognition suggests that children see animals as peers (Piaget, 1929) and Melson (2001) suggested, "Play with pets might well have the 'horizontal' and symbolic properties shown to be developmentally beneficial" (p. 11). Furthermore, while examining the role of dogs in correctional facilities, Dalton (2001) interviewed male juveniles who received weekly visits from dogs. One respondent stated that he felt his self-confidence was higher and that he was able to deal with his emotions in more positive ways. He also believed that the therapy was instrumental in changing his desire to care for others.

As recognized by many health care professionals, children with emotional/behavioral disorders require emotional support as part of their therapy. A dog can provide assistance to children by helping them learn confidence, trust, responsibility, patience, and other skills that will help them in the future (Dalton, 2001). Chandler (2001) agreed that animals offer nurturance through unconditional acceptance and interaction during therapy. This research provides further evidence of the benefits of animal-assisted therapy to students with emotional/behavioral disorders.

Statement of the Problem

The purpose of this study was to examine the effects of animal-assisted therapy on the self-esteem and classroom behaviors of a male student with an emotional/behavioral disorder. The researcher recognized an opportunity to provide additional evidence for or against animals--in this case a dog--in an academic setting.

Research Questions

The questions guiding this research were:

1. How does animal-assisted therapy effect the self-esteem of a student with an emotional/behavioral disorder?
2. How does animal-assisted therapy effect the classroom behaviors of a student with an emotional/behavioral disorder?

Significance of the Study

Animal-assisted therapy has shown positive results in a number of school settings with different populations (Kogan, Granger, Fitchett, Helmer & Young, 1999), and the use of animal-assisted therapy is shown to be successful in increasing self-esteem, socialization, and problem-solving skills with children who have emotional/behavioral disorders as well as children who have been abused or neglected (Reichert, 1998). As a result of these positive outcomes, animal-assisted therapy has become more popular in recent years. Kogan et al. (1999) suggested that animal-assisted therapy has promising potential as a resource for teachers of students with emotional/behavioral disorders. Despite the positive results, there is little actual research to

substantiate the use of animal-assisted therapy. The results of this study provide important evidence for teachers of students with emotional/behavioral disorders to further consider animal-assisted therapy as a tool to improve the social skills and self-esteem of students.

Definition of Terms

The following definitions will provide the reader a clear understanding of the terminology used in this research. The researcher has created the definition if no citation is provided.

Academic setting. Academic setting refers to a structured educational environment where students are engaged in learning while guided by a certified teacher.

Animal-assisted therapy (AAT). Animal-assisted therapy is defined as a goal-directed intervention, which uses the human-animal bond to facilitate progress toward a desired therapeutic outcome. (Barker & Dawson, 1998; Kogan et al. 1999; Thigpen, Ellis & Smith, 2005; Wilson, n.d.).

Emotional/ behavioral disorder (EBD). Emotional/behavioral disorders are defined as “marked and persistent characteristics having to do with the following:

1. School learning problems.
2. Unsatisfactory interpersonal relationships.
3. Inappropriate behavior and feelings.
4. Pervasive unhappiness or depression.
5. Physical symptoms or fears associated with school or personal problems” (Kauffman, 2005, p. 21).

Human-animal bond. The human-animal bond is defined as a mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors that are essential to the health and well being of both. This includes, but is not limited to, emotional, psychological and physical interactions of people, other animals, and the environment (AVMA, 1998).

Individualized Education Plan (IEP). An Individualized Education Plan is a written plan developed to meet the special learning needs of each student with disabilities (Vaughn, Bos & Schumm, 2006, p 514).

Self-esteem. Self-esteem refers to “a favorable or unfavorable attitude toward self” (Rosenberg, 1965).

Social lubricant. A social lubricant is an instrument that is used to create a more relaxed environment in which social interactions are more comfortable.

Target behavior. A target behavior in behavior modification is an identified behavior to be modified (Kauffman, 2005).

Delimitations

1. This is a case study of one 18-year-old male identified by his Individual Education Plan as having an emotional/behavioral disorder.
2. This study investigated animal-assisted therapy using the same therapy dog each day of the intervention.
3. This study was limited to investigating the effects of animal-assisted therapy on self-esteem and classroom behaviors.

Review of Related Literature

Animal-Assisted Therapy vs. Animal-Assisted Activity

Animal-assisted therapy is defined as a goal-directed intervention, which uses the human-animal bond to facilitate progress toward a desired therapeutic outcome (Barker & Dawson, 1998; Kogan et al., 1999; Thigpen et al., 2005; Wilson, n.d.). Animal-assisted therapy has often proven to be an important catalyst for therapist/patient bonding (Wilson, n.d.). It has also shown to be successful in increasing self-esteem, socialization and problem solving (Kogan et al., 2005), and has improved reading and communication skills (Thigpen et al., 2005).

Animal-assisted therapy is different from animal-assisted activity in that the latter does not include therapeutic goals. Instead, the animal acts as a social lubricant in a variety of settings (Thigpen et al., 2005). Animal-assisted activity is less formal and there is no documentation of the event. It is used as a motivational, educational, and recreational tool to enhance quality of life (Delta Society, n.d.). An example of animal-assisted activity would be a visit to a nursing home by a human-animal team. This study focuses on animal-assisted therapy.

History of Animal-Assisted Therapy: Therapy Dogs

Animal-assisted therapy has a long history. Yet little documentation on its effects has been available until recently. It has only been in the last half of the twentieth century that research and documentation have been conducted on the effects of animal-assisted therapy. Clinical psychologist Boris Levinson was the first to bring attention to the role of animals in therapy when he began to document his clients' interactions with his dog Jingles. He found that when Jingles participated in therapy sessions, clients that were normally uncommunicative responded positively (Levinson, 1969). Prior to Levinson's documentation of animals as "co-therapists," Florence Nightingale was recommending the use of animals as companions for the chronically ill in the mid 1800s, as reported by Jalongo, Astorino, and Bomboy (2004). Incorporating animals into the treatment of mental health was recognized as beneficial as early as the eighteenth century in Europe. It was not until 1919, when Elizabeth's Hospital in Washington DC introduced dogs as companions for psychiatric patients, that it was recognized in North America (Pugh, 2004).

The research and support of animal-assisted therapy as a valid treatment modality is growing, and the benefits of the human-animal bond will soon be hard to suppress, as noted by Jalongo et al. (2004), "the physiological as well as psychosocial benefits of positive interactions between young children and therapy dogs are not purely anecdotal; rather, there is a growing body of research to support the existence of a human-animal bond" (p. 10).

Effects of Animal-Assisted Therapy

Effects of Animal-Assisted Therapy on Personal Health

Animals offer a variety of health benefits according to the 2002 educational summit PAWSitive InterAction. The 2002 summit was held to promote and celebrate the positive impact of the human-animal bond. Presenter Dr. Alan Beck (2002) suggested animals encourage touch, stimulate conversation, encourage laughter and social interaction which in turn benefit the individual's sense of well being (PAWSitive InterAction, 2002). Becker and Morton (2002) believed, "Our animal companions can detect the low mood of illness, the need for play and distraction from our woes" (p. 98). Dr. Edward Creagan, oncologist at the world renowned Mayo Clinic in Rochester, Minnesota was so convinced by the beneficial effects of pets that he prescribed them to one-third of his cancer patients (Cukan, 2002).

After many years of theorizing the beneficial effects that animals have on human health, research is now available to back up these theories. In a study by researcher Rebecca Johnson, professor of nursing and veterinary medicine at the University of Missouri-Columbia, it was found that levels of serotonin--a hormone that fights depression--are elevated as a result of petting a dog. Johnson also found that petting a robotic dog had the opposite effect (Warner, 2004). Johnson stated, "By showing this benefit, we can help pet-assisted therapy become a medically accepted intervention that might be prescribed to patients" (Warner, 2004, p. 1). Furthermore, a study conducted by PAWSitive InterAction concluded that pet owners had lower levels of cholesterol, triglycerides and lower blood pressure (Duke, 2003).

Effects of Animal-Assisted Therapy on Psychological Health

A wealth of research exists documenting the psychological benefits of animal companions (PAWSitive InterAction, 2003). Dogs have been shown to provide chemical therapeutic benefits to their owners (American Heart Association, 2005; Becker & Morton, 2002; Duke, 2003; PAWSitive InterAction, 2003; Warner, 2004). Specifically, test results showed a significant release of the beneficial hormones prolactin, oxytocin and phenylethylamine shortly after petting in both humans and dogs. The American Heart Association (2005) studied dogs' effects on the variables that identify individuals with heart failure and found that anxiety scores dropped 24 percent for those patients who received visits from a dog. "What experimental studies don't reveal is the powerful, qualitative impact of the human-animal interaction on a single individual; numbers alone cannot measure these feelings or capture adequately the visible calming of agitated patients in the presence of a dog" (PAWSitive InterAction, 2003, p. 6).

Effects of Animal-Assisted Therapy on Social and Emotional Health

In their book *The Healing Power of Pets*, Becker and Morton (2002) stated, "At residential facilities where children are recovering from a lifetime of abuse and neglect, animals can be a vital therapeutic tool that can serve as a catalyst for growth and change" (p. 52). Providing emotional support to human companions comes naturally to dogs. They provide unconditional acceptance, are "nonjudgmental, and can enhance the child's sense of self-esteem and promote the expression of feelings" (Reichert, 1998, p. 177). Levinson (1969) was the first to provide empirical evidence for the "social lubricant" function that dogs provide. This evidence is based on the natural tendency for children and others to open up in the calm presence of a dog.

Effects of Animal-Assisted Therapy on Self-Confidence and Self-Esteem

One of the common mental health treatment goals in animal-assisted therapy (as cited by

Chandler, 2001, and the Delta Society, n.d.) is to improve self-esteem. Bergensen (1989), as cited by the Delta Society (n.d.), believed that owning a pet enhanced the self-esteem of a child. Reichert (1998) and Scott (2003) also found that animal-assisted therapy was successful in increasing self-esteem. Additional evidence for the improvement of a student's self-esteem was found in a study conducted at an elementary school in Salt Lake City, Utah. The study's primary objective was to measure the effects of animal-assisted therapy on students' reading skills. Researchers found that in addition to increased reading fluency, teachers reported that students' self-esteem and self-confidence had also improved (Gerben, 2003).

Animal-Assisted Therapy Settings

Animal-Assisted Therapy in Reading Programs

Two programs that currently exist in various classrooms and libraries are: Dogs in Education Assisting with Literacy (DEAL), established to work with children who receive special education services in the Albuquerque area, and Reading Education Assistance Dogs (READ), a literacy program developed to improve children's reading fluency levels. Both programs showed dramatic improvement in reading skills (Gerben, 2003; Scott, 2003). Scott (2003) explained, "The ability of an animal to spark the engagement of an individual and get that person involved with reading truly is amazing" (p. 8). Radcliffe (2006) reported local results of the READ program in the Houston Area. Dogs made weekly visits to struggling readers. Radcliffe noted that the participants felt the dogs were nonjudgmental. The dogs reduced anxiety and nervousness and made reading enjoyable. Nebbe (2003) author of *Animal-Assisted Activities/Therapy as an Animal and Human Welfare Project*, believed that animals show great promise in the classroom, not only for help in reading but in all areas.

Animal-Assisted Therapy in The Classroom

In a study conducted by Purdue University's Center for the Human-Animal Bond, nearly two thousand elementary school teachers were surveyed. The results showed that more than one-fourth of classrooms had animals with the purpose of motivation and life-skills training (Purdue, 2000). Jalongo et al. (2004) who wrote *Canine Visitors: The Influence of Therapy Dogs on Young Children's Learning and Well-Being in Classrooms and Hospitals*, discussed the benefits of Therapy Dogs International, an organization on the East Coast which trains therapy dogs. The human-animal teams which make up Therapy Dogs International travel to schools, nursing homes, and hospitals to provide educational and therapeutic services. The teams recently visited an elementary school in Pennsylvania where they shared stories about the dogs. They included important social skills messages, including why each dog was selected; one was a shelter dog and one an unsuccessful guard dog. "It sends the message that animals, like people, are individuals and can be terribly misjudged" (Jalongo et al., 2004, p. 14). As the teams concluded their presentations, they invited the children to pet the dogs. While the students interacted with the dogs, the trainers noted that the children talked to the dogs, offered comments about their own pets, and enthusiastically interacted with peers, teachers, and presenters.

"Animals are living demonstrations of diverse ways of eating, reproducing, communicating and perceiving--some similar to, others different from--human behavior" (Melson, 2001, p. 76). Furthermore, Morgan (2001), a special education teacher, wrote *Animals as Teachers* after witnessing the benefits of incorporating animals into her classroom. The dogs assisted in teaching proper classroom behaviors such as patience and following directions, and brought inspiration and excitement to learning. Morgan also believed the dogs were able to teach the children in ways that she was not able, and was able to make stronger, faster connections with her students. Melson (2001) wrote, "the most effective teaching, even for teens and young adults,

engages all the senses” (p. 79). In answer to her own question regarding the use of animal-assisted therapy beyond working with young children, Melson continued, “animals presence--in homes, schools, and elsewhere--should continue to enrich the ways children and adolescents learn” (p. 80).

Animal-Assisted Therapy in Counseling

Favorable documentation for the use of animal-assisted therapy in counseling was not available until Boris Levinson, a pioneer in child therapy, wrote the 1969 classic *Pet-Oriented Child Psychotherapy*. In his book, Levinson described how the presence of a friendly dog in a therapy session helped create a safe and nurturing environment for withdrawn children (Levinson, 1969). “Since that time, animal-assisted therapy has been implemented worldwide and has been shown to be effective in many therapy programs” (Wilson, n.d., p. 2). Today therapists find that animals make suitable targets for the real objects of a child’s rage, fear and need. Melson (2001) reported that, “animals are the repositories of feelings that, if directed toward authority figures like mother or father, would be unacceptable” (p. 148). Chandler (2001) also noted, “The presence of the animal can facilitate a trust-building bond between the therapist and client. The animal relieves some tension and anxiety of therapy and interacting with the animals is entertaining and fun” (p. 2). Chandler believed it was easier for the child to talk to the animal about more difficult issues while the therapist listened, and sharing their feelings with the animals brought about emotional sharing with the therapist directly. Melson (2001) agrees, “the animal connection then becomes the stepping stone to rebuilding ties to humans” (p. 101).

Animal-Assisted Therapy in Residential and Correctional Facilities

“At residential facilities where children are recovering from a lifetime of abuse and neglect, animals can be a vital therapeutic tool that can serve as a catalyst for growth and change” (Becker & Morton, 2002, p. 52). A counselor at Green Chimneys, a residential facility for abused children, described the interaction between children and animals as providing the healthy physical touch that all humans need. The counselor noted the qualities of animals as “always available, all understanding, sensitive to each feeling, a warm enveloping soft presence” (Melson, 2001, p. 103). Dalton (2001), Thigpen et al. (2005) and Wilson, (n.d.), all discussed the beneficial placement of troubled youth at Green Chimneys, as well as how animals provided a comforting escape for children. They also reported that children would confide in the animals because they knew they would not be judged. The children learned to trust animals and would eventually transfer that trust to humans. This bond between animals and people and the benefits have been explored by Dr. Alan Beck, a pioneer in the field of the human-animal bond and presenter at the Think Positive educational summit in 2002. One of the many health effects of animal companionship Beck listed was that pets would give attention to people who otherwise may not receive it (PAWSitive InterAction, 2002).

Animal-Assisted Therapy in Emotional Emergencies

Terrorism and school violence have required the support of therapy dogs in a new and important therapeutic modality. Therapy dog owners and those involved in helping the victims, survivors, and emergency workers cope with the stress of a traumatic experience know the benefits that therapy dogs can provide. A police officer on the scene of the World Trade Center tragedy in 2001 explained, “People seem to viscerally feel the assistance, comfort, and emotional support that the dogs give” (Crawford & Pomerinke, 2003, p. 26). Therapy dogs were also present to provide support following the Thurston and Columbine High School shootings in 1998 and 1999, respectively. The dogs “enabled the counselors to interact with many more students than would normally be the case” (Chandler, 2001 p. 2).

Animal-Assisted Therapy in Hospitals

Animal-assisted therapy has grown in recognition as an adjunct to traditional medical treatments. “Therapy dogs are a daily sight in health care programs for children in the United States” (Jalongo et al. 2004, p. 12). The American Heart Association, 2005; Cukan, 2002; McKeon-Charkalis, 2005) reported positive therapeutic benefits after patients were exposed to animal-assisted therapy. In a study conducted by UCLA Medical Center, therapy dogs helped lower stress and anxiety in patients. Researchers also documented improved heart and lung function (McKeon-Charkalis, 2005). Furthermore, Dr. Burgess, a physician at the University of Washington Pain Center states:

By initiating and maintaining the relaxation response, pets can take people’s focus off of their pain and elevate their moods. Secondly, through touch or physical contact, they can block the transmission of their pain from the periphery to the central nervous system, shutting the pain processing centers down (Becker & Morton, 2002, p. 106).

Animal-Assisted Therapy and Emotional/Behavioral Disorders

“Children with emotional/behavioral disorders (EBD) are arguably one of the highest at-risk groups for dropping out before graduating high school” (Thigpen et al., 2005, p.1). Students with emotional/behavioral disorders require Individualized Education Plans (IEPs), which outline goals for the treatment and management of their behaviors and social skills. Kogan et al. (1999) stated that therapy for children identified with emotional/behavioral disorders is time consuming, and services are incomplete and inadequate. The professional teams assigned to treat these students are typically overwhelmed by the evaluation responsibilities and are unable to dedicate the time needed for therapy or counseling. Kogan et al. (1999) declared “animal-assisted therapy is a promising potential resource that could meet some of the needs of emotionally disturbed children and place a valuable new tool in the hands of therapists and EBD teachers” (p. 106). Furthermore, Thigpen et al. (2005) noted “animals can provide direct and active teaching. Additionally, they give feedback about the student’s behavior by the manner in which they react to him or her” (p. 9).

Kogan et al. (1999) reported the benefits of animal-assisted therapy in a study that involved dogs trained by boys with emotional/behavioral disorders. The training was developed as part of the boys’ Individual Education Plans. After interventions involving the dogs, the boys demonstrated:

- A decrease in negative comments
- An increased use of praise and positive comments
- A decrease in distractibility
- Improved relationships with peers
- An increased amount of eye contact with people
- An increase in appropriateness of voice tone with people
- A decrease in learned helplessness
- An increased sense of control over self and environment
- A decrease in pouting and tantrums
- An improvement in affective reactivity as indicated by facial expression and gestures
- An increase in age-appropriate behavior

Summary

Students with emotional/behavioral disorders struggle to succeed academically and socially. Many of them have suffered abuse, negative social and academic experiences, and need intensive therapy and emotional support. Modeling appropriate behavior and correcting anti-social

behavior are relevant treatment goals. Research-based evidence has shown that animal-assisted therapy has provided benefits for students and others in a variety of settings. Animal-assisted therapy allows participants to engage in pro-social behaviors that can be generalized to other areas of their lives. This study investigated the effects of animal-assisted therapy on the self-esteem and classroom behaviors of a student with an emotional/behavioral disorder. The results provide additional evidence for the use of animal-assisted therapy in the classroom.

Research Design

The purpose of this study was to examine the effects of animal-assisted therapy on the self-esteem and classroom behaviors of a male student with an emotional/behavioral disorder. The researcher conducted single-subject research using the ABAB design. The research subject received animal-assisted therapy during both treatment phases of the design. Quantitative data were collected on the student through self-esteem evaluations and classroom behavior tracking sheets. This data was used to answer the research questions:

1. How does animal-assisted therapy effect the self-esteem of a student with an emotional/behavioral disorder?
2. How does animal-assisted therapy effect the classroom behaviors of a student with an emotional/behavioral disorder?

Single-Subject

The single-subject was an 18-year-old male identified by his Individual Education Plan as having an emotional/behavioral disorder. Data on an additional subject matching the criteria were collected in order to preserve the research in the event that the primary subject dropped out of the study. Both subjects were studied independently through all phases and at the same time each day--the primary subject from 12:00 p.m. to 1:00 p.m. and the second subject from 1:00 p.m. to 2:00 p.m. The primary subject successfully completed all four weeks of research.

Instrumentation

The researcher collected quantitative data using the Rosenberg Self-Esteem Scale, the Coopersmith Self-Esteem Inventory, and behavior tracking sheets. The Rosenberg Self-Esteem Scale is a ten-item Likert scale. Items are answered by responding to one of four measures ranging from strongly agree to strongly disagree. The subject answered statements by selecting SA for strongly agree, A for agree, D for disagree and SD for strongly disagree. These statements are designed to measure adolescents' feelings of self-worth and self-acceptance. The Rosenberg Self-Esteem Scale is accepted as the standard against which other measures for self-esteem are compared. Furthermore, extensive and acceptable reliability and validity information exists for this well-utilized scale. Test-retest correlations are in the .82 to .88 range (Blascovich & Tomaka, 1991).

The researcher also used the adult version (ages 16 and older) of the Coopersmith Self-Esteem Inventory. This self-esteem inventory contains 58 questions. The questions in the inventory are researched to assess attitude toward oneself in general and in specific situations. The questions, which portray favorable and unfavorable aspects of a person, are answered by selecting Like me or Unlike me. The Coopersmith Self-Esteem Inventory has a built in 'lie scale' to help determine if the subject is trying to appear to have a high self-esteem. The results were evaluated based on a table showing scores for both males and females. The table identifies scores at significantly

below average, somewhat below average, average, somewhat above average and significantly above average. The reliability and validity of this scale is well documented (Blascovich & Tomaka, 1991).

Classroom staff collected data on the student each day by placing frequency tallies on the classroom behavior tracking sheets (Appendix C). Data were collected on the research subject's target behaviors as indicated on his IEP: impolite behavior, off-task behavior, and noncompliance. Data collection was broken down hourly and included lunch and transitions. The same classroom staff collected the data each day in order to keep the recordings consistent. The classroom behavior tracking sheets were developed by the school's behavioral specialist and are used daily in each of the program's classrooms. These behavioral tracking sheets have been tested, improved upon and used by school staff for the last three years.

Data Collection Procedures

After receiving permission from the parent/guardian, and verbal permission from the student, the research began. Self-esteem testing began the first week and continued each Friday. Animal-assisted therapy was provided during treatment weeks two and four. During the treatment weeks the subject spent one hour each day with the dog at his side. The subject was completely responsible for the dog during this time and was given specific tasks to complete. During the hour the subject walked, groomed, and played with the dog, was encouraged to pet and hold the dog, and learned basic training commands.

Data were collected from the self-esteem assessments each Friday at the conclusion of the school day. The researcher administered both the Rosenberg Self-Esteem Scale and the Coopersmith Self-Esteem Inventory. The scales provided baseline data during weeks one and three and results following treatment weeks two and four. The assessments were always presented in the same order; the Rosenberg scale followed by the Coopersmith inventory. The student was allowed ten minutes to complete both instruments. The student was always seated at the front of the room in the seat nearest to the researcher while completing the evaluations.

Data were also collected using classroom behavior tracking sheets. The subject was monitored in the areas of impolite behavior, off-task behavior, and noncompliance. A frequency tally was made in the appropriate behavior box corresponding to the time that the behavior was observed. The same staff collected behavioral data each day. This ensured that the criterion used to collect the data was consistent. The staff charting the frequency tallies used the following descriptions of the students target behaviors as their guide:

1. Impolite behavior: impolite language, inappropriate listening, or disrespect of others.
2. Off-task behavior: incomplete assignments, inappropriate participation, or inappropriate problem resolution.
3. Noncompliance: not following instructions, loss of self-control, or out of place.

Of important consideration to the researcher was the ability to conduct this research over four consecutive five-day school weeks. Considering this, the researcher studied the school calendar and set up the research to avoid weeks where there were not five days of class. The research was conducted over 20 consecutive school days from November 27th to December 22nd, 2006.

Data Analysis

Results of the self-esteem scales were scored using the scoring methods detailed by both the Rosenberg Self-Esteem Scale, and the Coopersmith Self-Esteem Inventory. The results of the assessments answered the research question, “How does animal-assisted therapy effect the self-esteem of a student with an emotional/behavioral disorder?” The results were displayed using a table showing the test scores during each phase of the research and a line graph to illustrate the effects of animal-assisted therapy on the subject’s self-esteem. One line graph is used to display the results of both self-esteem scales during each phase of the four-week research period.

The behavior data collected during the four weeks of research were counted and answered the research question, “How does animal-assisted therapy effect the classroom behaviors of a student with an emotional/behavioral disorder?” The data collected on the behavior tracking sheets is displayed using both bar and line graphs to illustrate the effects of animal-assisted therapy on the subject’s classroom behaviors. The line graph shows research days and target behavior frequency while the bar graph displays the alternating phases--baseline and treatment--and target behavior frequency. A table is also used to provide a valuable comparison of target behavior frequencies between baseline and treatment weeks.

The researcher chose the single-subject research ABAB design (Fraenkel & Wallen, 2006). This design combines two baseline periods--weeks one and three--with two intervention periods--weeks two and four. The intervention or treatment in this research is animal-assisted therapy. The results of the ABAB research design provide the researcher with a reproduction of the AB design for comparison of data in weeks one and two with weeks three and four. This provides the researcher additional information regarding the intervention and strengthens the conclusions about the effectiveness of animal-assisted therapy.

Results

Population

The study population was one 18-year-old male identified by his Individual Education Plan as having an emotional/behavioral disorder. The student attends class full-time at a special education school in northeast St Paul. He is not able to attend general education classes in his local school due to the severity of his disability. The research subject lives in a group home and does not work. He has been attending this school full-time since he was 12.

Quantitative Findings

Quantitative findings were collected from the Rosenberg and Coopersmith self-esteem scales. The Rosenberg Self-Esteem Scale is a ten-item Likert scale. Items are answered by responding to one of four measures ranging from strongly agree to strongly disagree. The subject answered statements by selecting SA for strongly agree, A for agree, D for disagree and SD for strongly disagree. These statements are designed to measure adolescents’ feelings of self-worth and self-acceptance. Scores on the Rosenberg scale range from 10-40. The results of the scale are scored by assigning values to each of the ten questions. Five of the items are designed to be reverse scored. Rosenberg provides no points to delineate high or low self-esteem. Blascovich and Tomaka (1991) suggest that researchers interested in norms for comparison must find research using a similar sample. No norms for comparison were found.

The Coopersmith Self-Esteem Inventory contains 58 questions. The questions in the inventory are researched to assess attitude toward oneself in general and in specific situations. The questions, which portray favorable and unfavorable aspects of a person, are answered by selecting Like me or Unlike me. The Coopersmith Self-Esteem Inventory has a built in 'lie scale' to help determine if the subject is trying to appear to have a high self-esteem. The results were scored and evaluated based on a comparison table identifying ranges for both males and females. The table identifies scores of 33 or below as significantly below average, scores of 33 to 36 as somewhat below average, scores of 36 to 40 average, scores of 40 to 44 somewhat above average, and scores of 44 to 47 as significantly above average.

The scores from both of these self-esteem scales were used to answer the following research question, "How does animal-assisted therapy effect the self-esteem of a student with an emotional/behavioral disorder?" Table 1 shows scores for both the Rosenberg and Coopersmith self-esteem scales following each phase of the research. Figure 1 shows the results of the self-esteem scales plotted on a line graph. The line graph shows the baseline and treatment phases and scores from both scales.

Table 1

The Research Subjects Scores for the Rosenberg and Coopersmith Self-Esteem Scales

Scale	<u>Week 1</u> Baseline	<u>Week 2</u> Treatment	<u>Week 3</u> Baseline	<u>Week 4</u> Treatment
Rosenberg	28	28	30	30
Coopersmith	32	32	33	35

Table 1 shows the score totals for both self-esteem scales. The subject scored a 28 on the Rosenberg Self-Esteem Scale at the end of the first and second weeks and 30 at the end of the third and fourth weeks. The Rosenberg scale range is 10-40 points. As mentioned previously, the Rosenberg scale provides no delineation in scores between high or low self-esteem and no norms for this scale were found in previous literature.

The subject scored 32 on the Coopersmith Self-Esteem Inventory at the end of weeks one and two. A 32 on the Coopersmith scale is considered to be significantly below average when measured against other males the same age. The subject's test at the end of week three was 33 and still considered to be significantly below average. The subject scored 35 at the end of week four, which according to the scale is somewhat below average.

Figure 1

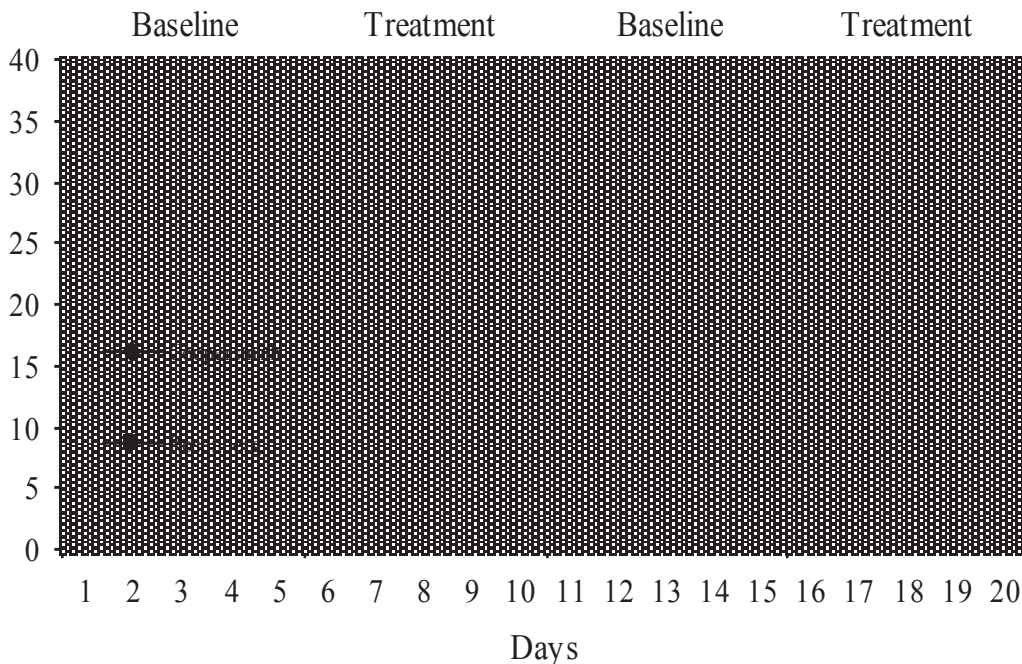


Figure 1. Self-esteem scores recorded at the end of each week over four weeks.

Figure 1 shows the quantitative data collected from both the Rosenberg and Coopersmith self-esteem scales in a line graph. The subject’s self-esteem scores are plotted at the end of each of the four research phases. Both of the scales showed identical results for each scale in the first and second weeks of research; Rosenberg scale scores for weeks one and two were 28 and Coopersmith scale scores for weeks one and two were 32. The Rosenberg scale showed a score of 30 points for weeks three and four and the Coopersmith scale showed scores of 33 at the end of the third week and 35 at the end of the fourth week. The quantitative data shows an upward trend in both self-esteem scale scores. The subject’s Rosenberg self-esteem scores rose from a score of 28, or 70% of the points possible at the end of the first baseline week to 30, or 75% of the points possible on the last day of research, a 5% increase. The Coopersmith scale scores increased from 32 at the end of the first baseline week to 35 on the final day of research, an improvement from a baseline of significantly below average to somewhat below average at the end of the fourth week.

The quantitative data from the behavior tracking sheets are provided in Figures 2 and 3, and Table 2. The subject’s behavior was monitored in the areas of impolite behavior, off-task behavior, and noncompliance. Frequency tallies were made on the subject’s behavior tracking sheet. The tallies were placed in the appropriate time segment in which the behavior was observed. Daily totals were compiled in each of the target behavior areas during the four weeks of research. The results of the behavior tracking sheets were used to answer the research question, “How does animal-assisted therapy effect the classroom behaviors of a student with an emotional/behavioral disorder?”

Figure 2

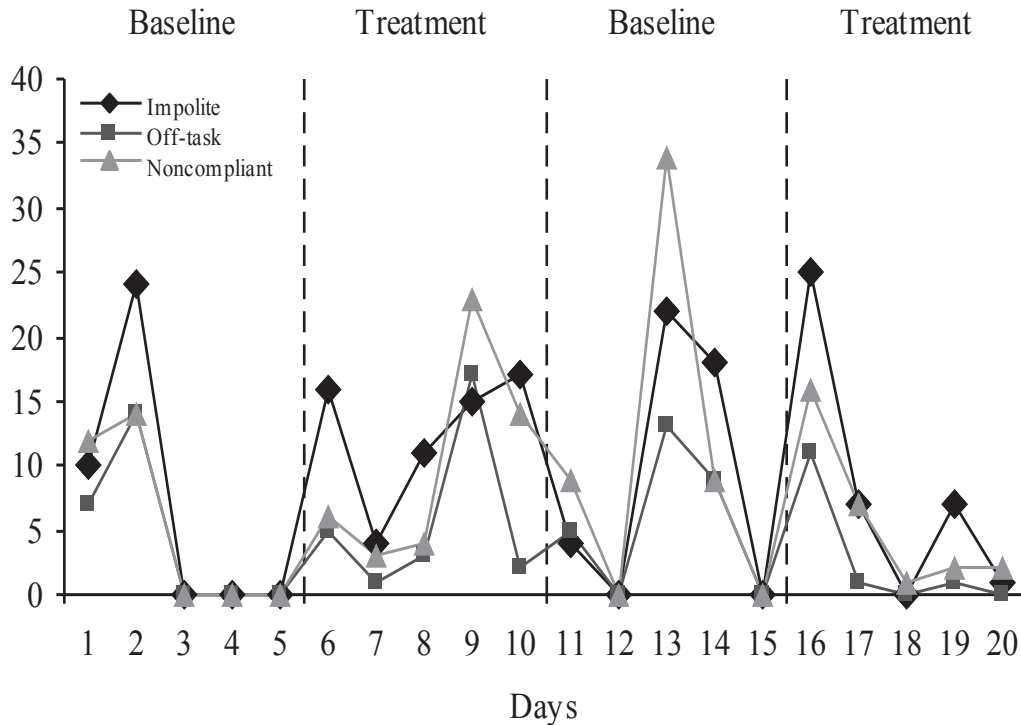


Figure 2. Behavior frequency tallies recorded daily over four weeks.

Figure 2 shows the students total daily target behaviors during both baseline and treatment weeks. The research subject attended school each day during treatment weeks two and four. The subject was absent for part of two days during both baseline weeks one and three. Data were not collected on the days the subject was not in school for a full day. The quantitative data from the behavior tracking sheets shows a general reduction in target behavior frequency tallies and an increase in the subject's attendance during both treatment phases. Figure 3 and Table 2 will provide further clarification of the data by comparing behavior frequency on similar days of school attendance during baseline weeks one and three and treatment weeks two and four.

Figure 3

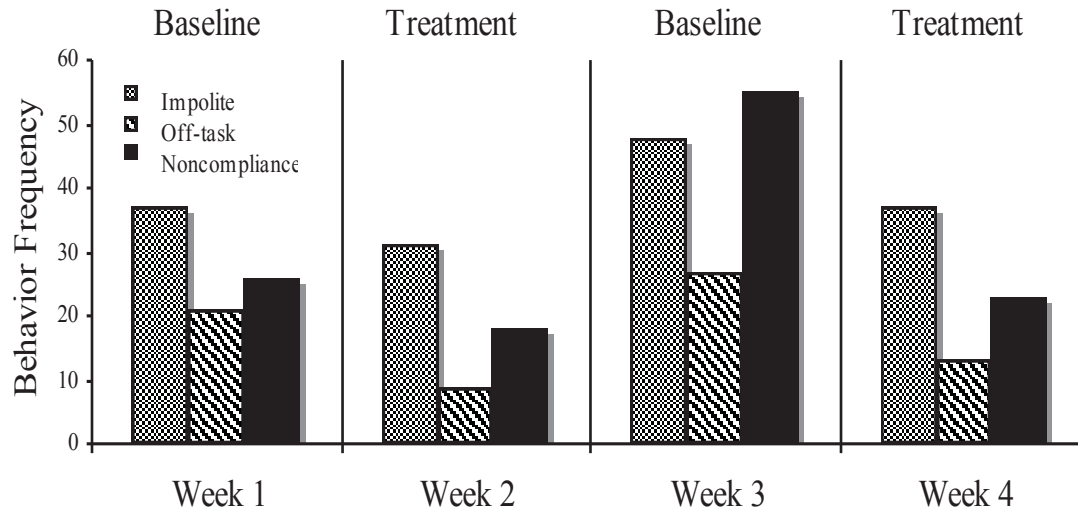


Figure 3. Behavior frequency totals comparing similar days of school attendance.

Figure 3 is a graphic illustration of the behavior data collected during the four weeks of research. Because the subject was absent for part of two days during both baseline phases, the illustration above shows data collected on the same days during weeks one and two and weeks three and four. This data provides a more accurate comparison between baseline and treatment phases. Data were compiled from Monday, Tuesday and Wednesday of weeks one and two and Monday, Tuesday and Thursday of weeks three and four. Figure 3 shows a reduction of frequency tallies in each target behavior during both treatment weeks. The research subject's target behaviors showed improvement in the following ways:

1. Impolite behavior decreased in treatment weeks two and four by showing a reduction of 6 tallies in week two and a reduction of 11 tallies in week four.
2. Off-task behavior decreased in treatment weeks two and four by showing a reduction of 12 tallies in week two and 14 tallies in week four.
3. Noncompliance decreased in treatment weeks two and four by showing a reduction of 8 tallies in week two and 32 tallies in week four.

Table 2 below provides the behavior data used in Figure 3.

Table 2

Behavior Data Comparisons Between Baseline and Treatment Weeks

Days	M.T.W. <u>Week 1</u>	M.T.W. <u>Week 2</u>	M.T.TH. <u>Week 3</u>	M.T.TH. <u>Week 4</u>
Target behavior	Baseline	Treatment	Baseline	Treatment
Impolite behavior	37	31	48	37
Off-task	21	9	27	13
Noncompliance	26	18	55	23

Note. M = Monday, T = Tuesday, W = Wednesday, TH = Thursday.

Table 2 shows the quantitative behavior data collected on the same days of the week during baseline and treatment weeks one and two, and baseline and treatment weeks three and four. The data show a reduction in frequency tallies during both treatment phases in all three target behaviors. Impolite behavior decreased by 16% at the end of the first week of animal-assisted therapy and 23% at the end of the second treatment week. Off-task behavior was decreased by 57% at the end of the first week of therapy and 52% at the end of the second week. Noncompliance decreased by 31% at the end of the first therapy week and 58% at the end of the second treatment week.

Summary

This action research project studied the effects of animal-assisted therapy on the self-esteem and classroom behaviors of a male student with an emotional/behavioral disorder. Many children with emotional/behavioral disorders require support as part of their therapy. A dog can provide support for these children by helping them learn trust, responsibility, patience and by improving their confidence (Dalton, 2001). Many theories have been proposed about an animal's ability to provide emotional and physical healing. In fact, positive results have been shown in a number of school settings with different populations (Kogan, et al., 1999). Specifically, animal-assisted therapy has been shown to improve self-esteem, socialization, and problem-solving skills in children diagnosed with an emotional/behavioral disorder (Reichert, 1998). Even though Kogan, et al. (1999) suggested animal-assisted therapy had promising potential as a resource for teachers of students with emotional/behavior disorders, very little evidence to substantiate the use of animal-assisted therapy exists. This researcher recognized an opportunity to provide additional evidence for animals as 'teachers' in an academic setting.

Purpose

This researcher found evidence during a review of the existing literature that children and adolescents benefit cognitively, socially, and emotionally from their interactions with animals. After witnessing and hearing the many positive interactions students have had with visiting

animals at my school, I was compelled to analyze the effects of animal-assisted therapy with one of my own students.

The following research questions guided this study:

1. How does animal-assisted therapy effect the self-esteem of a student with an emotional/behavioral disorder?
2. How does animal-assisted therapy effect the classroom behaviors of a student with an emotional/behavioral disorder?

Literature Review

Humans have an evolutionary tendency to pay attention to animals, possibly originating from the need to hunt and forage (Katcher & Wilkens, 2000). While very few families today use hunting as a primary source of food, humans are inclined to attend to animals, which “is in turn associated with increased capacity for response inhibition” (Katcher & Wilkens, 2000, p. 153). This may be especially important for students with emotional/behavioral disorders who have a tendency to act impulsively because of their inability to reflect between stimulus and reaction (Lieber, 2002). This researcher capitalized on this innate tendency in order to study the effects of animal-assisted therapy.

Utilizing animals in therapy is built upon the notion that human interactions with animals can result in psychological and physiological change (Hines & Bustad, 1986). In fact, the use of animals as part of the therapeutic process has occurred for over 200 years with the first recorded efforts taking place at the York Retreat in England near the end of the 18th century (All, Loving & Crane, 1999). Even though many have praised the positive aspects of the human-animal bond and its ability to contribute to the therapeutic process, very little empirical research exists to prove its validity.

Boris Levinson was one of the first proficient writers in the area of pet-facilitated psychotherapy. Levinson felt his dog was critical in helping him develop a rapport with children who were withdrawn or disturbed (Levison & Mallon, 1997). He believed that the dog moved the therapeutic process along more quickly than it would have without animal assistance. Levinson published an article about his experiences. This is considered to be the formal beginning of animal-assisted therapy (Cusack, 1988). Levinson’s work in the 1950’s was followed by Green Chimneys Children’s Services, a residential program which has incorporated animal-assisted therapy in its programming for the treatment of children with emotional/behavioral disorders for over 50 years.

The use of animal-assisted therapy has demonstrated efficacy in increasing empathy for others, acting as a catalyst for the expression of emotions, enhancing self-esteem, improving self-control, improving social competence, decreasing feelings of stress, and decreasing feelings of social isolation (Drawe, 2001; Jalongo, et al. 2004; Lieber, 2002; Levinson & Mallon, 1997; Melson, 2001).

Methodology

The design selected for this action research was the single-subject ABAB design. The quantitative data were collected over four weeks of alternating baseline and treatment phases.

The Rosenberg and Coopersmith self-esteem scales were administered to the research subject at the end of each week, resulting in eight test scores. Data were also collected on behavior tracking sheets; frequency tallies were used to provide daily data over four weeks on the subject's target behaviors.

Findings

Both of the subject's self-esteem test scores increased during the last two weeks of the research. The subject's Rosenberg scale increased from a baseline of 28, or 70% of the points possible to 30, or 75% of the points possible. The Rosenberg scale does not provide a distinct cut-off for low or high self-esteem. However, an increase of 2 points on a scale ranging from 10 – 40 represents a 5% increase. When measured against males the same age, the subject's Coopersmith scale scores increased from 32-significantly below average-to 35- somewhat below average.

The data collected from the behavior tracking sheets shows a reduction in frequency tallies during both treatment phases in all three target behaviors. Impolite behavior was reduced by 16% by the end of the first week of animal-assisted therapy and 23% by the end of the second week of animal-assisted therapy. Off-task behavior was reduced by 57% by the end of the first week of animal-assisted therapy and 52% by the end of the second week of animal-assisted therapy. Noncompliance was reduced by 31% by the end of the first week of animal-assisted therapy and 58% by the end of the second week of animal-assisted therapy.

Conclusions

Three conclusions can be drawn from this study. The first conclusion relates to research question one, the second conclusion relates to research question two, and the third conclusion relates to both research questions. From this single-subject study, the researcher concludes:

1. Self-esteem improves for a male student identified with an emotional/behavioral disorder when animal-assisted therapy is included as part of his daily program.
2. The occurrences of impolite, off-task, and noncompliant behaviors decrease for a male student identified with an emotional/behavioral disorder when animal-assisted therapy is included as part of his daily program.
3. Attendance improves for a male student identified with an emotional/behavioral disorder when animal-assisted therapy is part of his daily program.

Discussion

If not for the previous research into animal-assisted therapy, it would be hard to generalize the findings and conclusions of this research to a wider population based on the data collected from one 18-year-old male. This discussion will be a general overview reflecting on all conclusions, as well as other observations.

The student I selected for this research is one of the most difficult in my classroom. His lack of self-control and disrespectful behavior are demanding challenges throughout the day. When I asked him how he felt about helping me with this project and working with the therapy dog, he was very interested and motivated to get started. After his first week of working with the therapy

dog I asked him to reflect on his experience by writing a few words about it in his daily journal. Normally just getting him to sit at his desk is a big challenge; if we get to the assignment within five minutes it is a very good day. Not only did he immediately get to his desk to begin the journal, he wrote an entire page, then brought it with to computer class and typed it out for me. The pride he had in his work with Lizzy (the therapy dog) appeared to be transferring to his daily academics. I was amazed at the difference in his behaviors after just one week.

The following is a brief excerpt revealing his sense of achievement and enjoyment in working with Lizzy:

Yes, at times it can be very frustrating because you need to say a command over and over so she knows it's not playtime anymore. We still have a lot of work ahead of us. It is so fun that even staff is helping me out with teaching Lizzy her commands. It is actually very rewarding because while you are teaching her you get to take a break to just sit and relax or play games with her.

Seeing this student use words of emotion in his writing about his work with Lizzy, after only one hour a day for one week, confirmed for me that even short interactions could make a difference and begin to have a lasting impact.

Even though the student's self-esteem scores had not changed after his first week with the therapy dog, the change in his classroom behaviors was dramatic. He was not as impulsive or irritable. He had a sense of commitment to something and was proud to be doing something for Lizzy. Other students in the program would ask him what he was doing. He was so proud to tell them about the goal he had with her that day. He really connected with Lizzy and started to become more aware of her needs--when she needed to go out, when she needed water, when she was looking for her master. His empathy for her grew over the two weeks they worked together, and he really took ownership in caring for her. After months of attempting to teach empathy through social skills training to this student, it only took ten days with the therapy dog to make significant progress. These results are consistent with conclusions by Field (2006). It is easier to teach children to be empathetic to animals. "What you see is what you get". Field (2006) also believes that as children get older, their ability to empathize with animals will carry over into their experiences with people.

The other students in my room were also motivated to build a relationship with Lizzy and would often ask if they could help. This provided the research subject an opportunity to teach his classmates about what he was doing and help them work with Lizzy as well. This created an environment to develop the social skills of everyone in the class. By working with Lizzy they learned that if you treat another being with sensitivity and kindness, you get something back. Field (2006) believes that those skills will then be transferred to the other students.

Beyond the research subject's improved classroom behaviors, social skills, perspective-taking and sense of self-worth, his attendance was perfect during the weeks he knew he was working with Lizzy. He normally misses one or two days of school each week or is truant during the school day. This student has not been successful in a work setting because he is not a responsible employee. He has lost several jobs because he just decides he doesn't feel like going to work. During animal-assisted therapy, he had a purpose and felt responsible for her training. Improved attendance was an additional outcome that I had not anticipated.

This study provides additional support to that of Reichert (1998) in that the use of animal-assisted therapy is successful in increasing self-esteem, socialization, and problem-solving skills

with children who have emotional/behavioral disorders. This study also aligns with the findings of Kogan et al. (1999), who suggest that animal-assisted therapy has promising potential as a resource for teachers of students with emotional/behavioral disorders.

To further strengthen the findings of this study, it was important to determine if the results could be reproduced. The ABAB design used in this research provided similar results a second time. The results of this study support prior research and provide encouraging evidence for teachers to further consider therapy dogs as an additional intervention to improve the social skills and self-esteem of students with emotional/behavioral disorders.

Recommendations

Recommendations for Practice

When designing an animal-assisted therapy program for the classroom, teachers should include individual treatment goals and combine appropriate interventions and strategies. A typical animal-assisted therapy lesson may range from discussing the companion animals needs to the importance of treating animals with compassion, respect and empathy. Humane education helps bring about the above mentioned values along with a sense of responsibility and a reverence for life (Field, 2006). Other important considerations are matching the energy level and size of the animal with the student, infection control, and the animal's welfare and safety. The Delta Society would be a good starting point for educators and service providers who wish to incorporate animal-assisted therapy into their programs.

Recommendations for Further Study

Because it is vital to have research-based applications for animal-assisted therapy, more longitudinal studies are needed to better understand its impact over time. As research into the benefits of animal-assisted continues, effective strategies for improving outcomes are also necessary. Lieber (2002) agrees that developmental tools to measure and quantify significant progress are essential to the advancement of animal-assisted therapy in schools. Further research may also lead to better collaboration among general education, families, and other service providers.

Even though the results of this study are encouraging, the improvement of self-esteem and behaviors as a result of goal-oriented animal-assisted therapy programs will continue to be debated until enough research exists to support its validity with students identified with an emotional/behavioral disorder.

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