1-1-2011

Effects of Animal-Assisted Therapy on Behavior and Reading in the Classroom

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EFFECTS OF ANIMAL-ASSISTED THERAPY ON BEHAVHIOR AND READING IN THE CLASSROOM

A thesis submitted to

The Graduate School of

Marshall University

In partial fulfillment of

the requirements for degree of

Education Specialist

School Psychology

by

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May 2011

I would first like to thank my family and friends for their constant love and support throughout my education. This is what has kept me going for the last few years. Thank you to my classmates for all your support and help along this journey. I would like to thank my committee members-- Dr. Stroebel, Dr. Meisel, and Dr. Krieg for their guidance and input. Last but not least, I would like to thank Mary Misiti. Thank you for all your help throughout the thesis process as well as being a mentor. I truly appreciate it.

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ABSTRACT

Research has shown that the presence of a therapy dog in the classroom should elicit a calming effect, reduce stress, and promote positive interactions among peers and adults. The purpose of this study is to examine the effect a therapy dog has on behavior and reading in the classroom. Specifically, the study will be comparing behavior grades and reading scores for two groups of students: one that received Animal Assisted Therapy and one that did not receive Animal Assisted Therapy. Data were collected from two fifth-grade classrooms. There were 17 fifth-grade students in the experimental group and 15 in the control group. Results showed that there was no significant difference in pre- and post-test behavior for the experimental and control group. Also, there was no significant difference in reading for the experimental and control groups.

CHAPTER I: LITERATURE REVIEW

Animals offer humans a wide variety of assistance. This assistance can come in the form of Seeing-Eye dogs, Search and Rescue dogs, Hippo therapy with horses, therapy animals, and the most common, a companion animal. More than 63% of American households currently have at least one pet. Of that population, 75% have children in the household (Walsh, 2009). This particular study will look at the effects of Animal Assisted Therapy. Animal Assisted Therapy (AAT) is defined as "the introduction of an animal into the immediate surroundings of an individual, or a group, as a medium of interaction with a therapeutic purpose" (Velde, Cipriani, & Fisher, 2005).

History of AAT

One of the first documented uses of Animal Assisted Therapy occurred in England in 1792. A group of Quakers placed small animals, such as rabbits and poultry, in the garden of a home for the mentally insane. Animals were part of the treatment that included a natural living environment (Trivedi & Perl, 1995). Another example of AAT occurred in 1867 at an institution in Germany that included daily care of animals as a part of it's treatment plan for patients with epilepsy (Trivedi & Perl, 1995).

The use of Animal Assisted Therapy was first recorded in the United States in 1942 at an Air Force hospital in New York. An injured solider requested that a dog keep him company while he recuperated from battle wounds at the hospital. Soon after, many patients that were injured or emotionally distressed requested dogs to be with them at the hospital. Many became very attached to their new companions and ended up keeping them after leaving the hospital (Trivedi & Perl, 1995).

Boris Levinson, a child psychologist, was often referred to as the pioneer of Animal Assisted Therapy with children. He began to incorporate a dog into his therapy sessions in the late 1960s and 1970s (Friesen, 2010). The first occurrence happened by accident, when his eight year-old client showed up an hour early for his appointment. Levinson had his dog, Jingles, in the office. The child had been very withdrawn and uncommunicative in previous sessions. However, in the presence of the dog, the child spontaneously interacted with the dog positively. This led Levinson to have a breakthrough in treatment with the child (Trivedi & Perl, 1995). Levinson then continued to use the dog in his therapy sessions. He found that the dog acted as a "social lubricant" between the child and him. He found that this created a more relaxed environment that was conducive to self-disclosure and facilitated the client-therapist relationship (Friesen, 2010).

Dr William Thomas, who became an authority on geriatric medicine and care for the elderly, also incorporated animals into his therapeutic environment, which he called Eden Alternative. He sought to create a natural environment that included animals in the long-term care of the elderly (Velde, Cipriani, & Fisher, 2005).

Benefits of AAT

Today, animals have been included in a variety of settings such as schools, counseling centers, hospitals, nursing homes, and rehabilitation centers, just to name a few. With a wide variety of therapy being done with animals, what are the effects of AAT? Is it a beneficial intervention or type of therapy?

There has also been a considerable amount of research involving Animal Assisted Therapy and the elderly in rehabilitation centers, nursing homes, and long-term care

facilities. The use of AAT with senior citizens in a walking rehabilitation program revealed that patients walked further when walking with a dog compared to walking alone (Velde, et al., 2005). AAT in nursing homes showed an increase in patient-staff interaction, eased patient-visitor relations, and provided temporary happiness, comfort, and entertainment for the elderly. The patients who received AAT had greater levels of social interactions and a decrease in loneliness and depression levels (Kawamura, Niiyama, & Niiyama, 2007). Even the presence of fish aquarium has shown benefits to the elderly including positive weight gain, and a decline for the need of nutritional supplements

AAT has also provided benefits for counseling. A benefit that Levinson noted was the change in the client-therapist relationship. The use of AAT facilitates the therapy process. Counseling patients who received AAT are more likely to be attached to the counseling process and exhibit less stress throughout the process (Wesley, Minatrea & Watson, 2009). People who are often associated with animals are viewed as friendlier, happier, and more relaxed. An animal paired with a counselor can help establish/build rapport as well as promote a better client-counselor relationship (Trivedi & Perl, 2005).

Many physiological, psychological, and emotional benefits have been associated with Animal Assisted Therapy. Even the simple act of petting an animal that one shares a bond with promotes relaxation by decreasing blood pressure and increasing peripheral skin temperature (Velde, et al., 2005). The relaxation effect is said to be true in children and adults (Trivedi & Perl, 1995). Relationships with animals promote learning, provide comfort, promote a sense of safety, and improve self-esteem. Patients in hospitals that use AAT tend to be calmer, less stressed, and have an increase in morale (Velde, et al., 2005).

After AAT, patients with a psychiatric condition exhibited less fear and anxiety prior to having electroconvulsive therapy. Mentally ill patients demonstrated a decrease in irritable behaviors (Velde, Cipriani, & Fisher, 2005). AAT research participants have become more verbally expressive, spoke with more confidence, and showed a decrease in learned helplessness (Kogan, Granger, Fichett, Helmer & Young, 1999). AAT with dolphins and horses has shown psychological benefits. Participants who worked with dolphins showed a decrease in the severity of depressive symptoms and reductions in overall psychological distress (Antonioli & Reveley, 2005). Equine therapy revealed similar results in reducing psychological distress and depressive symptoms (Klontz, Bivens, Leinart, & Klontz, 2007).

Children receiving AAT have exhibited significantly lower behavioral, emotional, and verbal distress when participating in a mildly stressful activity such as visiting a doctor's office (Friesen, 2010). Students with severe emotional distress who have participated in AAT have shown gains in overall emotional stability and more positive attitude toward school. It is also believed that AAT contributes to a higher self-esteem by providing a "friend" to bond with in school. Students tend to be more attentive, responsive, and cooperative with an adult when a dog is present. Children receiving AAT in therapy settings have shown an increase in alertness, attention span, and openness (Friesen, 2010). It is believed that the child's acceptance of the dog is because of the dog's ability to be non-judgmental toward the child. AAT has been found to encourage social interactions with peers and adults in special needs classes (Friesen, 2010).

There has been some research supporting the use of AAT with children on the Autism spectrum. One study compared the interactions of children with Pervasive

Developmental Disorder in the presence of a ball, stuffed dog, and real dog. Martin & Farnum (2002) found that the children laughed more and gave treats more in the presence of the real dog. They also appeared to be happier, to be in a more playful mood, and more energized when the real dog was present. The energy was appropriately channeled during the session with the real dog. Also, the participant's gaze focused more on the dog, and appeared be less distracted. They were more likely to engage the therapist in discussion and were more apt to agree to a request made by the therapist. AAT with Autistic children has also shown an increase in the duration and frequency of interactions with others (Kršková, Talarovičová, & Olexová, 2010).

Although there isn't a lot of research in the literature evaluating the effect AAT has on reading, there are a handful of programs designed to incorporate therapy animals in reading interventions. R.E.A.D. (Reading Education Assistance Dogs) is one of the most well known AAT reading programs and offers promising results. R.E.A.D. promotes improving literacy skills through using therapy teams as literacy mentors (Jalongo, Astorino, & Bomboy 2004). The preliminary findings showed that all students who participated in R.E.A.D for at least 13 months gained at least two grade levels. Some gained as much as four grade levels (Bueche, 2003). Another study looked at results of an AAT group that paired second-grade readers who were below grade level for reading fluency with a therapy dog and handler once a week for twenty minutes. The results showed that students improved reading skills by at least two grade levels (Newlin, 2003).

Overall, research has shown some positive effects of Animal Assisted therapy. The benefits of AAT include physiological, psychological, emotional, social, and educational effects. However, the research shows a lack of control group studies

involving AAT, as well as little research on the use of therapy animals aiding in improving reading skills.

The purpose of this study is to examine the effect a therapy dog has on behavior and reading in the classroom. Specifically, the study will be comparing behavior grades and reading scores for two groups of students: one that received Animal Assisted Therapy and one that did not receive Animal Assisted Therapy. Based on research, the presence of a therapy dog in the classroom should elicit a calming effect, reduce stress, and promote positive interactions among peers and adults. Therefore, the hypotheses are posed as follows: The null hypothesis is that the presence of the therapy dog will have no significant effect on behavior (behavior grades) or reading. The research hypothesis is that results will show a significant change in behavior (behavior grades) and reading for the AAT group.

CHAPTER II: METHOD

Participants

Data were collected from two-fifth grade classrooms at an elementary school in West Virginia. 17 fifth grade-students received Animal Assisted Therapy with a therapy dog. The control group that did not receive AAT consisted of 15 students.

Procedure

Behavior and reading data were collected from the school psychologist and school principals. The data came from the first four weeks of the 1st nine weeks and last four weeks of the 2nd nine weeks grading period. Students' behavior grades came from the school wide behavior management plan, Respect & Protect. Grades from the first four weeks of the 1st nine weeks grading period were averaged as well as grades from the last four weeks of the 2nd nine weeks grading period. Numbers were assigned to letter grades: A=4, B=3, C=2, and D=1. Reading scores were obtained from Pearson-Scott Foresman reading assessment. Weekly test scores were averaged for the first four weeks of the 1st nine weeks and averaged for the last four weeks of the 2nd nine weeks grading period. The AAT group and control groups' behavior grades and reading pre/post scores were then compared using a paired sample *t*-test.

Intervention

When the therapy dog first came to the school, the experimental group had a couple of lessons about the therapy dog and information was sent home to parents. The therapy dog is in the experimental group's classroom at least three full days a week. The therapy dog greets the children when they enter the classroom. The therapy dog stays in

the classroom with them and is allowed to come over and interact with students freely. Students may also ask permission to go sit with the therapy dog if she is at her bed. The therapy dog escorts them other places in the building such as gym or the lunchroom. The therapy dog remains with the teacher when students are in gym and lunch. Students are sometimes asked to lead the therapy dog and help care for her. At least three different students read stories and books to the therapy dog each day.

CHAPTER III: RESULTS

The purpose of this study was to determine if Animal Assisted Therapy with a therapy dog had an effect on behavior and reading in the classroom. Behavior and reading pre/post-data were collected and analyzed using paired samples t-test. The pre- and post-test means were compared quantitatively.

Experimental and control groups' pre-test data were compared for both behavior and reading. No significant differences were found at $p < 0.05$ (see Table 1). Results indicate that there was no significant difference in pre- and post-test behavior grades for the experimental group that received AAT at $p < 0.05$ (see Table 2). Also, there was no significant difference in pre- and post-test behavior grades for the control group at $p < 0.05$ (see Table 3). The t-test results showed a significant difference between the experimental group's pre- and post-test data for reading at $p < 0.05$ (see Table 4). In addition, there was a significant difference between the control group's pre- and post-test data for reading at $p < 0.05$ (see Table 5). Post-test reading scores were then compared for the experimental and control groups. Results showed no significant differences between the experimental and control post-test reading scores at a $p < 0.05$ (see Table 6).

CHAPTER IV: DISCUSSION

This study looked at the effects of Animal Assisted Therapy on behavior and reading in the classroom. It was hypothesized that the results would show a significant change in behavior (behavior grades) and reading for the group that received Animal Assisted Therapy from a therapy dog. The study looked two fifth-grade classes, one that received AAT and one that did not receive AAT.

Overall, there was no significant difference in pre- and post-test behavior and reading for the experimental group when compared to the control group. There were significant differences between pre- and post-test reading scores for both groups. However, there was no significant difference found between the two groups for post-test reading scores. Therefore, we fail to reject the null hypothesis. For this particular study, Animal Assisted Therapy did not have a significant effect on behavior or reading in the classroom.

Research has shown that Animal Assisted Therapy promotes relaxation, decreases in stress and anxiety, and improves self-esteem (Velde, et al., 2005). AAT has also shown that people associated with animals are viewed as happier, friendlier, and more relaxed (Wesley, et al. 2009). Also, children receiving AAT have shown gains in overall emotional stability and a more positive attitude toward school (Friesen, 2010). Research has also shown that AAT can assist in improving literacy skills (Jalongo, et al., 2004). However, this particular research study did not see the same positive results as the literature. This result may be because the particular behavior that was measured, was behavior grades. Behavior grades were converted to numbers, which may have caused a

regression toward the mean. If the culture of the classroom, mood of the children, or anxiety level of the students were measured, the study may have yielded different results.

Limitations

One of the limitations of this study was the small sample size. This particular school has a high transient population, and students transfer in and out frequently. Some students needed to be eliminated from the study because of not being there for the first four weeks of the 1st nine weeks or last four weeks of the 2nd nine weeks grading period.

Another factor that impacts the study is that this was the first year that Animal Assisted Therapy was implemented. Therefore, the school is still working on implementing the therapy dog in other classrooms consistently. Also, the school is learning as they go and figuring out other ways to use the therapy dog as an intervention.

If this study were to be replicated, it would be beneficial to include several classrooms for the experimental group. Multiple classrooms for the experimental group would focus more on the impact of the therapy dog as an intervention, and not the skill set or experience of the classroom teacher. Also, it would be beneficial to look at a data for the entire school year. A pre/post survey or rating scale could help examine the effectiveness of the intervention and see how students and staff feel about having the therapy dog. It would also be interesting to compare specific behaviors of students in a control group versus experimental group (i.e. fighting, disrespect, disobeying class rules, etc.). Also, it would be a good idea to assess the culture of classroom and mood of the children. Studies examining AAT are important to determine the effectiveness of new interventions occurring in schools.

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Table 1: Pre-test Comparison for Behavior and Reading

Behavior	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Experimental	3.8	0.23	30	0.72	0.48
Control	3.85	0.19			

Reading	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Experimental	61.70	16.72	30	0.25	0.81
Control	63.13	13.48			

*Significance obtained at $p < 0.05$

Table 2: Pre/Post-test Comparison for Behavior, Experimental Group

Experimental	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Pre	3.8	0.23	16	-1.81	0.09
Post	3.87	0.18			

*Significance obtained at $p < 0.05$

Table 3: Pre/Post-test Comparison for Behavior, Control Group

Control	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Pre	3.85	0.19	14	0.09	0.93
Post	3.85	0.13			

*Significance obtained at $p < 0.05$

Table 4: Pre/Post-test Comparison for Reading, Experimental Group

Experimental	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Pre	61.78	16.72	16	-4.85	0.0001*
Post	73.12	12.96			

*Significance obtained at $p < 0.05$

Table 5: Pre/Post-test Comparison for Reading, Control Group

Control	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Pre	63.13	13.48	14	-2.91	0.01*
Post	70.37	10.87			

*Significance obtained at $p < 0.05$

Table 6: Post-test Comparison for Experimental and Control, Reading

Reading	Mean	Standard Deviation	df	t-statistic	Significance (two tail)
Experimental	73.12	12.96	30	-0.65	0.52
Control	70.37	10.87			

*Significance obtained at $p < 0.05$