

CANINE ASSISTED THERAPY AND REMEDIATING READING: A REVIEW OF  
LITERATURE

by

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### Abstract

Learning disabilities affect one out of seven people in the United States. Eighty percent of those identified with a learning disability have been described as reading disabled. The numbers of Americans affected with a reading disability and the lifetime effect of their disability establishes the importance for researching methods of improving reading skills. Research programs have begun using dogs to help encourage reading and improve the reading skills of children. Animal assisted therapy (AAT) is a goal-directed intervention developed and provided by a health or human service professional with expertise within the domain of their profession along with an extensively trained animal. Programs using dogs (animal-assisted therapy) in school and library settings have shown promise in remediating reading deficits and motivating reluctant readers to read. This review of literature will examine the effects of canine-assisted therapy on remediating reading skill deficits and its impact on attitudes toward reading.

## Chapter 1: Introduction

The National Center Learning Disabilities stated 15 million children, adolescents and adults in the United States have learning disabilities; 2.6 million are students (NCLD, 2010). Learning disabilities affect one out of seven people in the United States (NICHCY, 2004). The definition of learning disability used by the federal government states children diagnosed with a learning disability are of at least average intelligence and their academic difficulties are not caused by an emotional disturbance, by social or cultural conditions, or by a primary visual, hearing or motor disability. Eighty percent of those identified with a learning disability have been described as reading disabled (LD Online, 2008). Learning disabilities persist throughout the lifetime but with effective intervention and support, children with learning disabilities can succeed in school and continue on to become successful in their adult lives. Considering current statistics showing one of every seven Americans is affected by a learning disability and the lifetime effect, establishes the importance for researching methods of improving reading skills (LD Online, 2008).

Not all reading difficulties have been caused by learning disabilities (NICHY, 2004). Some students are alliterate, those who can read, but choose not to read. They are considered to be reluctant readers. Although they do not have a reading disability, they are an academic problem and are becoming a societal concern as the number of alliterate people is increasing. As these students use their reading skills less and less, their skills diminish and reading becomes more and more difficult and challenging for them (Beers, 2003). Alliteracy supports the need for researching methods to not only improve reading skills, but to increase intrinsic motivation to read.

Research has been conducted to understand of the influence of animals on humans. According to Jalongo, Astorino, and Bombay (2004), the presence of a relaxed canine

companion can reduce stress, lower heart rate, and reduce other observable signs of anxiety. These researchers claimed the presence of a calm, attentive dog lessens stress more than the presence of an adult or a supportive friend during a medical check-up. Research has supported the belief of the ability of companion animals to reduce stress, and lower heart rate and blood pressure (Katcher, Friedmann, Beck, & Lynch, 1983). Julie Miller and Katherine Connor, nurses at Trinity Mother France hospital and authors of *Going to the Dogs...for Help*, found dogs not only reduced stress but provided other healthy benefits (2000). Dogs can ease loneliness, foster trust, improve communication, improve cognitive functioning, reduce the need for medication by providing distraction from pain, and provide motivation for patients' quick recovery. Throughout history, people have used dogs (and other animals) in therapeutic settings but only in the past few decades have animals been used formally in therapeutic settings, including school, hospitals, out-patient programs, and prisons (Chandler, 2001).

With this research presenting the benefits of dogs lowering anxiety, programs have begun using dogs to help encourage reading and improve the reading skills of children. Animal assisted therapy (AAT) has been a goal-directed intervention developed and provided by a health or human service professional with expertise within the domain of their profession along with an extensively trained animal. AAT was designed to advance improvement in physical, social, emotional, and cognitive functioning (Delta Society, 2008). The Reading Education Assistance Dogs (R.E.A.D.) program has been one of the most well-known reading therapy programs which was begun by Intermountain Therapy Animals (ITA), a non-profit organization, in 1999 (Jalongo, Astorino, & Bomboy, 2004). The mission of the R.E.A.D. program has been "to improve the literacy skills of children through the assistance of registered therapy teams as literacy mentors" ([www.therapyanimals.org](http://www.therapyanimals.org)). Therapy teams have been comprised of a dog and

its handler. A teacher must also be involved planning goals for the therapy plan. The dogs are extensively trained and tested for health, safety, appropriate skills, and temperament. Their handlers also undergo training and work together with the teacher who implements the program. The dogs become reading companions to the student. The canine companion will listen while a student reads to it. The children are able to read at their own pace. The dogs do not judge, laugh, or criticize the student's reading, reducing the child's worry of embarrassment due to making mistakes in front of their peers.

### Research Question

Two research questions guided this review of literature: How does canine assisted therapy impact students' attitude toward reading? How does canine assisted therapy impact remediating reading skill deficits?

### Definition of Terms

Alliterate – the quality of being able to read but uninterested in doing so.

<http://www.merriam-webster.com/dictionary/aliterate>

Animal assisted therapy (AAT) -- a goal-directed intervention developed and provided by a health or human service professional with expertise within the domain of their profession along with an extensively trained animal. AAT is planned for individual children as part of a

curriculum. <http://www.therapyanimals.org>

Animal-assisted activities (AAA) – animal-assisted activities are offered to a group of children on a short-term basis. <http://www.therapyanimals.org>

Learning disability-- a neurological disorder; children diagnosed with a learning disability are of at least average intelligence and their academic difficulties are not caused by an emotional disturbance, by social or cultural conditions, or by a primary visual, hearing or motor disability

<http://www.ldonline.org/ldbasics>

R.E.A.D.—a therapy program model using trained dogs and their trained handler to help children improve their reading skills by allowing the child to read aloud to a dog

<http://www.therapyanimals.org>

Therapy team-- comprised of a trained dog and its trained, human handler

<http://www.therapyanimals.org>

Zoonosis—any infectious disease that can be transmitted from animals to humans

<http://www.merriam-webster.com/dictionary/zoonosis>



## Chapter II: Literature Review

The purpose of this literature review was to describe research available on animal-assisted therapy and reading; specifically, animal-assisted therapy with dogs and remediating reading skills deficits. The review examined information on the use of pet therapy in schools, libraries, and after school programs and its impact on improving attitudes of children toward reading and remediation of reading skill deficits. Recommendations have been made regarding the use and effectiveness of animal-assisted therapy.

### *History*

Humans and dogs have had a close relationship for millions of years. Research using mitochondrial DNA suggests the domestic dog evolved from wolves in Asia approximately 15,000 years ago (Savolainen, Zhang, Luo, Lundeberg, & Leitner, 2005). Pictures of dogs exist on numerous cave paintings (Wendt, 1996). Throughout history, dogs have served as companions as well as other roles such as protectors, guards, hunters, war dogs, draft animals, and herders (Wendt, 1996). The special bond between dogs and humans has been displayed by the treatment provided upon death of a companion dog. Archaeological evidence shows people have been ritualistically disposing of their dogs' remains, most commonly by burial, for the past 12,000-14,000 years (Morey, 2006). Dog burials, including some combined with human remains, have been found on every continent except Antarctica. According to Morey, "the routine ritualistic burial of dogs reflects a social bond between live dogs and people that has been the very basis for their domestic relationship" (p. 169).

### *Dogs in therapeutic settings*

The use of dogs and other animals in therapeutic settings was first observed in England, as early as 1792 at the York Retreat, which integrated outdoor activities, birds and rabbits in their

treatment plan for individuals who were mentally ill (Beck & Katcher, 1996; Hooker, Freeman, & Stewart, 2002; Jalongo, Astorino, & Bomboy, 2004; Parshall, 2003; Serpell, 2000). According to Serpell, numerous mental institutions in 19<sup>th</sup> century England had pets. Florence Nightingale, the legendary British nurse, wrote about the benefits of pets for sick patients (Hooker, Freeman, & Stewart, 2002; Jalongo, Astorino, & Bomboy, 2004; Pashall, 2003; Serpell, 2000). In the United States, the idea of using animals in a therapeutic setting was first mentioned in the 1919, in letters between Superintendent Dr. W. A. White and Secretary of the Interior F. K. Lane regarding Government Hospital for the Insane in Washington, D. C. Lane requested the institution provide psychiatric patients with dogs to serve as their companions (Hooker, Freeman, & Stewart, 2002; Strimple, 2003). Serpell (2000) reported regardless of the evident success of animal-facilitated care provided by institutions in the 19<sup>th</sup> century, the introduction of scientific medicine nearly eliminated the use of animals in hospital settings by the early 20<sup>th</sup> century.

#### *Dogs in service to humans*

Dogs continue to serve humans not only as pets but as working dogs. They function as police canines, insect detecting dogs, bomb and drug sniffing dogs, and many other roles (Hart, 2000). Dogs have been trained to use their extremely sensitive noses to sniff out cancer. These cancer detecting dogs were trained to lie down or sit in front of a cancerous sample and to ignore a sample from a healthy control (Osterweil, 2006). Service dogs are another type of working dog. Service animals have been individually trained to carry out tasks for people who have disabilities (U.S. Department of Justice, 2002). A well known example of service dogs are seeing-eye dogs or guide dogs which were first used in Germany during World War I (Beck, 2000). The first American school to train guide dogs opened following World War I (Duncan & Allen, 2000). Service animals continue to perform many other roles such as hearing dogs which alert their

owner to sounds such as doorbells, smoke alarms and telephones, and seizure dogs which can sense seizures earlier than the owner and help cope during and following the seizure. Service dogs have helped people with mobility impairments by opening doors and retrieving dropped objects and other service dogs have assisted people with mental or emotional impairments by providing needed comfort or alerting the owner to rising anxiety levels (Duncan & Allen, 2000).

In 1983, Friedmann, Katcher, Thomas, Lynch, & Messent detected lower blood pressures, a physiological measure of stress, in children reading aloud with a dog present as compared to reading without the dog present. This discovery illustrated an important benefit of children reading to dogs. According to Clark (2003), research on anxiety and stress described how the two inhibit learning (Clark, 2003). Allington & Strange (1980) explained the neocortex of the brain does not function well when stressed or threatened. When students see classroom activities as threatening, the learning which should be occurring in the neocortex is hindered. Clark (2003) also maintained that if reading to dogs can create a less stressful atmosphere, then children will be better able to learn and make progress with their reading abilities. Clark suggested students reading to a dog acts as a motivating factor to encourage children to read. The children have liked the dogs and have enjoyed reading to them. It is important to motivate students, especially those who have not had success with reading or who are reluctant readers. Harvey and Goudvis (2007) asserted the need for children to read extensively over time. The amount of print they are exposed to has positive effects on their reading ability. The more children read, the better readers they become (Harvey & Goudvis, 2007).

#### *Reading Education Assistance Dogs (R.E.A.D.)*

In 1999, Sandi Martin, registered nurse and board member of Intermountain Therapy Animals (ITA), a non-profit human service organization began the Reading Education

Assistance Dogs (R.E.A.D.) program (Martin, 2001; Jalongo, Astorino, & Bomboy, 2004).

Martin examined the benefits of therapy animals in hospitals and care facilities, her own love of reading and of dogs and believed the benefits would extend to helping students improve their reading abilities (Martin, 2001).

The Reading Education Assistance Dogs (R.E.A.D.) program, implemented by Intermountain Therapy Animals, has become one of the most well-known reading therapy programs (Jalongo, 2005). The registered therapy dogs and their owner/handler volunteer to work as teams to help students improve their reading skills. All services have been free of charge to both the client and facility. Intermountain Therapy Animals has acknowledged other groups and individuals reading to dogs before their program began, but ITA was the first to build a structured and true literacy program model (Intermountain Therapy Animals, 2006). The first true setting for the R.E.A.D. program was the Salt Lake City Public Library in 1999 (Gerben, 2003; Intermountain Therapy Animals, 2006). The pilot program was welcomed and became a regular highlight of the library. The program extended to many other settings, including daycare centers, bookstores, Head Start Centers, Boys and Girls Clubs, and juvenile detention facilities . Today, R.E.A.D. is implemented in many libraries, schools, and other settings all over the country and world. (Clark, 2003).

It is important to note some of the concerns of parents and administrators have had about the programs or bringing dogs into schools, libraries and other settings (Clark, 2003; Jalongo, 2005). There has been concern in relation to bringing dogs into public areas because of allergies. Currently, all public places are required by law to permit entry of service dogs. Although therapy dogs are not considered service dogs and therefore not entitled to entry, R.E.A.D. expects the therapy dogs to be recently bathed, brushed, groomed, teeth brushed, and nails trimmed shortly

before therapy sessions. The dog handlers should also use anti-dander sprays to reduce allergens. It has also been suggested that children with severe allergies should probably not participate in animal-assisted therapy (Intermountain Therapy Animals, 2006). Service dogs have not been required to meet these strict regulations suggesting the dogs participating in R.E.A.D may be less likely to cause allergy problems than service dogs (Clark, 2003; Martin, 2001).

Liability has also been a concern of administrators when considering implementation of an animal-assisted therapy program. Dogs which participate in R.E.A.D. programs must be registered. In order to become registered, the dogs must pass rigorous evaluations and tests. They have also been covered by insurance through the therapy organization that certified them (Clark, 2003; Jalongo, Astorino, & Bomboy, 2004). Schools, libraries, and other facilities implementing the programs do not need to purchase additional insurance coverage which could otherwise be a significant barrier preventing application of the program.

Sanitation must also be considered when deciding upon beginning an animal-assisted therapy program. A common concern has been the dog might be a carrier of zoonosis (diseases or infections transmitted from animals to humans). The potential to transmit disease is minimal if responsible safety measures are taken. The dogs have been required to have routine veterinarian checks to ensure health. Proper hand washing has been encouraged before and after the visits with the dogs. Therapy dogs have been trained not to lick or scratch also controlling possible infection. In case of the rare occurrence of the dog vomiting, urinating or defecating in the school or library, the handlers have been trained and are responsible for appropriate clean up (Jalongo, Astorino, & Bomboy, 2004).

Safety of those participating in a therapy program has also been a concern. R.E.A.D. program dogs have been rigorously evaluated. In order to become a certified therapy dog and

maintain that certification, the dogs must be graduates of basic obedience classes as well as other specialized training. The handler must also undergo training to become a certified handler. It has also been the responsibility of the handler to keep their dog current with veterinary visits.

Trained, registered therapy dogs have been capable of handling situations which would be dangerous with an untrained family pet (Jalongo, Astorino, & Bomboy, 2004). In addition to the safety of the children involved in therapy, safety of the dogs must also be taken into account. Young children who are not experienced with dogs may become aggressive or antagonistic toward the dog. The appropriate handling and behavior around dogs should be demonstrated before therapy begins. Children with emotional or behavioral impairments require very close supervision when in contact with the dogs. The handler must be alert to behavior issues and remove the dog from a possibly dangerous situation. Some children may not be suited to animal-assisted therapy. It has been and continues to be important for all adults involved to be diligent in watching for any signs of difficulty (Jalongo, Astorino, & Bomboy, 2004).

#### *R.E.A.D and literacy instruction*

The mission of the R.E.A.D. program has been “to improve the literacy skills of children through the assistance of registered therapy teams as literacy mentors” ([www.therapyanimals.org](http://www.therapyanimals.org)). The reading activities employed by R.E.A.D have been consistent with best practices in literacy instruction as described by Morrow, Gambrell, & Pressley (2003). Therapy teams have been comprised of a dog and its owner/handler. Other animals such as cats and birds have been used in R.E.A.D programs but dogs are by far the most common animal used (Intermountain Therapy Animals, 2006). A teacher has also been involved in planning goals for the therapy plan. The dog handlers have also been trained and work together with the teacher who is implementing the program. In short, the dogs become reading companions to the student.

The canine companion listens while a student reads aloud to it. The children are able to read at their own pace. Researchers claim the child's worry of embarrassment due to making mistakes in front of their peers is reduced due to the dogs' inability to judge, laugh, or criticize the student's reading. The program has paired children with a dog and its handler to work on the child's reading skills. Further, the program has claimed to increase students' enthusiasm for reading, promote confidence in their reading ability, and develop reading skills. The children have made mistakes in their reading but have not been corrected or rushed through their book by their canine companion. The use of dogs in animal assisted therapy has shown promise for motivating children to complete academic activities, not only reading skills but also across the curriculum (Nebbe, n.d.).

In the school setting, R.E.A.D programs have tended to use an animal-assisted therapy (AAT) model. Usually, the same children have read to the same dogs and human handlers in order to build a strong bond and trusting relationship. R.E.A.D. therapy sessions have typically lasted 20-30 minutes weekly throughout one semester or the full school year. Teachers and/or reading specialists have selected students they believe will most benefit from pet therapy. The criteria for selection include lack of confidence in reading, difficulty with English, short attention span, below average reading scores for age and grade. Pre- and post-testing has been administered using the school's customary reading tests to gather data determining student improvement (or lack thereof) and efficacy of the program (Martin, 2001; [www.therpyanimals.org](http://www.therpyanimals.org)).

Programs in public libraries and after school centers have differed from programs offered in schools. These programs have normally run as animal-assisted activities (AAA) model. Animal-assisted activities are similar to animal-assisted therapy but they are offered to a group

of children on a short term basis rather than individually over a longer period. Children participating in this type of program may or may not have been identified as a struggling reader. Students are chosen based on reading ability for the programs in schools, whereas in libraries and other locations, children normally participate on a first come, first served basis regardless of reading ability. These programs have been open to all children, not just those referred by an education professional (Jalongo, 2005). Another difference between programs run at schools and those at libraries has been length of time. Programs at schools have typically taken place over a semester or full year and allowed each child to read to the same dog on a regular basis. Public libraries have offered the program over a shorter, more irregular basis (Martin, 2001). Sometimes this type of program taken place only once in a particular library or may run a few weeks then not again until several months have passed.

One of the initial studies of a program in which children read to dogs was done by Sandi Martin (2001). The study took place at a public elementary school in Utah. Ten students, aged 5-9 years old, who were identified as high risk by the school and whose reading skills were below grade level, spent 20 minutes a week reading individually to dogs. The reading specialist at the school evaluated each student quarterly using both informal reading assessments and nationally recognized literacy tests (TORC-Test of Reading Comprehension, Northwest Evaluation Association/MAP-Measures of Academic Progress) over 15 months. The reading specialist reported noteworthy improvements in reading scores and some children began reading above their grade level. One child's score increased from 3.4 grade reading level to 6.8 grade level in the fifteen months of the program. It was also noted the students' teachers observed benefits beyond improved reading skills. Anecdotal data collected and logged through teacher and parent observation showed improved self-confidence and self-esteem, school attendance increased as



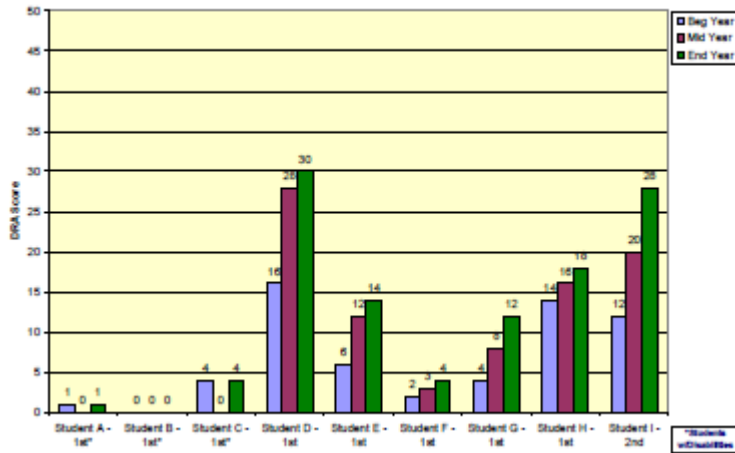
well as attendance of extracurricular activities, borrowing books from the school library increased and improved hygiene.

In 2003, Robin Briggs Newlin, library media coordinator of the Alderman Elementary School in Wilmington, North Carolina, conducted a study of the animal-assisted therapy practiced at her school. The study consisted of 15 second grade students who were determined by teachers and the school social worker to be at-risk and consistently tested at least one grade level below their peers in reading. Once a week, a therapy team was paired with a student. Each student read age-appropriate material to their canine companion for 20 minutes. As part of the school's reading program the reading specialist used Accelerated Reader tests to measure comprehension. Each month reading scores were examined and compared to the previous month to check progress and growth. The students must have correctly answered 85 percent of test questions before they could move ahead to the next book. One student who began the program at the start of the school year at a first grade reading level, ended the school year at a third grade reading level. Newlin reported most of the participants showed improvement of their reading skills by at least two grade levels over the full school year. Increase of self confidence levels was also noticed through observation by teachers and parents.

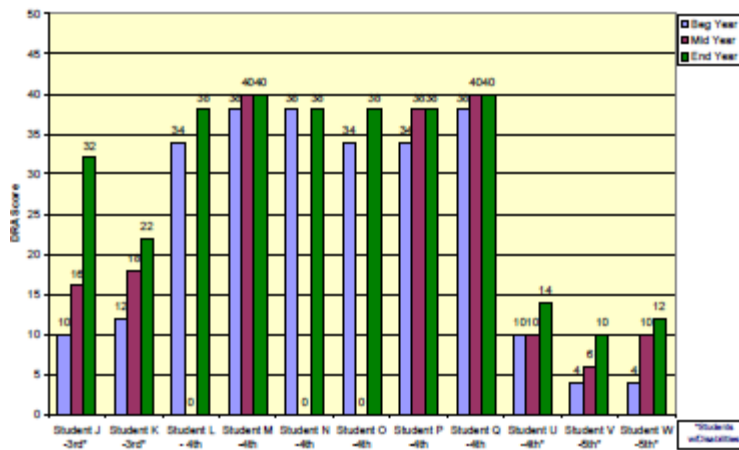
Intermountain Therapy Animals (ITA, 1996-2009) reported a R.E.A.D. program called the Tales of Joy was implemented at five elementary schools in a school district in New Mexico during the 2006-2007 school year. Twenty-four students in grades one through five participated in the program. The R.E.A.D. team worked with each student for a half hour per week for approximately 33 weeks. The Developmental Reading Assessment (DRA) and the Northwest Evaluation Association Measure of Academic Progress was given to the participants at the beginning, middle, and end of the school year to obtain and track their reading scores. The DRA

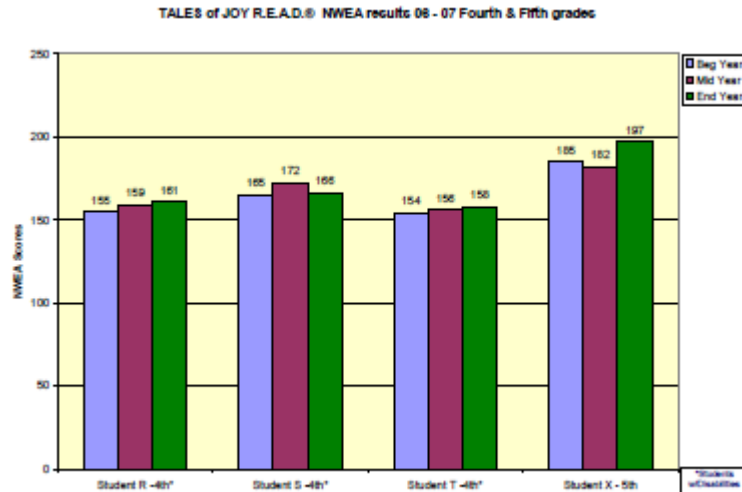
or NWEA-MAP scores for each student who participated are shown in the graphs below (ITA, 1996-2010).

TALES of JOY R.E.A.D.® DRA results 08 - 07 First & Second grades



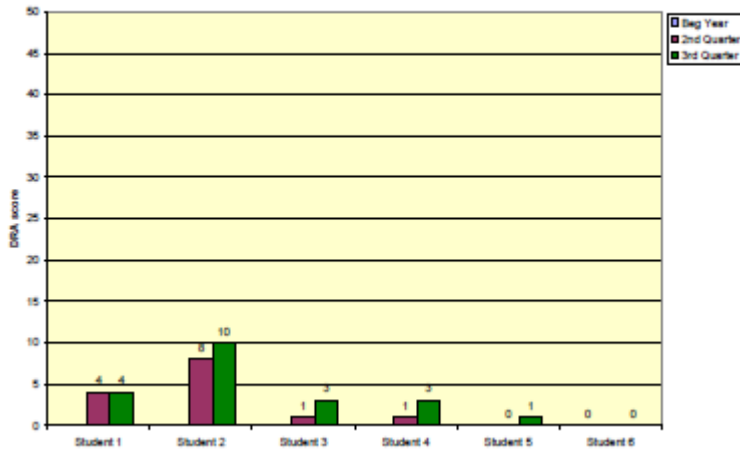
TALES of JOY R.E.A.D.® DRA results 08 - 07 Third - Fifth grades



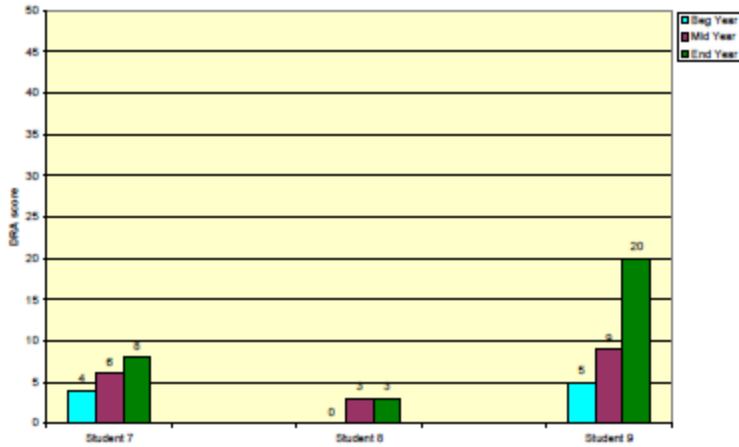


The school district continued the Tales of Joy program continued during the 2007-2008 school year. This year the program included six elementary schools. Twenty-nine students received the reading intervention. The R.E.A.D teams worked with each student for a minimum of one –half hour per week for approximately 32 weeks. The Developmental Reading Assessment (DRA) and the Northwest Evaluation Association Measure of Academic Progress was given to the participants at the beginning, middle, and end of the school year to obtain and track their reading scores. The graphs below show the beginning, middle, and end of year DRA or NWEA-MAP scores for each student who participated (ITA, 1996-2010).

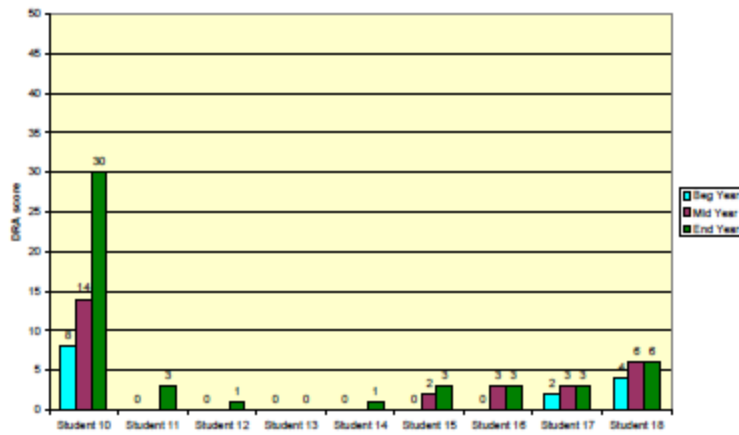
TALES of JOY R.E.A.D. Program - Kindergarten DRA scores 07 - 08  
Students w/Disabilities



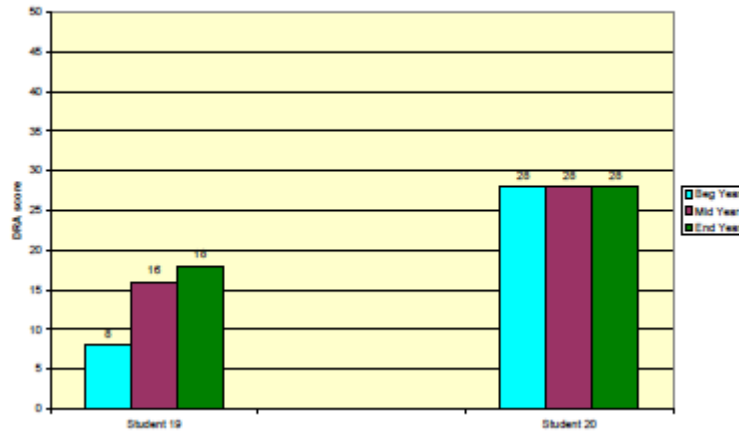
TALES of JOY R.E.A.D. Program Data - First Grade DRA scores 07 - 08  
Students w/Disabilities



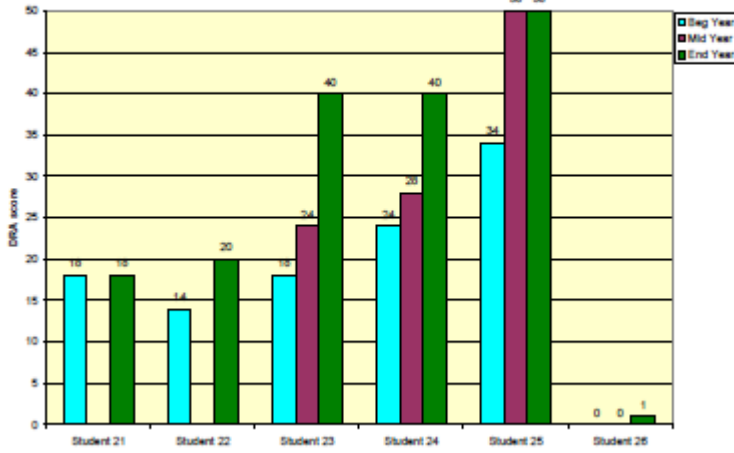
TALES of JOY R.E.A.D. Program Data - Second Grade DRA scores 07 - 08  
Students w/Disabilities



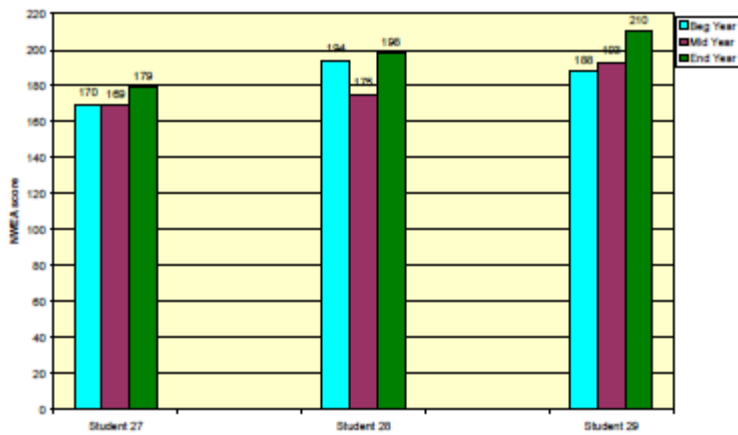
TALES of JOY R.E.A.D. Program Data - Third Grade DRA scores 07 - 08  
Students w/Disabilities



TALES of JOY R.E.A.D. Program Data - Fifth Grade DRA scores 07 - 08  
Students w/Disabilities

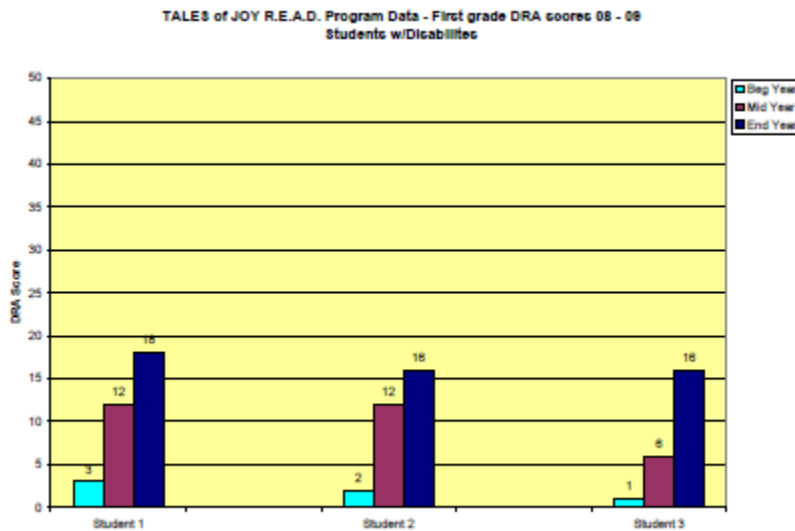


TALES of JOY R.E.A.D. Program Data - Fifth Grade NWEA scores 07 - 08  
Students w/Disabilities

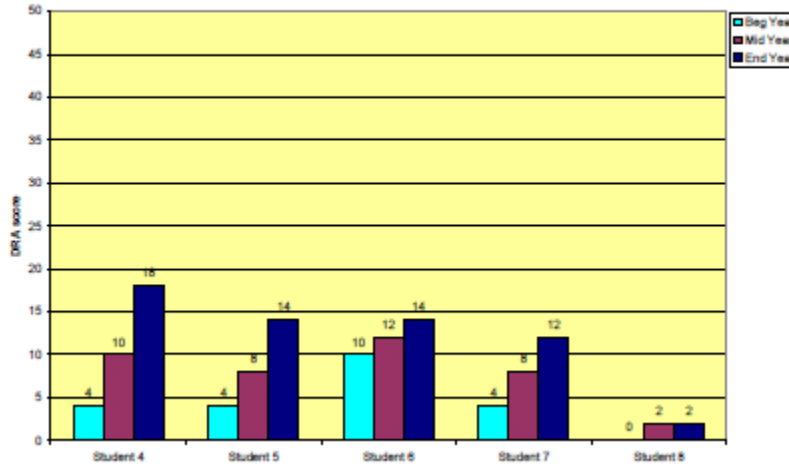


The Tales of Joy was implemented for a third time during the 2009-2009 school year at the same six elementary schools in the school district in New Mexico during the 2008-2009. Twenty-three students from grades one through five participated in the program for a minimum of a half hour per week for 32 weeks. Either the Developmental Reading Assessment (DRA) or the Northwest Evaluation Association Measure of Academic Progress was given to the participants at the beginning, middle, and end of the school year to obtain and track their reading scores. The graphs below show the DRA or NWEA-MAP scores of each student who participated in the R.E.A.D. program (ITA, 1996-2010).

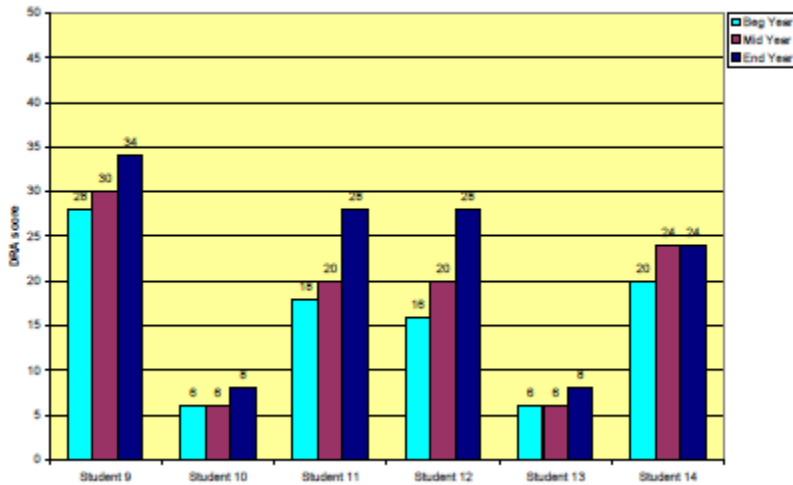
[http://www.therapyanimals.org/documents/TOJ\\_End\\_of\\_Year\\_0809.pdf](http://www.therapyanimals.org/documents/TOJ_End_of_Year_0809.pdf)



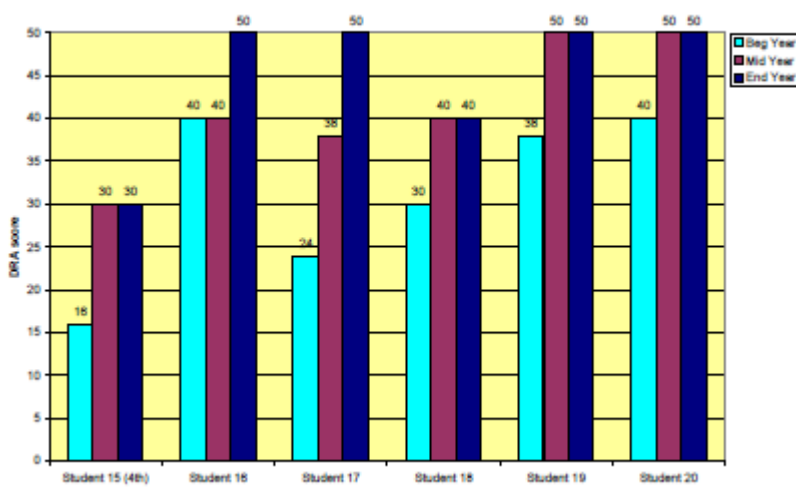
TALES of JOY R.E.A.D. Program Data - Second Grade DRA scores 08 - 09  
Students w/Dicabillities



TALES of JOY R.E.A.D. Program Data - Third Grade DRA scores 08 - 09  
Students w/Dicabillities



TALES of JOY R.E.A.D. Program Data - Fourth & Fifth Grades DRA scores 08 - 09  
Student w/Dicabillities



Another R.E.A.D project was implemented by Jo McGinnis during summer 2009 in Florida. The twelve participants were struggling readers in either kindergarten or first grade. Therapy lasted for eight weeks after which reading scores were evaluated. Eleven of the twelve children improved from one to four grade levels (Intermountain Therapy Animals News, 2009).

The relationship between animals (especially dogs) and humans has been a close and important one since humans lived in caves. Through the years, dogs have been welcomed into the world of therapy. Studies have shown the usefulness of dogs as working dogs, service dogs and therapy dogs. Research regarding dogs used as therapy for struggling readers is promising and impressive.



### Chapter III: Results and Analysis Relative to Problem

Dogs were domesticated from wolves approximately 15,000 years ago (Savolainen, Zhang, Luo, Lundeberg, & Leitner, 2005). Since then dogs have become not only our companions, but service dogs, helping the blind, hard of hearing, physically disabled, and emotionally disabled people lead more independent lives. Dogs serve humans as workers by doing jobs such as bomb and drug detecting, insect detectors, guard dogs, police canines, and many other jobs. Dogs have been used in the therapeutic setting since the 1700's (Beck & Katcher, 1996; Hooker, Freeman, & Stewart, 2002; Jalongo, Astorino, & Bomboy, 2004; Parshall, 2003; Serpell, 2000).

In recent years, dogs have been used in animal-assisted therapy. Research has shown lowered blood pressure of students reading aloud to a dog as compared to reading without the dog (Friedmann, Katcher, Thomas, Lynch, & Messent, 1983). Lowered blood pressure is a sign of decreased stress and anxiety rates. Stress and anxiety can inhibit learning; therefore, reading to dogs may help improve reading skills. Reading programs employing animal-assisted therapy have been in use for approximately ten years. The first structured literacy program model, Reading Education Assistance Dogs, has been implemented by Intermountain Therapy Animals. There are other programs similar to R.E.A.D but most are based on the R.E.A.D. model. Results of several studies of the R.E.A.D. program and other similar programs have shown positive effects on the reading abilities of the participants. Almost all the participants experienced increased reading abilities, increased motivation to read, increased self-confidence and self esteem. Other positive benefits seen as a result of R.E.A.D were increased school attendance, increased involvement in extracurricular activities, a sense of pride, improved hygiene, and increased library use (Martin, 2001). These findings have indicated animal-assisted therapy is of

benefit to students in improving their attitudes toward reading and remediating reading skill deficits.

#### Chapter IV: Recommendations and Conclusion

One out of seven people in the United States have a learning disability. Eighty percent of those identified with a learning disability have been described as reading disabled. With 2.6 million students classified as having reading disabilities in our nation's public schools, every teacher can expect to find students with learning disabilities in their classroom. Success for these students requires a focus on individual achievement, individual progress, and individual learning. Effective programs to help students improve their reading skills are necessary. Research showing positive effects of canine-assisted therapy on the remediation of reading skill deficits has led to the recommendation of the implementation of these programs in more schools and libraries.

Further research of canine and other animal-assisted therapy is suggested. Future research should cover a large geographic area and a large sample of students. It is also recommended the research continue over an extended time period (i.e. several years following the progress of the same children). Research should also include studying students at various age and grade levels to discover if the effects of AAT continue to benefit students of all ages.

This review of literature suggested reading programs utilizing canine-assisted therapy in public libraries and school settings are beneficial. Most participants in the research showed improvement of their reading skills. Motivation to read also increased. Unexpected benefits to canine-assisted therapy were also seen, including, but not limited to, increased self-confidence and self-esteem, improved school attendance, increased participation in extra-curricular activities, and increase in library use. Continuing research and expanding the use of canine-assisted therapy in classrooms and libraries is recommended.

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