

Review of the Research: Are Therapy Dogs in Classrooms Beneficial?

Jerri J. Kropp, Ph.D, CCLS, Georgia Southern University, Statesboro, Georgia, Associate Professor,
School of Human Ecology
and

Mikaela M. Shupp, BBA, Georgia Southern University, Statesboro, Georgia (alumna), Academic
Advisor, College of Business

Abstract

Research findings on the presence of a therapy dog in the classroom are summarized. The authors reviewed 30 articles, book chapters, and other sources on the topic of the various uses of dogs in classrooms, published between 2001 and 2017. Ages studied ranged from 3 years to adolescence (high school). In our analysis, three categories of therapeutic benefit emerged: a) increased reading and language skills, b) social, emotional, and humane gains, and c) improved gross motor skills. Numerous studies have found that literacy skills can be improved from reading to dogs and that children gain confidence in reading and report an increased love of reading (Fine 2015). Therapy dogs can also provide stability and comfort to children who are living in poverty or abusive homes. Caring for a classroom animal teaches responsibility, builds confidence, and gives children a sense of pride and accomplishment. Common concerns and objections to having a therapy dog in the classroom are discussed, as well as recommended policies and procedures for having a therapy dog program in a school setting.

Introduction:

Research over the past 30 years indicates that therapy dogs may offer physiological, emotional, social, and physical support for children (Friesen, 2010). The use of therapy dogs with children is successful due to children's natural tendency to open up to animals and the stress moderating effect of the calm and nonjudgmental presence of a therapy dog (Jalongo, Astorino & Bomboy, 2004). There has not only been an increase in the use of therapy dogs in classrooms in recent years, but the number of articles citing empirical research has greatly increased in the last ten years.

Terminology used:

Various terms are used to describe the use of therapy dogs. The preferred terms are: a) Animal-Assisted Activities (AAA) which provide opportunities for motivational, educational, or recreational benefits to enhance quality of life, and are delivered in a variety of settings by volunteers or trained professionals with animals that meet specific criteria; there are no specified treatment goals and the visit content is spontaneous; b) Animal-Assisted Education (AAE), which is a goal-oriented, planned intervention directed by a general education or special education professional, c) Animal-Assisted Intervention (AAI), which are goal oriented interventions which incorporate animals in health, education, and human services for improved health and wellness and/or therapeutic gains, and d) Animal-Assisted Therapy (AAT), which is a planned, goal directed therapeutic intervention directed by health and human services providers as part of their profession, in which an animal that meets specific criteria is an integral part of the treatment process. According to Pet Partners, AAI, AAA, AAT and AAE are the preferred terms, and the term "pet therapy" should be avoided because it is inaccurate and misleading (<https://petpartners.org/learn/terminology>).

It is important to note that there are four distinct categories of animals used for various reasons and with various populations. A **certified therapy dog** provides comfort and affection, and their handlers are volunteers who visit hospitals, schools, nursing homes, hospice, libraries, and other facilities. These therapy animals have no special rights and must have the permission of the facility to visit. There are usually requirements such as grooming, providing veterinarian records, and proof of certification. **Assistance animals** (also called service dogs) are individually trained (not by the owner) to do work or perform tasks for people with specific disabilities, such as guide dogs for the blind, alerting people who are deaf, calming a person who has post-traumatic stress disorder (PTSD), dogs who provide mobility assistance, or communicate medical alerts for individuals with diabetes or epilepsy, for example. These dogs also greatly enhance the quality of the lives of their owners with a new sense of independence and freedom. Assistance dogs are considered working animals, not pets. According to the Americans with Disabilities Act (ADA), these dogs are permitted to accompany a person with a disability almost anywhere, including restaurants, businesses, and airplanes. An **emotional support dog**, or comfort animal, is a pet that provides therapeutic support to a person with an emotional or mental illness and must be prescribed by a licensed mental health professional for a person with these conditions. The prescription must state that the individual has an impairment that substantially limits life activities and is necessary for the person's mental health. According to the ADA, emotional support animals do not have the same rights to public access as service dogs, but may travel with their owners on an airplane and may live with their owner in locations covered by the Fair Housing Amendments Act (FHAA). **Facility dogs** are regularly present in a residential or clinical setting. They may live with a handler who is an employee of the facility and come to work each day or may live at the facility full time under the care of a primary handler. Facility dogs receive special training and may be used for AAA, AAE, or AAT. These animals do not have special rights of access in public unless they are accompanying or supporting a person with a disability. Although many different types of animals can be used for therapeutic purposes, in this paper, the authors only included studies that used dogs.

Leading organizations that certify dogs:

Therapy animal teams are certified, which implies that a third party has assessed the handler's mastery of knowledge and skills, and the dog's suitability and temperament to be a therapy animal. There are three leading organizations that certify therapy dogs. **Pet Partners** (formerly Delta Society) was formed in 1977. Built on the organization's research foundation, programs were focused on providing direct services in local communities. Pet Partners was the first comprehensive, standardized training in animal-assisted activities and therapy for volunteers and healthcare professionals. Over 15,000 animal/handler teams across the US are registered with Pet Partners, making approximately three million visits per year (Pet Partners 2017). **Therapy Dogs International (TDI)** is a volunteer group organized to provide qualified handlers and their therapy dogs for visitations to institutions, facilities, and other places where therapy dogs are needed. Founded in 1976 so that dogs could be tested, certified, and insured as volunteer therapy dogs. TDI is the oldest registry for therapy dogs in the US, with dogs working in the US and Canada and some other countries (Therapy Dogs International 2017). **Intermountain Therapy Animals** is a non-profit organization bringing animal resources to human needs. The mission statement of the organization is enhancing quality of life through the human-animal bond. They specialize in the areas of physical, occupational, speech, and psychotherapies, as well as special education. They also founded the Reading Education Assistance Dog (R.E.A.D.) program in 1999 to improve children's reading and communication skills by reading to registered therapy dogs and their volunteer handlers who go to schools, libraries, and other settings.

Method:

The authors reviewed 30 articles, book chapters, and other sources on the topic of the various uses of dogs in classrooms, published between 2001 and 2017; 25 out of 30 articles (83%) were published in the last ten years. Ages studied ranged from 3 years to adolescence (high school); however the majority of the articles (26 out of 30; 87%) focused on children in elementary school. Four studies focused specifically on preschoolers. Three major categories of therapeutic benefit emerged: a) increased reading and language skills (R), b) social, emotional, and humane gains (SE), and c) improved gross motor skills (GM). In addition, several articles discussed common concerns and recommendations for implementing the practice of having a dog in the classroom. Refer to Table 1 for first author, year, category, population, and a summary of main findings.

Table 1: Summary of results from article reviews

First Author	Year	Title	Categ.	Population	Important Findings
Anderson, K	2006	The value of a dog in a classroom of children with severe emotional disorders	SE	Self contained classroom of 6 elementary aged children diagnosed with severe emotional disorders	-Qualitative analysis of data indicated that the dog's placement in the classroom: <ul style="list-style-type: none"> -Contributed to students' overall emotional stability -Improved students' attitudes toward schools -Facilitated students learning lessons in responsibility, respect, and empathy
Anderson, K	2007	Who Let the Dog In? How to Incorporate a Dog into a Self-Contained Classroom	SE	Self contained classroom of 6 elementary aged children diagnosed with severe emotional disorders	-Results indicated: <ul style="list-style-type: none"> -Students' attitudes toward school improved. -Students found companionship with the dog. -Students used the dog to remain in control of their emotions and behaviors in order to prevent them from entering emotional crisis. -Students used the dog as a de-escalation tool to calm their minds and bodies when they did enter into emotional crisis. -Students' learning was extended by fostering growth in respect, responsibility, and empathy.
Bacon, C	2014	Bringing therapy dogs to your school: A practical guide for school administrators and educators	SE	School age	-Will help school administrators and educators better understand the benefits of having a therapy dog in a school setting. <ul style="list-style-type: none"> -Provides an overview of potential benefits, common objections, goals of therapy dog programs in schools, and steps in implementing a dog therapy program.
Bassette, L	2013	The Effects of a Dog Reading Visitation Program on Academic Engagement Behavior in Three Elementary Students with Emotional and Behavioral Disabilities: A Single Case Design	SE/R	3 elementary aged students w/ emotional behavioral disabilities	-Results indicated that all three students experienced increases in on-task behaviors during intervention and maintained improvements over time. <ul style="list-style-type: none"> -"It was not until the dogs were present during intervention that they became engaged in the reading and more willing to read aloud" (252).
Beetz, A	2013	Socio-emotional correlates of a schooldog-teacher-team in the classroom	SE	25 students in third grade (Germany)	-"The dog-class students reported a stronger improvement with regard to positive attitude toward school and positive emotions related to learning" (1).
Brelsford, V	2017	Animal-Assisted Interventions in the Classroom-A Systematic Review	SE/R		-Review of 25 papers relating to animal-assisted interventions conducted in educational settings. <ul style="list-style-type: none"> -Studies involved three different animals: guinea pigs, rabbits, and dogs. -Studies were grouped within eight topics, including, reading ability, emotional stability and learning, and social functioning and interpersonal skills. -"The majority of the studies reported beneficial effects on cognitive and socio-emotional behavior and physiological responses" (28). -Recognized the need for more robust research with increased sample sizes, adequate control groups, and strict testing protocols.

Cambria, N	2010	Therapeutic Dog Gets High Praise For His Role In Preschool Classroom	SE	3-5 year old preschool students	-When the therapy dog is present, "the whole feeling of the classroom is calmer" (2). -Waco, the therapy dog, participated in all classroom activities-toothbrushing time, picking up toys, and opening the door to the playground.
Chandler, C	2001	Animal-Assisted Therapy in Counseling and School Settings	SE		-"Animals in counseling sessions and the classroom facilitate an atmosphere of trust, nurturance, and relationship building" (2). -Overview of benefits of animals in classrooms.
Education World	2013	Lessons Learned from Dogs in the Classroom	SE	-Grades K-2, 3-6 -Alternative education program in a high school	-The therapy dog helped deliver eight life lessons, which included the importance of waiting, being friendly to everyone, and making sure to eat good foods. -The therapy dogs in the high school were part of a plan to help students meet graduation requirements. Morgan, the therapy dog, calmed anxious students and served as a reward to students who stayed on task with no emotional outbursts.
Esteves, S	2008	Social Effects of a Dog's Presence on Children with Disabilities	SE	Three 5-9 year old children with developmental disabilities	-"The study showed that the presence of the dog during sessions increased positive initiated interactions toward the teacher and the dog for all three participants" (13). -Authors also noted that the rate of occurrence of negative interactions decreased with the intervention.
Friesen, L	2009	How a therapy dog may inspire student literacy engagement in elementary language arts classroom	R	Elementary aged children	-Provided an overview of Guthrie's research on literacy engagement and potential application using therapy dogs. -Provided anecdotal evidence of impact using author's personal therapy dog, Tango. -"Tango united them [children] in a common and authentic purpose for learning, and therefore served as the springboard for numerous other literary-based activities" (109).
Friesen, L	2010	Exploring Animal-Assisted Programs with Children in School and Therapeutic Contexts	SE	Wide overview of programs, emphasis on special needs classrooms	- Expressed that therapy dogs may offer physiological, emotional, social, and physical support for children. -Interacting with dogs can help to encourage children's social interaction with peers and adults in special needs classrooms.
Friesen, L	2010	Potential for the Role of School-Based Animal-Assisted Literacy Mentoring Programs	R	Elementary aged children	-Provided goals and best practices of school-based mentorship programs that involve therapy dogs. - Presented ways mentors can incorporate the six language arts into animal-assisted literacy sessions.

Friesen, L	2012	Animal-assisted literacy: A supportive environment for constrained and unconstrained learning	R	45 students, grades 1-5	-Examined five animal-assisted literacy programs in Canada. -"Interaction with the animal served as a conduit for playful communication and fostered a sense of agency on the part of the child" (104). -"Animal-assisted learning sessions provided meaningful and novel opportunities for both constrained and unconstrained literacy skill developments" (105).
Friesen, L	2013	The Gifted Child As Cheetah: A Unique Animal-Assisted Literacy Program	R	Single case study on gifted 7 year old (2nd grader)	-Illustrated how reading and writing with a dog helped nurture the child's unique brilliance -In addition to giving five suggestions for working with gifted young children, Friesen outlined five benefits animal-assisted literacy learning experiences for high-achieving children: individualized learning, unconditional acceptance and companionship, relief from perfectionism, motivation for meaningful learning and advocacy, and increased communication and risk-taking.
Gee, N	2007	The role of therapy dogs in speed and accuracy to complete motor skills tasks for preschool children	GM	14 children, ages 4-6	-Study determined whether the presence of a therapy dog would affect the performance of a set of gross motor skills tasks for preschoolers. -Findings indicated that the "presence of a therapy dog served as an effective motivator for the children, who performed faster, but without compromising accuracy, in all tasks but one" (375).
Glenn-Applegate, K	2017	Child's Best Friend-Is a Dog Visitor a Good Fit for our Preschool?	SE/R	Preschool	-"Dogs can indirectly support children's cognitive learning" (12). - A dog provides authentic opportunities for children to develop empathy, caretaking skills, and respect for living things.
Graf, T	2012	Therapy dogs making move from hospital to classroom	SE/R	1st grade students	-Anecdotal evidence regarding a pilot program in a primary school. -Therapy dogs are successful because "they can't talk back" (2).
Hall, S	2016	Children Reading to Dogs: A Systematic Review of the Literature	R	Children under 16 years	-Examined 48 studies and aimed to "determine the scientific evidence base for the pedagogic effects of reading to dog's programmes" (3). -"The papers evidenced improvements to the children's behavioral processes...However, the quality of the evidence on which these conclusions are drawn is low" (13). -Recognizes the need for more "rigorous investigation," including longitudinal studies, increased sample sizes, and the use of standardized measures (17).
Jalongo, M	2004	Canine Visitors: The Influence of Therapy Dogs on Young Children's Learning and Well-Being in Classrooms and Hospitals	R	Ages 5-8	-Examines common objections that are raised to therapy dogs in schools and hospitals: sanitation concerns, safety considerations, allergies, cultural differences, fear of dogs. -Includes recommendations for those who work with canine visitor programs.

Jalongo, M	2005	"What are all these dogs doing in school?" Using therapy dogs to promote children's reading practice	R		<ul style="list-style-type: none"> -This article gives guidelines and suggestions on implementing a reading education assistance dog program. -AAT does not replace effective instruction on reading, it provides a more structured and appealing alternative to "read by yourself" (155). -Referenced a 2002 study that showed AAT decreased absenteeism, increased the use of the library, and resulted in better grades.
Ko, M	2017	Reading to therapy dogs improves literacy attitudes in second-grade students	R	2nd grade students	<ul style="list-style-type: none"> -Recognized the need to assess impacts of AAI in schools, students experience greater stress, challenging social situations, and fear of negative feedback in the school setting. -Scores assessing academic reading attitudes increased significantly among the children who read aloud to dogs.
Kotrschal, K	2003	Behavioral effects of the presence of a dog in a classroom	SE	-24 students (mean age: 6.7 years) in Austria	<ul style="list-style-type: none"> -"The group became socially more homogenous due to decreased behavioral extremes, such as aggressiveness and hyperactivity. Also, formerly withdrawn individuals became socially more interested" (147). -Effects were more pronounced in the boys than the girls. -Children paid more attention to the teacher. -Concluded that the presence of a dog in a classroom could positively stimulate social cohesion in children while improving teaching conditions. -Children seemed to assume responsibility for the dog by acting considerate and observing its needs.
Lane, H	2013	When Reading Gets Ruff: Canine-Assisted Reading Programs	R	Ages varied	<ul style="list-style-type: none"> -Goals of canine-assisted reading programs include increasing reading fluency, increasing motivation to read, providing encouragement for reluctant readers, and making reading fun. -3 case examples: primary classroom in Florida, public library in Colorado, dog scout in Maine.
Le Roux, M	2014	The Effect of an Animal-Assisted Reading Program on the Reading Rate, Accuracy and Comprehension of Grade 3 Students: A Randomized Control Study	R	3rd grade students (Avg. age- 8 years), identified as poor readers	<ul style="list-style-type: none"> -Reading comprehension scores with dog group scored higher than other groups -3 groups- dog group, adult group, teddy bear group -Looked at reading rate, accuracy, and comprehension
Levinson, E	2017	Effects of Reading with Adult Tutor/Therapy Dog Teams on Elementary Students' Reading Achievement and Attitudes	R	45 children, grades 2-5	<ul style="list-style-type: none"> -Reading aloud to an adult/therapy dog team tended to increase children's scores on a test of oral reading fluency much more than reading aloud to peers. -"Given these early and high expectations for literacy, the pressure is on for larger numbers of young children to reach unprecedented level of proficiency in reading" (4). -The dog effect seemed to be more prominent and consistent at grade 2 than at other grades, suggesting that such programs may be more effective in the early elementary grades (k-2), rather than later grades (3-6).

Malchik, A	2015	What If Schools Hired Dogs as Therapists?	SE	O'Farrell Charter School, grades K-12	- "Researchers over the last decade have amassed a sobering body of evidence showing the inability of stressed students to learn" (2). - "The research supporting its effectiveness is sparse and largely anecdotal" (7). - Sejera is a facility dog that works in the charter school. - The therapy dog gives traumatized children an initial point of contact for comfort and safety. - Found that Sejera acts as a stress-reducer and a catalyst for helping students deal with stressful situations.
Newlin, R	2003	Paws for Reading: An innovative program using dogs to help kids read better	R	15 students in second grade who tested below grade level in fluency and reading tests	- Discussed the Paws for Reading Program located in Wilmington, North Carolina. - "Most participants improve their reading skills by at least two grade levels of the course of an entire schools year" (43). - Several participants became mentors and introduced others to the program.
Pillow-Price, K	2014	Sit, Stay, Read: Improving Literacy Skills Using Dogs!	R	Preschool children	- Recommendations on how to implements a <i>SitStayRead</i> program - The averages of the students who participates scored significantly higher than both the district and state averages.
Schwartz, M	2012	Therapy Dogs' Presence Steadily Grows in Libraries	R	Ages 3-10	- Focused on the "Read to a Dog" program at Oshkosh Public Library in Wisconsin - "Five to six consecutive visits (with therapy dogs) will raise them [children] two reading levels" (1).
Shaw, D	2013	Man's Best Friend as a Reading Facilitator	R		- Complete overview of R.E.A.D. program, including varying perspectives (teachers, parents, students, and handlers) and implementation techniques. - Referenced study where all ten students in the R.E.A.D. program significantly improved their reading scores.
Weller, C	2015	Why every school should bring dogs into the classroom	R	Primary to college	- Referenced University of California study that found a 12% boost in reading proficiency when kids read aloud to dogs for 10-15 minutes per week. - Recognized that 21% of American adults read at or below a 5th grade level.

Summary of animal-assisted literacy programs:

Literacy is defined as the ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines and in any context (International Literacy Association n.d.). There is a mismatch between the literacy demands of society and the literacy standards of education. “The fact that millions of children in North America struggle with learning to read is well documented” (Friesen 2012, 103) Literacy is a necessary foundational skill in life, yet 21% of American adults read at or below a fifth-grade level (Weller 2015). To help remedy this widespread issue, literacy standards in primary classrooms have increased. “Given these early and high expectations for literacy, the pressure is on for larger numbers of young children to reach unprecedented level of proficiency” (Levinson et al. 2017, 4). Educators are using alternative teaching methods to tackle new expectations, one method being the use of animal-assisted literacy programs.

Intermountain Therapy Animals launched the R.E.A.D. program as the first comprehensive literacy program whose mission is to improve the literacy skills of children through the assistance of registered therapy teams as literacy mentors. Today, thousands of registered R.E.A.D. teams work throughout the US, Canada, United Kingdom, Italy, Finland, France, Sweden, South Africa, Spain, and beyond. The organization has over 3,000 volunteer teams registered, each passing a test regarding R.E.A.D.’s procedures and values in addition to passing the therapy dog certification exam (Shaw 2013). The implementation of each satellite program is varied, but most R.E.A.D. sessions span approximately 20-30 minutes while the students sit and read to a therapy dog with the handler present. A case study set in a Florida primary classroom recorded that participating students experienced tremendous gains in reading ability due to the inclusion of a therapy dog. The success of the program led to neighboring schools adopting similar practices. (Lane and Zavada 2013). In an effort to aid others in implementing animal-assisted literacy programs, Jalongo (2005) lists twelve best practices for those wanting to begin a R.E.A.D. program. Among the suggestions, Jalongo discusses the importance of gaining administrative support and creating an operating budget. In addition, Jalongo reiterates the significance of using a certified therapy dog along with combining the training of handlers with the expertise of teachers in order to maximize effectiveness.

Therapy Dogs International launched a similar program named Tail Waggin’ Tutors. The main objective of this program is to provide a relaxed and dog-friendly atmosphere, which allows students to practice the skill of reading (Therapy Dogs International 2017). Tail Waggin’ Tutors is hosted in a multitude of schools and libraries around the United States. Comparably, Robin Newlin created the Paws for Reading program in Wilmington, North Carolina. Fifteen second grade students who tested below grade level in fluency and reading tests participated in the program. The results indicated that most participants improved their reading skills by at least two grade levels (Newlin 2003).



Child reading to therapy dog at local Reading to Rover

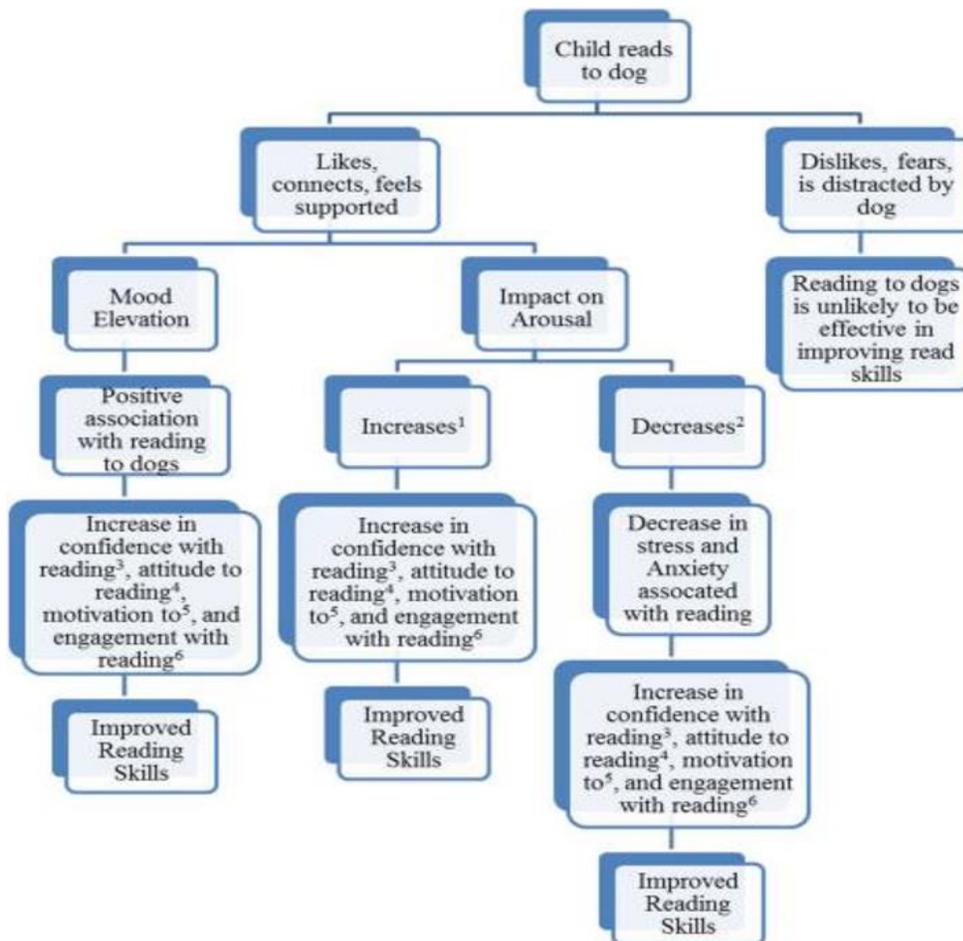
Program. (Photo taken by first author)

Throughout the past three decades, multiple variations of animal-assisted literacy programs described above have formed across the world. A comprehensive list of these types of programs can be found in Friesen's (2010) article entitled "Potential for the Role of School-Based Animal-Assisted Literacy Mentoring Programs" along with the corresponding location and contact information.

Summary of findings of increased reading and language skills:

Hall, Gee, and Mills (2016) completed a systematic review of literature regarding the pedagogic effects of reading to dogs. While the review of 48 studies recognized the need for more rigorous investigation regarding the practice, the authors found that the "papers evidenced improvements to the children's behavioural processes, which may improve the environment in which reading is practiced, and therefore lead to better performance" (Hall, Gee, and Mills 2016, 13). The authors created the illustration below to demonstrate how reading to a dog may influence reading performance.

Figure 1: An Illustration of how Reading to a Dog may Influence Reading Performance



Source: Hall, Sophie Susannah, Nancy R. Gee, and Daniel Simon Mills. "Children reading to dogs: A systematic review of the literature." *PloS one* 11, no. 2 (2016): e0149759.

Based on the chart above and the review of research performed for this article, three categories of benefits that stem from reading to dogs will be discussed: reduction of stress/anxiety, improved attitudes/increased motivation, and improved reading rate, accuracy, and comprehension.

Reduction of stress/anxiety when reading:

Ko (2017) recognized the lack of research regarding reading programs in schools, a setting where children may experience greater stress, challenging social situations, and fear of negative feedback. In 2012, Beetz measured the cortisol levels of children before, during, and after stressful tasks; stress levels were lower when the children interacted with the dog, suggesting the presence of a dog in an educational setting would help reduce anxiety levels caused by social pressures that exist within a classroom.

Lane and Zavada (2013) wrote that many of her students in the aforementioned Florida case study were reluctant readers. Fortunately, “dogs cannot talk back” (Graf 2012, 2), reducing the fear of judgement. The dog acts as a supportive companion as students stumble on new words while reading increasingly challenging books. Lane and Zavada (2013) noted that students participating in the animal-assisted literacy program demonstrated increased self-confidence, oral fluency, and overall motivation to read. Friesen (2013) outlined five benefits of the animal-assisted literacy learning experience, including the benefit of unconditional acceptance and companionship. Similar to Ko’s notation, Friesen discusses the social pressures students experience in school. These stresses disappear when reading to a dog since the dog automatically becomes a trusting friend who will listen to them.

Improved attitudes/ increased motivation when reading:

A second benefit of animal-assisted literacy programs (Friesen 2013) is the motivation for meaningful learning and advocacy that dogs provide. Friesen argues that students’ interest in dogs can inspire long term intrinsic motivation. In the article entitled, “How a therapy dog may inspire student literacy engagement in elementary language arts classroom,” Friesen (2009) described her classroom experiences with her therapy dog, Tango, who “served as the springboard for numerous other literary-based activities” (109). Students enjoyed reading to Tango so much that it led to the creation of other reading and writing projects that revolved around the topics of dogs. Therapy dogs can be used as a tool to spark the interest of students, especially those who may not enjoy school. Students are given a reason to be excited to read, try new words, and participate.

Ko (2017) wrote about a pilot reading program in an afterschool program for second graders. Students read to a therapy dog for thirty minutes once a week. Authors used the Elementary Reading Attitude Survey (ERAS) to assess students’ attitudes toward reading and found that the “scores assessing academic reading attitudes increased significantly among the children who read aloud to dogs” (2). The results suggested that animal-assisted literacy programs in an academic setting has the potential to provide motivation.

Improved reading rate, accuracy, and comprehension:

After completing the review of research, it is evident that the majority of the most recent studies have focused on the impact of animal-assisted literacy programs on reading rates, accuracy, and comprehension. We suggest that this shift of focus is attributed to the pressure to produce quantitative evidence proving the positive effects of therapy dogs in classrooms that have been discussed. This field of research has been scrutinized due to the reliance on anecdotal evidence in earlier studies. Demonstrating an impact on reading rates and levels of comprehension is possible with accelerated reading tests and learning inventories. Four studies are used to examine the effects of using therapy dogs to help children read.

Pillow-Price, Yonts, and Stinson (2014) analyzed how the SitStayRead program in a preschool classroom helped students gain literacy skills. After being in the classroom for a year with a therapy dog named D.D., students took the Qualls Early Learning Inventory (QELI), a measure to gauge developmental progress of students. The averages of students coming out of the preschool classroom with D.D. that scored “developed” or “proficient” were significantly higher than both the district and state averages (Pillow-Price, Yonts, and Stinson 2014). The two charts below show the differences in scores.

Figure 2: QELI Average Scores in Preschool Classrooms

Chart A – 2011 QELI Average Scores

(Percent that scored developed or proficient)

September 2011 QELI Kindergarten Test Score Averages	General knowledge	Written Language	Oral Communication
District average	35%	36%	37%
State average	34%	23%	33%
Laura’s	77%	66%	66%

Chart B – 2010 QELI Average Scores

(Percent that scored developed or proficient)

September 2010 QELI Kindergarten Test Score Averages	General knowledge	Written Language	Oral Communication
District average	48%	46%	44%
State average	34%	23%	33%
Laura’s	81%	81%	72%

Source: Pillow-Price, Kathy, Nikki Yonts, and Laura Stinson. "Sit, stay, read: Improving literacy skills using dogs." *Dimensions of Early Childhood* 42, no. 1 (2014): 5-9.

Levinson et al. (2017) also assessed the effect of reading aloud to therapy dogs on students’ oral communication. Forty-five students in grades two through five read aloud to therapy dog/handler teams thirty minutes per week for five weeks. One group read to therapy dogs while the second group read to peers. Levinson et al. (2017) found that “reading aloud to an adult/therapy dog team tended to increase children’s scores on a test of oral reading fluency much more than reading to peers” (38). A particularly interesting observation that resulted from the study was that the dog effect seemed to be more prominent and consistent at grade two than at other grades (Levinson et al. 2017). This suggests that animal-assisted literacy programs may be more effective in earlier grades, such as kindergarten, first, and second, since this is a heightened developmental stage for children.

The authors state, “Problems with reading are serious and pervasive worldwide” (Le Roux, Swartz, and Swart 2014, p.656). In an effort to find a solution, they designed a unique study to evaluate the effects of an animal-assisted reading program on the reading rate accuracy, and comprehension of 102 third grade students in South Africa. Students were identified as poor readers and were randomly assigned to one of the four following groups: control group, students who read to therapy dogs, students who read to an adult, and students who read to a teddy bear in the presence of an adult. The sessions lasted twenty minutes for ten weeks. “Students from the dog group read at a significantly higher reading comprehension age than the students in all three other groups” (667). The authors suggested that perhaps the calming effects of the

therapy dogs allowed the students to relax and enjoy the reading sessions. The lack of judgement and criticism from the dogs may also explain the higher scores of the dog group.

Friesen (2012) posited that animal-assisted literacy programs provide students opportunities to develop both constrained and unconstrained literacy skills. Constrained skills include letter knowledge, phonics, and concept of prints; these skills are less complex, more concrete, and are easier to teach. In contrast, unconstrained skills are more abstract and complex. Examples of unconstrained skills include vocabulary, written composition, comprehension, critical thinking, and problem solving. Friesen (2012) observed forty-five elementary students across five animal-assisted literacy programs in Canada. During sessions, the handler would use the dog as a tool to teach the student unconstrained and constrained literacy skills. For example, the handler would ask the student to pause and pet the dog after reaching a comma in order to practice punctuation use. The children were also asked to translate the dog's actions into feelings, such as the meaning behind a dog wagging its tail. Friesen (2012) concluded that the animal-assisted literacy program “can contribute to a safe, playful, and caring learning environment in which children are able to gain valuable practice in constrained and unconstrained literary skills, and can provide children with authentic, meaningful, and unique literary skills” (107).

Social/emotional/humane findings:

Several articles have noted a number of positive social and emotional skills and behaviors associated with having a dog in the classroom. For example, increased social interaction was seen; children formed into social groups more often in the presence of a dog. There also seems to be an increase in the control of emotions and behaviors. One article mentioned a boy who stated “when I’m about to have a bad day, I just pet and hold J.D. to calm down” (Anderson 2007, 6). In a qualitative analysis of a dog present in a self-contained classroom of children with emotional disorders, Anderson and Olson (2006) concluded that the dog’s placement in the classroom contributed to the students overall emotional stability, students’ attitudes towards school were improved, and that the students learned lessons in responsibility, respect, and empathy. In another case study of three children with disabilities, the presence of a therapy dog resulted in positive interactions and increased communication between the teacher and the children (Esteves and Stokes, 2006). Beetz (2013) also reported that in contrast to the control class, the class that had a “schooldog” visit once a week had significant improvements in their positive attitude towards school as well as their emotions related to learning.



*Group photo with two therapy dogs visiting classroom.
(Photo taken by first author)*

Cambria (2010) described a Head Start classroom with children ages three to five years who had a resident therapy dog, Waco. Waco had his own cubby, was trained to help with clean-up and to open the door for recess. This particular classroom had children enrolled who were from low-income homes, some had incarcerated parents or lived with domestic violence. Waco was credited with providing stability and comfort. The teacher stated that “the whole feeling of the room is calmer” (1). The use of a therapy dog in classrooms like this one seems particularly beneficial given research suggesting that most children living in poverty suffer from stress that can hinder their success in school. Malchik (2015) discussed the presence of a facility dog, Sejera, in a k-12 charter school. The author noted the inability of stressed students to learn, and that research on this topic is “sparse and mostly anecdotal” (7). She asked students to write letters to Sejera expressing their feelings. One student wrote “She helps in so many ways helping students calm down when they are having a bad day” (3). One important conclusion of this article is that dogs alone cannot fix trauma, but can ease anxiety and be an “initial point of contact for comfort and safety.” Kotschal & Ortobayer (2003) introduced dogs to an elementary school in Vienna. They concluded that “the group became socially more homogenous due to decreased behavioral extremes, such as aggressiveness and hyperactivity” (147). Also, more withdrawn students became more socially interested, children paid more attention to the teacher, and the children were considerate to the dog and observed its needs. Results were more pronounced in boys than girls. In one anecdotal report of a pilot program in a primary school, the teacher reported that some parents ask for their children to be placed in her classroom “because it’s the one with the dogs (Graf 2012, 2). Another school uses three therapy dogs in the classroom to “calm fears, relieve anxiety, and teach” life skills (Education World, 2013, 1). There are “lessons” for grades k-2, 3-6, and these dogs are even part of a plan to help students meet high school graduation requirements. Some of the lessons are “complain less, be thankful more, judge less, accept more, and growl less, smile more” (2). Chandler (2001) and other studies mentioned the benefits of integrating a therapy dog or other animal in a classroom setting including helping children to develop humane skills by incorporating kindness and compassion, witnessing praising or disciplining the dog, practicing loyalty and responsibility, and an increased understanding of how to coexist with animals while gaining knowledge about animals and how to care for them (nurturance).



Student providing water to therapy dog during visit to classroom. (Photo taken by first author)

Gross motor skills:

Gee, Harris & Johnson (2007) completed a case study which included 14 children, ages four to six years old, who were in a classroom with two miniature poodles. The children were able to complete ten tasks related to locomotion, stability, and manipulation faster when the dog was present. The dogs modeled the tasks, which included weaving around cones, walking on a balance beam, a high jump, rolling over and crawling, and an underhand toss to the dog. The authors concluded that the presence of a dog increased the children's motivation to complete motor skill tasks.

Suggestions for implementing therapy dogs in classrooms:

In order to maximize the effectiveness of animal-assisted literacy sessions, Friesen (2012) suggests that literacy mentors include activities outside of reading. For example, students can write a speech and deliver it to the therapy dog or students can place sticky notes on the dog in order to learn body parts. This is similar to students writing letters to a dog, as previously mentioned.

Friesen (2013) lists five suggestions for working with young children in animal-assisted literacy programs; among the suggestions are understanding each child on an individual level and letting the child lead. Reading to a therapy dog allows students to have one on one time with a therapy dog and handler. The session can be tailored to the student's reading level and the student's interests. Allowing the student to lead the session and pick which book to read gives the child a sense of freedom and ownership; the flexibility also encourages them to express their creativity and intellect. Anderson (2007) suggested that incorporating a dog into the classroom takes thorough planning. Steps suggested include: a) conduct preliminary meetings, b) select the appropriate dog (preferably a certified therapy dog who is owned by the teacher or another individual who will be present who understands the dog's behavioral patterns), c) establish classroom policies and procedures, d) obtain written consent, e) provide information to school staff members.

Addressing concerns:

As stated by Glenn-Applegate and Hall (2017), bringing a dog into a classroom requires careful consideration. They asked families, school staff, and a veterinarian four questions: a) would a dog benefit the (preschool) program? b) who would be responsible for the dog? c) do any children have allergies or a fear of dogs? d) are all staff in favor of having a dog? They also consulted with the program's insurance agent, the lawyer at the university, and the national accrediting body, the National Association for the Education of Young Children (NAEYC), who replied that they would need to keep the dog's immunization records on file and that children and staff would need to follow handwashing procedures after interacting with the dog. Bacon refers to the 2002 California school survey which showed that only 20% of those surveyed used dogs in their school. However, 93% of the respondents stated that they would be interested in dog programs if their concerns were addressed. The top three concerns identified were legal implications and liability (50.5%), supervision (43.3%), and allergic reactions (40.2%).

Jalongo (2005) also addresses concerns in the list of twelve steps to implement a reading education assistance program. In order to prevent sanitation objections, the author notes that registered therapy dogs have regular check-ups and handlers are required to provide proof of vaccination. Jalongo emphasizes the need to train handlers, educators, and students in protecting the therapy dogs' safety and well-being. Finally, the majority of the articles highlighted the importance of using a certified therapy dog when implementing programs.

Limitations and future research:

Several limitations were noted by the authors of the reviewed articles. Beetz (2013) points out that “different dogs may have different effects” (6). The author also implicates that a higher frequency and longer duration will yield stronger results. Brelsford et al. (2017) conducted a systematic review of literature relating to animal-assisted interventions conducted in educational settings. After reviewing twenty-five papers, the authors recognized the need for further research in order to quantify the factors regarding findings, a common critique to research in this field. The review of literature expressed that future studies need to incorporate a higher quantity of randomized controlled trials with appropriate control groups (Brelsford et al. 2017). This recommendation was also found in Hall, Gee, and Mills’ 2016 systematic review of literature regarding children reading to dogs and they identified the need for researchers to perform longitudinal studies that consist of increased sample sizes and the use of standardized measures. Finally, Bassette and Taber-Doughty (2013) expressed the need to expand beyond studying behavioral measures and also focus on researching academic effects of long-term dog reading programs.

Conclusion

Based on the review of thirty articles on the benefits of therapy dogs in classrooms, there appears to be many benefits, both anecdotal and empirical. More empirical research studies have been published in the last ten years. There is strong support for increased confidence, literacy skills and actual reading scores when children read to dogs. Additionally, much evidence supports the emotional and social benefits of children interacting with a dog in the classroom. One study was found that showed improved motivation and gross motor skills when a dog modeled these skills. Several authors gave helpful suggestions for starting a therapy dog program in a school setting. Although initial concerns were noted, with careful consideration and communication with all involved, these concerns can be addressed. Limitations of current research have been identified, and more empirical studies with larger sample sizes, control versus experimental groups, and more long term studies will strengthen this body of work. After completing the review, it is evident that the benefits of utilizing a therapy dog within a classroom outweigh the reservations.

References

- Anderson, Katherine L., and Myrna R. Olson. "The value of a dog in a classroom of children with severe emotional disorders." *Anthrozoös* 19, no. 1 (2006): 35-49.
- Anderson, Katherine L. "Who Let the Dog in? How to Incorporate a Dog into a Self-Contained Classroom." *Teaching Exceptional Children Plus* 4, no. 1 (2007): n1.
- Bacon, Charlotte. "Bringing Therapy Dogs to Your School." Charlotte's Litter. 2014. http://charlotteslitter.org/wp-content/uploads/2014/09/Educator_Resource.pdf.
- Bassette, Laura A., and Teresa Taber-Doughty. "The effects of a dog reading visitation program on academic engagement behavior in three elementary students with emotional and behavioral disabilities: A single case design." In *Child & Youth Care Forum*, vol. 42, no. 3, pp. 239-256. Springer US, 2013.
- Beetz, Andrea, Henri Julius, Dennis Turner, and Kurt Kotrschal. "Effects of social support by a dog on stress modulation in male children with insecure attachment." *Frontiers in psychology* 3 (2012).
- Beetz, Andrea. "Socio-emotional correlates of a schooldog-teacher-team in the classroom." *Frontiers in psychology* 4 (2013).
- Brelsford, Victoria L., Kerstin Meints, Nancy R. Gee, and Karen Pfeffer. "Animal-Assisted Interventions in the Classroom—A Systematic Review." *International Journal of Environmental Research and Public Health* 14, no. 7 (2017): 669.
- Cambria, Nancy. "Therapeutic dog gets high praise for his role in preschool classroom." *Stltoday.com*. June 27, 2010. http://www.stltoday.com/news/local/education/therapeutic-dog-gets-high-praise-for-his-role-in-preschool/article_09fa1564-efb7-5e70-bba3-131a76da4b0c.html.
- Chandler, Cynthia. "Animal-Assisted Therapy in Counseling and School Settings. ERIC/CASS Digest." (2001).
- Esteves, Stephanie Walters, and Trevor Stokes. "Social effects of a dog's presence on children with disabilities." *Anthrozoös* 21, no. 1 (2008): 5-15.
- Fine, Aubrey H., ed. *Handbook on animal-assisted therapy: Foundations and guidelines for animal-assisted interventions*. Academic Press, 2015.
- Friesen, Lori. "How a therapy dog may inspire student literacy engagement in the elementary language arts classroom." *LEARNing Landscapes* 3, no. 1 (2009): 105-122.
- Friesen, Lori. "Exploring animal-assisted programs with children in school and therapeutic contexts." *Early Childhood Education Journal* 37, no. 4 (2010): 261-267.
- Friesen, Lori. "Potential for the role of school-based animal-assisted literacy mentoring programs." *Language and Literacy* 12, no. 1 (2010): 21.
- Friesen, Lori, and Esther Delisle. "Animal-assisted literacy: A supportive environment for constrained and unconstrained learning." *Childhood Education* 88, no. 2 (2012): 102-107.
- Friesen, Lori. "The gifted child as cheetah: A unique animal-assisted literacy program." *The Latham Letter* 34, no. 1 (2013): 6-10.

- Gee, Nancy R., Shelly L. Harris, and Kristina L. Johnson. "The role of therapy dogs in speed and accuracy to complete motor skills tasks for preschool children." *Anthrozoös* 20, no. 4 (2007): 375-386.
- Glenn-Applegate, Katherine, and Kellie Hall. "Child's Best Friend-Is a Dog Visitor a Good Fit for our Preschool?" *Teaching Young Children* 10, no. 2 (January 2017): 11-13.
- Graf, Tyler. "Therapy dogs making move from hospital to classroom." *The Columbian*. December 09, 2012. <http://www.columbian.com/news/2012/dec/09/therapy-dogs-go-from-hospital-to-classroom/>.
- Hall, Sophie Susannah, Nancy R. Gee, and Daniel Simon Mills. "Children reading to dogs: A systematic review of the literature." *PloS one* 11, no. 2 (2016): e0149759.
- Jalongo, Mary Renck, Terri Astorino, and Nancy Bomboy. "Canine visitors: The influence of therapy dogs on young children's learning and well-being in classrooms and hospitals." *Early Childhood Education Journal* 32, no. 1 (2004): 9-16.
- Jalongo, Mary Renck. "'What are all these Dogs Doing at School?': Using Therapy Dogs to Promote Children's Reading Practice." *Childhood Education* 81, no. 3 (2005): 152-158.
- Ko, Melody. "Reading to Therapy Dogs Improves Literacy Attitudes in Second-Grade Students." *Tufts Now*. May 31, 2017. <http://now.tufts.edu/news-releases/reading-therapy-dogs-improves-literacy-attitudes-second-grade-students-0>.
- Kotrschal, Kurt, and Brita Ortbauer. "Behavioral effects of the presence of a dog in a classroom." *Anthrozoös* 16, no. 2 (2003): 147-159.
- Lane, Holly B., and Shannon DW Zavada. "When Reading Gets Ruff: Canine-Assisted Reading Programs." *The Reading Teacher* 67, no. 2 (2013): 87-95.
- Le Roux, Marieanna C., Leslie Swartz, and Estelle Swart. "The effect of an animal-assisted reading program on the reading rate, accuracy and comprehension of grade 3 students: A randomized control study." In *Child & Youth Care Forum*, vol. 43, no. 6, pp. 655-673. Springer US, 2014.
- "Lessons Learned from Dogs in the Classroom." *Education World: Teachers Lead Improvement at State Street School*. http://www.educationworld.com/a_admin/admin/admin559.shtml.
- Levinson, Edward M., Melanee Vogt, William F. Barker, Mary Renck Jalongo, and Pat Van Zandt. "Effects of reading with adult tutor/therapy dog teams on elementary students' reading achievement and attitudes." *Society & Animals* 25, no. 1 (2017): 38-56.
- Malchik, Antonia. "What If Schools Hired Dogs As Therapists? – Bright." *Bright*. July 09, 2015. <https://brightreads.com/can-a-dog-at-school-help-struggling-kids-7317a8eff20d>.
- Newlin, Robin. "Paws for Reading: An innovative program uses dogs to help kids read better." *School Library Journal*. June 1, 2003. <http://www.slj.com/2003/06/literacy/paws-for-reading-an-innovative-program-uses-dogs-to-help-kids-read-better/>.
- Pet Partners. 2017. <https://petpartners.org/about-us/petpartners-story>
- Pillow-Price, Kathy, Nikki Yonts, and Laura Stinson. "Sit, stay, read: Improving literacy skills using dogs." *Dimensions of Early Childhood* 42, no. 1 (2014): 5-9.

Ryan, Holly McLean. "The Use of Dogs in California Public Schools: Current Use, Support for, Potential Concerns, and Educator Familiarity with Potential Benefits". *The Graduate College University of Wisconsin-Stout, Wisconsin* (2002).

Schwartz, M. "Therapy dogs' presence steadily grows in libraries." *Library Journal* (2012).

Shaw, Donita Massengill. "Man's best friend as a reading facilitator." *The Reading Teacher* 66, no. 5 (2013): 365-371.

Therapy Dogs International. 2017. <http://tdi-dog.org/About.aspx?Page=Mission+Statement+and+History>

Weller, Chris. "Why every school should bring dogs into the classroom." *Business Insider*. August 21, 2015. <http://www.businessinsider.com/why-every-school-should-bring-dogs-into-the-classroom-2015-8>.

"Why Literacy?" International Literacy Association. 2017. <https://www.literacyworldwide.org/why-literacy>