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Cummings School of
Veterinary Medicine

Benefits of Reading Assistance Dogs

Dawn Lenihan, Emily McCobb, Lisa M. Freeman, Amanda Diurba
Tufts Cummings School of Veterinary Medicine, North Grafton, MA (DL, EM, LM) and
Grafton Public Library, Grafton, MA (AD)

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Introduction

Reading ability has a significant impact on all areas of academic learning. Poor reading skills at an early age can lead to an overall dislike of school and can increase the risk of drop out.¹ Low literacy levels can also lead to underachievement in all academic areas¹ and can significantly impact an individual's education and future success. Students who struggle with reading benefit from individual reading instruction and extra reading time.² However, schools have limited time and resources to devote to students who are having difficulties.

Motivation to practice reading is integral in improving reading skills. A student's motivation to read independently is a key factor in the overall improvement they will achieve, and students who spend more time on independent reading tend to earn higher reading scores.¹ Unfortunately, students who struggle with reading often have a low motivation to practice reading, thus compounding the problem.¹ Struggling readers also tend to feel more negatively toward reading in school, making it difficult for school reading programs to be effective for these students.³ Increasing students' motivation to read would not only benefit the students, but would also remove some of the burden from schools by increasing the amount of time students spend reading on their own.

Students who struggle with reading often have low self-esteem and tend to withdraw from classroom activities.¹ This decrease in confidence, along with a lower motivation to practice reading, makes this population of students very difficult to reach. In addition, studies have shown that students who do not learn to read effectively in primary grades are likely to never achieve full literacy¹. Therefore, it is imperative that reading programs be designed to engage young readers.

With so many challenges facing reading educators, a reading program that addressed many of these issues, without taking time away from regular reading instruction, could serve as a supplementary aid to help students who struggle in reading. This reading program would occur outside of the normal school day, and would provide students with extra time to practice their reading skills. For this reading program to be effective, it must creatively motivate students to read, while also creating an atmosphere that provides struggling readers with the increased confidence they need to practice and improve their reading skills. Implementation of such a reading program could help schools reach more struggling readers, and ultimately improve reading ability in elementary school students throughout the country.

One possible approach that incorporates these features is to use therapy dogs as part of a reading program. There are many health and psychological benefits of contact with animals,⁴ particularly for children. One study found that pre-adolescents who had a pet also had higher autonomy, self-concept and self-esteem, all qualities considered important for academic success.⁵ In addition, results from this study also suggested that pets can be considered as a source of support.⁵ These benefits from human and animal interaction are

not limited to pet owners. Another study found that the presence of a friendly dog reduced blood pressure in children who were asked to read aloud.⁴ These benefits of the human-animal interaction could be used to make the learning process more comfortable and enjoyable for children.

Several studies related to the effects of therapy animals on children have focused on children with developmental disabilities.⁴ For example, one study found that children with autism who were put in contact with an animal demonstrated increased use of language and had improved social interactions while with the animal.⁴ In addition, studies have shown that children in the presence of animals had improved and sustained focus and maintained a higher state of awareness, as well as improved attitudes toward school.⁴ While these studies focused on populations of children with developmental disabilities, the benefits demonstrated could also have a positive impact on children in the general population, and especially those children who have learning disabilities or who struggle with reading.

One of the benefits of therapy animals may be due to reductions in stress for human participants. One study measured the physiological stress response to a task when the participants performed the task alone, when there was a friend present, and when they were with their dog. The results showed that study participants had the highest level of stress when their friend was present and the lowest level of stress when their dog was present.⁶ One explanation for these results is that the participants considered other people, even their friends, as an evaluative presence, which induced stress.⁶ Dogs, on the other hand, are considered a non-evaluative presence that can provide support and comfort to participants without judging them.⁶ This component of the human-animal bond could specifically help to address the low self esteem commonly seen in students struggling with reading, while providing them the support and confidence they need to practice and improve.

The benefits of therapy animals have prompted some groups to incorporate animals such as dogs into reading programs. The Reading Education Assistance Dogs[®] (R.E.A.D.) Program was created by a non-profit organization that encourages children to read through the use of therapy animals.⁷ This program takes the benefits associated with animal interaction and uses them to encourage and motivate children to improve their reading skills. Although the specific details vary among individual programs, they are designed to have children read to trained dogs, thus taking advantage of the non-judgmental and stress-reducing effects of a dog during reading programs for children.

Although anecdotal evidence suggests there are benefits of the R.E.A.D.[®] Program, the effectiveness of these programs to improve reading ability has not been evaluated. If proven to have a positive effect on reading ability, the R.E.A.D. programs might provide an important, effective, and inexpensive method to improve reading skills in children, a skill of critical importance in children's success. Therefore, we conducted a pilot study to test the feasibility of a five-week R.E.A.D. program for children using therapy dogs and to generate preliminary data assessing the effect of the R.E.A.D. program on children's attitudes toward reading and overall reading ability.

Study Methods

Selection of Participants

For this study, we recruited children entering the second grade from local elementary schools to participate in the five-week R.E.A.D. program between June and August 2010. Recruitment was conducted through flyers at the Public Library and also at the two local elementary schools. Eighteen children were randomized to participate in either the R.E.A.D. program or in the non-dog reading control group. To ensure similar baseline reading abilities in the two groups, children were stratified according to their baseline scores on the Curriculum Based Measurement (CBM). Those in the R.E.A.D. program were paired with—and asked to read aloud to—a dog, and the control group was asked to read aloud to a

human volunteer throughout the study.

Testing Procedures

The CBM for reading was used to test the reading ability of each child. The CBM is a commonly-used test that monitors a child's progress through direct assessment of academic skills.⁸ This test was chosen over a typical standardized test because it is quicker to administer, can be given repeatedly in a short period of time, and is more sensitive to short term gains.⁸ Additionally, the CBM can be used to directly compare the performance of the children within the study, rather than comparing them to a national average.⁸ For this test, each child was asked to read three different passages for one minute each. Each passage was at least 150 words and was selected from a collection of stories designed for a second-grade reading level. The number of words correct per minute (WCPM) was calculated and, the median score from the three reading passages was used as the child's CBM score.

Each child's attitude toward reading was then measured using the Elementary Reading Attitude Survey (ERAS). This survey was designed to assess the attitude of the child toward reading in both academic and recreational settings.³ This survey was chosen due to its child-friendly format, as well as previous research demonstrating the reliability and validity of the survey.³ This survey has 10 questions related to academic reading and 10 questions related to recreational reading. The survey is presented in pictorial format, with four pictures of Garfield the cat ranging from very happy (score of 4) to very upset (score of 1). A score for both the academic and recreational reading sections, as well as an overall score for the entire survey is then determined. The ERAS and CBM were administered to each child at the beginning and the end of the 5-week program.

R.E.A.D. Dogs

The Cummings School of Veterinary Medicine at Tufts University has an established pet therapy group that trains and tests therapy animals in preparation for the R.E.A.D. program, as well as visitation to other facilities such as nursing homes, detention centers, psychiatric centers, hospice centers and hospitals.⁹ All dog teams in this program have been trained and tested through the Delta Society Pet Partners program.¹⁰ Tufts Paws for People, is an affiliate of the Delta Society, a national, non-profit organization that has developed training programs for therapy animals to ensure they are qualified and comfortable in therapy situations, and provides liability insurance for certified teams. Handlers received additional training specifically on the R.E.A.D. program through the Intermountain Therapy Animals Program.⁷

R.E.A.D. Program

Both the R.E.A.D. group and the control group met once weekly for 30 minutes for a total of five sessions. Where possible, the child read to the same dog or human listener each week, although this was not always possible. This study was approved by the University's Institutional Review Board. All parents signed an informed consent form.

Results and Significance

Nine children were randomized to each of the two study groups (ie, Dog versus Control). At baseline, CBM and ERAS scores were not significantly different between the two groups. In the Dog Group, 0 of 9 children dropped out, while 3 of 9 dropped out of the Control group. This finding suggests that dogs may increase retention of children in reading programs. However, further studies are needed to determine whether these findings are significant in larger studies of the R.E.A.D. Program.

There were no within-group changes in CBM scores for either the Dog Group or Control Groups. The changes over time in CBM scores also were compared between

groups. There was a numerically larger reduction in words per minute in the Control Group compared to the Dog Group, although this was not significantly different (Figure 1).

Figure 1:

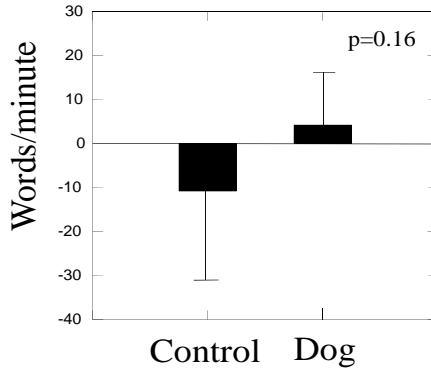


Figure 1: Change in Curriculum-Based Measurement (CBM) scores between baseline and week 5 in the Dog versus Control Groups.

The decrease in the CBM scores of the children in the Control Group, while not statistically significant, was surprising. The initial hypothesis for the study was that both groups would see an improvement in their scores simply due to the extra practice time, with the children in the R.E.A.D. program seeing a greater level of improvement. However, the decline in CBM scores for the children in the Control Group may have more to do with when the program took place rather than the reading program itself. A review of 39 studies assessing the effect of summer vacation on academic achievement showed that achievement test scores tend to decline over summer vacation.¹¹ Specifically, children tend to lose about 1 month on a grade level equivalent scale or 1/10 the standard deviation relative to spring test scores.¹¹ The trends in the CBM scores of the two groups in the current study suggest that the R.E.A.D. program may be effective at reducing loss of reading ability over summer vacation. With many distractions over the summer, the R.E.A.D. program could be considered a fun, creative way to prevent loss of reading ability in children during vacation.

The ERAS scores did not change significantly over the course of the 5-week program within the Dog Group. However, in the Control Group, there was a significant reduction in the ERAS academic score, as well as a trend for a reduction in the ERAS total score. ERAS recreational scores did not change significantly during the study within the Control Group. When comparing changes over time in ERAS scores between the two groups, the Control Group's scores decreased while the Dog Group's scores increased, although the changes were not significantly different (Figure 2).

Figure 2:

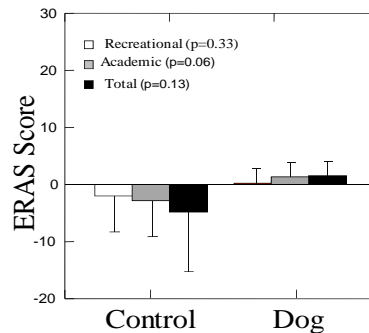


Figure 2: Change in Elementary Reading Attitude Survey (ERAS) scores between baseline and week 5 in the Dog versus Control Groups.

As compared to the CBM score, which assesses reading ability, the ERAS scores (academic, recreational, and total) assess attitudes towards reading. None of the ERAS scores changed significantly in the Dog Group; however, the ERAS academic score decreased significantly in the Control Group with a trend for a decrease in the ERAS total score as well. This suggests less favorable attitudes towards academic reading at the end of the program in the Control Group. One previous study found that students who struggle with reading tend to have less favorable attitudes toward reading in school.³ Therefore, the finding in the current study of reduced ERAS scores is important when considering this program as a way to specifically target and help struggling readers. This finding also supports the effectiveness of this program in general since attitude toward reading and reading ability have such a strong correlation.¹ In addition, this result suggests that the R.E.A.D. program may not only affect the reading ability of children during the program, but may make them more receptive to reading programs in a school setting. This could lead to further differences in the two groups once the school year begins, which have not been accounted for in this study.

Overall, the small sample size used in this pilot study and the high dropout rate in the Control Group may account for the lack of statistically significant results. Nonetheless, the results are promising and warrant further study to determine if the trends found in this study represent statistically significant differences between the two programs. These findings are promising for the benefits of a R.E.A.D. program to improve reading ability and attitudes towards reading in elementary-aged children.

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