

**The Effects of Receiving Animal Assisted Therapy
on the Self-Efficacy and Reading Fluency of Struggling Readers**

by

Lisa M. Smith

**Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Education**

July 2009

Graduate Programs in Education

Goucher College

Table of Contents

List of Tables	ii
Abstract	iii
I. Introduction	1
Statement of the Problem	2
Statement of Research Hypothesis	2
Operational Definitions	2
II. Literature Review	3
Reading Fluency	3
Self-efficacy related to Reading and Fluency	5
Strategies and Interventions	6
Summary	8
III. Methods	10
Design	10
Participants	10
Instrument	10
Procedure	11
IV. Results	13
V. Discussion	16
References	19

List of Tables

1. DIBELS Performance of Experimental and Control Group Students	13
2. Comparison of Experimental and Control Group Performance on DIBELS: An Analysis of Covariance	13
3. Student Responses to Reading Attitude Survey	14
4. Student Response to Reading Total: An Analysis of Covariance	14
5. Student Response to Reading as a Recreational Activity: An Analysis of Covariance	15
6. Student Response to Reading for Academic Purposes: An Analysis of Covariance	15

Abstract

The purpose of this study was to determine the effects of using animal-assisted therapy on the self-efficacy and reading fluency of struggling readers. The measurement tool used was Dynamic Indicators of Basic Early Learning Skills (DIBELS) and the Elementary Reading Attitude Survey. This study used a pre-test/post-test design to measure the data collected from both instruments. Achievement gains were shown to be slightly higher in reading fluency for the experimental group shown in the post-test and a slightly less positive attitude towards reading at the end of the study. Research in this area should continue as there is very little information available regarding the use of animal-assisted therapy as a reading intervention.

CHAPTER I

INTRODUCTION

The increasing importance of test results as tools for school accountability under No Child Left Behind are leading to a greater emphasis on the development of reading and math skills, the two areas tested, in schools. In order for students to become skilled readers, they need to become fluent in reading as early as possible during elementary school. Fluency is the pace at which a reader is able to identify and immediately recall the words they are reading (Beck, 1985). During oral reading, a fluent reader recognizes punctuation and continues reading without unnecessary hesitations. Fluency is important for reading comprehension, and fluent readers often have stronger comprehension of what they read than non-fluent readers. As a result, fluent readers are more likely to read, read well, and choose to read when given the option.

It is frequently observed that students who struggle a bit more than their peers in reading often express a strong dislike for reading. Recent research, however, establishes a connection between animal assisted therapy and children with different types of difficulties ranging from emotional, physical, cognitive, and academic challenges. This type of therapy is becoming more and more popular in schools across the nation as a tool used to help struggling readers. Consequently, the research prompted this study, wherein the intervention of having a therapy dog visit once a week in order to allow students to read in a non-threatening environment was tested.

Statement of Problem

This study was designed to determine the effects of receiving animal therapy on the self-efficacy and reading skill of struggling readers.

Hypothesis

Students who have higher self-efficacy beliefs towards reading have higher reading fluency skills than students who have low self-efficacy beliefs towards reading through the use of animal assisted therapy.

Operational Definitions

The dependent variable for this study, reading fluency, is assessed in this study using DIBELS (Dynamic Indicators of Basic Early Learning Skills) on pre- and post- tests during the five-week study (Good, R. & Kaminski, R., 2005).

The independent variable, self-efficacy beliefs towards reading, is assessed in this study using the Elementary Reading Attitude Survey (McKenna, M. & Kear, D., 1990). This questionnaire was completed prior to beginning and after the completion of the five-week study.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this review is to examine literature related to reading fluency. The first section within this chapter will discuss the importance that this skill has on a person's overall reading skills and comprehension. In the second section, how a person's self-efficacy and/or self-esteem related to reading may affect reading fluency and progress is examined. The final section of this review discusses possible interventions that can be done to assist struggling readers and the effects on a student's self-efficacy toward reading.

Reading Fluency

According to research, reading fluency is believed to play an important role in reading comprehension and in becoming a skilled and efficient reader. Reading fluency is believed to increase and improve with practice and through basic word decoding skills. Research has given fluency several definitions. Most of the research defines fluency as the skill of reading smoothly and having the words flow freely with speed and accuracy. Those who have studied reading have defined fluency as an ability of the reader to recognize words rapidly and accurately (Nathan & Stanovich, 1991). A fluent reader is able to identify and use punctuation properly and continues reading without unnecessary stops within the reading. Fluency is perhaps best described by "immediate recognition of words and phrases by the reader" (Nes Ferrara, 2005, pg. 215). This allows for fluent and continuous reading without hesitations.

According to Fuchs, Fuchs, Hosp, and Jenkins (2001), fluency is a skill that develops throughout the primary grades of elementary school and continues into the intermediate grades. However, as students continue throughout school and read different types of texts, they learn different skills to assist in attaining better fluency skills. Many studies have shown that reading

fluency does indeed have an impact on a child's reading comprehension and understanding the text. According to Beck (1985), reading comprehension is a complex process that includes such skills as decoding fluency, vocabulary knowledge, and background knowledge of what is being read. Research has shown that when text is read slowly, comprehension is poor and early fluency difficulties with speed determine future comprehension difficulties better than achievement tests as indicators. Research findings have shown that there is a stronger link between automaticity, or fluency, and comprehension than between accuracy and comprehension. While it is important to take into consideration differences among students, some readers who struggle with fluency may not necessarily have poor comprehension. It is essential that students who are struggling with fluency be given repeated opportunities to practice and have exposure to texts that are familiar to them, therefore allowing for fluency to develop and improve. Practice and familiarity with words are perhaps the most important factors in developing this automaticity or fluency (Nathan & Stanovich, 1991). According to Welsch (2006), reading difficulty, particularly with fluency, is one of the largest reasons why students are referred for special education services. Reading fluency difficulty is one common characteristic among students with disabilities.

Fluent readers are able to read text in a natural tone of voice, using expression and acknowledging punctuation. They are able to use prediction skills that help with identifying words quickly and recognizing words they have previously never encountered. Fluent readers also demonstrate reading strategies such as word attack skills, self-correction, and strong comprehension (Nes Ferrara, 2005). These readers often enjoy reading and seek out opportunities in which they are able to read aloud and in front of their peers.

Non-fluent readers often speak in a monotone voice without expression and with hesitation. These readers have difficulty with punctuation and tend to shy away from reading opportunities in front of peers, leading to unrewarding reading experiences. These experiences lead to less reading and continued failure, resulting in the student developing poor self-efficacy feelings towards reading (Rasinski, 2005).

Self-efficacy related to Reading and Fluency

According to Artino, Jr. (2006), Bandura defined self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (p. 3). Essentially, Bandura suggests that people’s personal belief of how skilled they are in a specific domain will have implications on how well they are able to perform within that domain. Non-fluent readers who have had negative experiences then typically develop low self-efficacy toward reading and, therefore, struggle with reading and developing the skills necessary to become fluent and skilled readers. Bandura developed a social cognition theory for which self-efficacy was a major component. Bandura discusses self-efficacy and states:

People make causal contributions to their own psychosocial functioning through mechanisms of personal agency. Among the mechanisms of agency, none is more central or pervasive than beliefs of personal efficacy. Unless people they can produce desired effects by their actions, they have little incentive to act. Efficacy belief, therefore, is a major basis of action. People guide their lives by their beliefs of personal efficacy. (p. 3).

Students who struggle with reading, or any other academic situation for that matter, will tend to avoid those tasks. They often feel they are unable to achieve because past experiences have proven to them that they do not possess the skills necessary to be successful. This causes

poor self-efficacy toward those tasks, and therefore the student may never be successful within those areas due to their personal feelings and beliefs. Non-fluent readers may have low confidence levels towards reading and often avoid and not enjoy reading. By avoiding reading, these students have a very difficult time learning strategies to help them with their fluency and comprehension skills. These students need to be taught how to improve their reading self-efficacy and be taught strategies to help improve their skills. It is important that students develop goals that are attainable and that they are successful in reaching these goals (Nes Ferrara, 2005).

Strategies and Interventions

In order to increase and improve reading fluency, students need to have repeated encounters with words. This familiarity will lead to a higher confidence level and automaticity with words. Until recently, fluency was not a focus in reading instruction. It is only recently that connections are being made between fluency and comprehension, leading teachers and school systems to find strategies to help those struggling and non-fluent readers (Fuchs, et al. 2001).

According to Welsch (2006), strategies that have been shown to assist these non-fluent readers include repeated reading, modeling, paired reading with a peer, using audio or CDs during repeated reading, pre-exposure to vocabulary and reading texts, choral reading, shared reading, positive praise and feedback, appropriate level texts, predictable text, word drill, phrase drill, letter naming drill, corrective feedback, readers' theatre, computer use to provide practice, and parent/school reading programs. All of these strategies are believed to help students overcome their fears of reading and encourage positive experiences with reading. Practicing

these strategies within the classroom allows for success. Students must have a low-risk environment that allows them to be successful in reading.

There are several strategies that a non-fluent reader can learn to help him or her become a better reader as well. Often poor readers develop their own ways of compensating and allowing for success. According to Walczyk & Griffith-Ross (2007), non-fluent readers need to slow their reading rates, pause, look back in the text, read aloud, sound out, jump over, and reread the text. These are strategies that students may develop spontaneously as ways for them to compensate for their difficulties with fluency and to increase comprehension.

According to Nathan & Stanovich (1991), fluency also begins at home. Children should be exposed to books and reading at a young age. Early exposure to books and having parents who read to their children leads to reading fluency for the child in the primary years. Children who are read to at an early age have an easier time developing fluency as they progress through school. Parents are encouraged to recite nursery rhymes and poems with their children as well as read ABC and counting books, picture books, easy to read books, and predictable big books.

There are several fluency interventions used in classrooms throughout the nation. Everything from peer reading, small group instruction, after school programs, and teacher-instructed strategies are used to improve fluency. One intervention is the use of animal-assisted therapy. Animal-assisted therapy (AAT) uses service animals to meet specific goals such as physical, social, emotional, and cognitive functioning. Research has shown that simply being in the presence of animals will greatly reduce anxiety and will significantly reduce blood pressure and heart rate, all serving to calm anxiety in struggling readers (Black, Robertson, & Bankston, 2008). Animal-assisted therapy provides its participants the ability to feel secure and safe as well as provides a sense of intimacy that may not be found in other environments. This relates

directly to Maslow's Hierarchy of Needs model that states that a person must feel safe and secure in his or her environment before he or she is able to reach the esteem level (Kaymen, 2005).

Students who are struggling with fluency often fear reading in front of their peers and, therefore, shy away from activities that involve this type of reading. They may feel insecure and have poor self-efficacy toward reading and, as a result, are not able to practice their reading skills. While animal-assisted therapy is not for every student who is struggling, it has been shown to improve students' reading and self-confidence. This is a very new intervention and strategy that is not commonly used in school settings; however, it is beginning to become more popular and results have been positive.

Summary

As state and federal testing becomes more and more important, teachers, administrators, and school systems are constantly trying to improve their students' academic achievement and progress. Recent research has shown that fluency plays an important role in a child's reading comprehension. This research has led school systems and teachers to try to identify ways to increase fluency and improve students' reading comprehension. Research has given numerous ways in which a child's fluency can be impacted upon both at school and at home. Although this literature review touched upon some of the strategies and interventions, there are still numerous ways in which teachers are working every day to improve their students' success with reading. With successful and positive experiences, students are able to improve their self-efficacy toward reading, thereby becoming motivated to read. Through this motivation, students are able to practice their reading skills, which leads to improved comprehension and, ultimately, the improvement of state and federal assessment scores. As these assessments are becoming more

and more important, it is essential that educators provide students with tools so they can become successful learners.

CHAPTER III

METHODS

Design

This study used a pre-test/post-test quasi-experimental design in order to compare changes in reading fluency and self-efficacy for students who were exposed to a therapy dog when compared to similar students who received only conventional reading instruction.

Participants

Participants in this study included students from a second grade class in a suburban elementary school. Eight students were selected randomly from a small group of students who were regularly pulled out for additional help during reading instruction. All students tested were identified as at the “At-Risk” status for oral reading fluency according to DIBELS testing data. Out of the 8 students, 4 were randomly assigned to the experimental group, and the remaining 4 were assigned to the control group. The experimental group consisted of 4 boys and the control group consisted of 3 girls and 1 boy. All of the students were African American and came from middle- to lower-middle class households.

Instruments

The DIBELS test (Good, R. & Kaminski, R., 2005) was used to measure oral reading fluency scores for each of the students. DIBELS is designed to measure five basic early literacy skills. These skills include phonological awareness, alphabetic principle, fluency, vocabulary, and comprehension. DIBELS is a predetermined set of skills or measures given to students in grades kindergarten through sixth grade. This assessment is designed to consist of short (one minute or less) fluency measures given at set intervals throughout the school year to assess and monitor early literacy skills. This research-based assessment involves standardized assessment

and scoring procedures to provide consistency and validity to the scores. Additionally, the instrument allows for the assessment of skills and benchmarks that change and develop as the student progresses, thus making this a criterion-referenced assessment. Scores are reported at regular intervals throughout the school year using the predetermined fluency measures.

The Elementary Reading Attitude Survey (McKenna, M. & Kear, D., 1990) was administered pre- and post- intervention for both groups to determine individual attitudes towards reading. This survey provides quantitative information regarding elementary students' attitudes towards reading. It is designed to contain the following key factors: a normative frame of reference, documented reliability and validity, practical application to all elementary students in grades 1-6, questions comprised of meaningful student friendly response formats, and quick administration of the questionnaire that contains subscales for both recreational and academic reading. This survey is comprised of 20 questions using Garfield pictures to represent students' feelings and answers towards statements about reading. Evidence of both reliability and validity has been gathered on this survey through a variety of means. The use of a survey does not always provide accurate information about students' feelings towards subjects and the desired information. Much of students' responses may depend on their moods or feelings the day of assessment and may not accurately represent their true feelings. Therefore, this survey is used for informational purposes only and is not considered a reliable assessment.

Procedure

Students were chosen to participate in this study based upon their previous academic achievement and their scores in reading fluency according to DIBELS data. The students used in this study were randomly chosen from a second grade pull-out reading class. None of the

students in the study have IEP's, but they do have a need for more intensive reading instruction and, therefore, receive pull-out support in small groups.

The study was designed to last 5 weeks during the third marking period of the school year. The control group continued to receive their regular small group instruction with the reading specialist. The experimental group was pulled out once a week for a period of 20 minutes to read to a therapeutic dog. Permission was required for each participant in the study from their parents and guardians. During the sessions students were introduced to the therapy dog, Ginger, and her owner/handler. Students were then given the opportunity to choose from a variety of high interest books based upon their current reading and instructional levels. Many of the students were able to read and complete one or two books during each session. Assistance with words and/or sentences was provided to the students as needed by the handler of the therapy dog. During the sessions, Ginger laid near the students allowing them to pet and talk to her while reading. Students were also given the opportunity to interact with Ginger each session before and after reading in order to develop a positive rapport with her. Every student expressed great interest in Ginger and was anxious and excited for the sessions each week.

It should be noted that the experimental group also continued to receive their regular pull-out instruction with the reading specialist. Students were pulled to read to the therapy dog during their special area class, library, each week rather than during reading and math classes.

Students in both groups were tested both before and after the intervention using DIBELS and the Elementary Reading Attitude Survey. Scores were then compared between the beginning and the end of the study, and also between the experimental and control groups.

CHAPTER IV

RESULTS

The hypothesis that students receiving the treatment of reading weekly to a therapeutic dog would demonstrate superior growth in reading compared to similar students not exposed to this treatment was supported. As Table 1 describes, students in the experimental group demonstrated an increase of 11 points on DIBELS from pretest to posttest, while students in the control group demonstrated a decrease of 2.75 points from pre-test to post-test.

Table 1. DIBELS Performance of Experimental and Control Group Students

Group	Number	DIBELS Pre Mean/SD	DIBELS Post Mean/SD	Difference
Experimental	4	28.00/8.04	39.00/10.23	+11.00
Control	4	29.75/13.45	27.00/7.34	-2.75

Table 2 describes the results of an analysis of covariance performed on DIBELS post-test scores to examine the effects of participation in the treatment when pre-test differences were removed.

Table 2. Comparison of Experimental and Control Group Performance on DIBELS: An Analysis of Covariance

Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Pretest	317.95	1	317.95	10.05	P<.025
Treatment Group	342.94	1	342.97	10.85	P<.022
Error	158.04	5	31.60		

As Table 2 shows, even when pre-test score differences were removed through analysis of covariance, differences between the groups were significant ($F = 10.85$, $p < .022$). Hence, the null hypothesis that the reading performance of the two groups is equal is rejected.

The hypothesis that students participating in the treatment would demonstrate a greater improvement in attitude towards reading compared to similar students not exposed to the treatment was not supported. Table 3 describes students' responses, reported as NCE scores, to this standardized measure of attitude toward reading. Performance is reported as a total score and by sub scores representing Attitude towards Reading as a Recreational Activity and Attitude towards Reading for Academic Purposes.

Table 3. Student Responses to Reading Attitude Survey

Group	N	Total Reading Pre Score (Mean/SD)	Total Reading Post Score (Mean/SD)	Attitude towards Recreational Reading Pre Score (Mean/SD)	Attitude towards Recreational Reading Post Score (Mean/SD)	Attitude towards Academic Reading Pre Score (Mean/SD)	Attitude towards Academic Reading Post Score (Mean/SD)
Treatment	4	56.39/25.25	53.20/35.84	59.45/24.23	47.30/33.65	57.52/30.99	64.25/22.94
Control	4	66.12/30.07	58.50/31.85	62.97/30.62	55.20/33.69	68.80/27.47	59.90/31.73

As Table 3 shows, students' positive attitudes towards reading generally declined over the course of the treatment. Tables 4, 5, and 6 describe the results of analyses of covariance performed on the posttest scores with pretest scores serving as the covariate.

Table 4. Student Response to Reading Total: An Analysis of Covariance

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Pretest	6595.61	1	6595.61	108.70	P<.000
Treatment Group	79.38	1	75.38	1.30	n. s.
Error	303.36	5	60.67		

Table 5. Student Response to Reading as a Recreational Activity: An Analysis of Covariance

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Pretest	5893.20	1	5893.20	32.30	P<.002
Treatment Group	30.24	1	30.24	<1	n. s.
Error	912.05	5	192.41		

Table 6. Student Response to Reading for Academic Purposes: An Analysis of Covariance

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Pretest	3767.11	1	3767.11	22.58	P<.005
Treatment Group	373.41	1	373.41	1.30	n. s.
Error	834.15	5	166.83		

As these tables show, in all cases differences in pre-test scores accounted for a significant amount of variation in post-test scores. However, once that difference was taken into account, treatment group did not affect the post-test scores. Hence, the null hypothesis that students who participated in the treatment would demonstrate an increase in positive attitude towards reading for different purposes was not rejected.

CHAPTER V

DISCUSSION

The results of this study did not support the original hypothesis that students who have higher self-efficacy beliefs towards reading have higher reading fluency skills than students who have low self-efficacy beliefs towards reading through the use of animal assisted therapy. While the students who received the treatment did increase their reading fluency skills more than those students who did not receive the treatment, these students did not increase their self-efficacy beliefs and attitudes towards reading. The students who received the treatment gained an average of 11 points in the DIBELS reading fluency test as compared to the control group who actually decreased an average of 2.75 points. However in the reading attitude survey, the experimental group of students demonstrated on average a less positive feeling towards reading after the treatment, and there was no significant difference between the groups once pre-test differences were taken into account. Results of this research should not be generalized for all students. This study used a small group of students and, therefore, the results cannot be generalized to reflect similar results among all students. While the experimental group did generally raise their reading fluency skills, they did not show a more positive attitude towards reading at the end of the treatment. However, the use of a survey is very subjective and can change day to day depending on the students and how they are feeling at that moment. This variability seems a likely explanation for the response of 1 of the 4 treatment group students to the post survey who failed to respond to a number of items. The effect of that student on the average response of the group of only four subjects was considerable.

Observations made during the weekly reading sessions showed that the students generally were very excited to read and were anxious for their turn to read to Ginger. The students'

interactions with Ginger increased and general observations showed the students were trying to read to Ginger as if they were reading to a younger sibling. Students who were tentative at the beginning of the treatment were anxious to read and seemed to thoroughly enjoy the experience at the end of the program. Students stated they were sad when the sessions were over and wished they could read to Ginger more frequently.

Threats to Validity

Possible threats to the validity of this research would occur in the use of a survey to assess and gain information regarding student's attitudes towards reading. As described above, children's attitudes can change on a daily basis depending on current moods or other outside occurrences; therefore, the use of just a survey to determine attitudes towards reading should not be viewed as a reliable source of information. This was noticed in conducting the research when the students who were excited to read and thoroughly enjoyed the experience then answered that they do not enjoy reading. It should be noted that of the four treatment group subjects, three showed a more positive attitude towards reading following treatment whereas among the control group, three of the four showed a less positive attitude. Clearly the small number of subjects influenced the outcome of the study and would cause a threat to the validity of the research. Other possible threats to validity in this research include the imbalance of genders between the two groups.

Relationship to Prior Research

Similar studies that have used animal-assisted therapy as a reading intervention have shown that this new technique does indeed assist children. Not only does it increase scores and reading fluency, but generally it has shown to increase children's enjoyment of reading. The study produced by Kaymen (2005) went on to show the use of a therapy dog as a reading

intervention did increase students reading scores as well as their self-efficacy feelings towards reading. This particular research does not show an increase in children's attitudes towards reading, but past studies have shown this to occur.

Suggestions for Future Research

Future research will likely produce similar results showing that this type of intervention can assist students and provides students with a new unconventional approach to reading that will encourage reading in a non-threatening environment. Further research in this area should consist of a larger sample size of mixed genders. This research should also include a longer timeframe for the study so as the students are provided more opportunities to interact with the therapy dog and progress with their reading.

REFERENCES

- Artino, A. R. Jr. (2006). *Self-efficacy beliefs: From educational theory to instructional practice*. University of Connecticut. (ERIC Document Reproduction Service No. ED499094)
- Beck, I. L. (1985). *Five problems with children's comprehension in the primary grades*. Pittsburgh, PA: Learning Research and Development Center, University of Pittsburgh. (ERIC Document Reproduction Service No. ED255892)
- Black, S.; Robertson, E. & Bankston, E. (2008) *A history of pet therapy and the value of animal companionship*. Retrieved July 10, 2008, from Starlife Services & Resources, Inc. website: <http://www.starlifeservices.com/resourcedevpettherapy.htm>
- Fuchs, L. S., Fuchs, D., Hosp, M. K. & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. [Electronic version]. *Scientific Studies of Reading*, 5, 239-256.
- Good, R.H, III & Kaminski, R. (2005). Dynamic Indicators of Basic Early Learning Skills (DIBELS). Dynamic Measurement Group.
- Kaymen, M. S. (2005). *Exploring animal-assisted therapy as a reading intervention strategy*. San Rafael, CA: Dominican University of California. (ERIC Document Reproduction Service No. ED490729)
- McKenna, M.C., & Kear, D.J. (1990, May). Measuring attitude toward reading: A new tool for teachers. *The Reading Teacher*, 43(8), 626-639. <http://dx.doi.org/10.1598/RT.43.8.3>
- Nathan, R. G. & Stanovich, K. E. (1991). The causes and consequences of differences in reading fluency. [Electronic version]. *Theory into Practice*, 30, 176-184.
- Nes Ferrara, S. (2005). Reading fluency and self-efficacy: A case study. [Electronic version]. *International Journal of Disability, Development & Education*, 52, 215-231.

Rasinski, T. (2005). Issues and concerns related to reading fluency. [Electronic version]. *Reading Psychology, 26*, 107-108.

Walczyk, J. J. & Griffith-Ross, D. A. (2007). How important is reading skill fluency for comprehension? [Electronic version]. *Reading Teacher, 60*, 560-569.

Welsch, R. G. (2006). Increase Oral Reading Fluency. [Electronic version]. *Intervention in School & Clinic, 41*, 180-183.