

FROM ANXIOUS TO ABLE: SUPPORTING CONFIDENT READERS THROUGH EQUINE-ASSISTED LEARNING

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Abstract

Reading anxiety is a significant barrier to literacy development for many elementary-aged students, particularly those with learning differences, emotional challenges, or prior negative reading experiences. Rearing2Read, a nonprofit focused on equine-assisted literacy programs, serves students in kindergarten through fifth grade who struggle with reading achievement and confidence. Program staff have observed that while many students exhibit high levels of anxiety and low self-efficacy when reading aloud to people, these same students often read confidently and calmly to horses in the farm setting. This observation prompted an inquiry into how equine-assisted learning environments might support the reduction of reading anxiety and facilitate the transfer of reading confidence to traditional academic settings. Grounded in Attentional Control Theory, classical conditioning, and research on anxiety's impact on literacy achievement, this study synthesizes existing literature on reading anxiety, emotional regulation, and evidence-based anxiety interventions alongside emerging research on equine-assisted learning. Drawing from these findings, a three-lesson supplemental intervention was developed for the program that integrates explicit instruction about reading anxiety, mindfulness and relaxation strategies, reflective practice, and the use of a tactile "bridge stimulus" to support high-road transfer of reading confidence. The intervention is designed to help students recognize and manage anxiety, build confidence reading aloud to horses, and intentionally transfer those skills to reading aloud with peers and adults.

Keywords: Reading anxiety, reading confidence, equine-assisted literacy, self-efficacy, transfer strategies.

1 INTRODUCTION

The purpose of this research is to support the development of literacy education by better understanding reading anxiety and implementing developmentally appropriate, research-informed practices that address both the emotional and cognitive needs of struggling readers at Rearing2Read. Rearing2read is an equine-assisted literacy and Horse Powered Reading® program in the southeastern U.S. that leverages the nonjudgmental presence of horses and structured transfer strategies. This study aims to strengthen students' reading self-efficacy and reduce reading anxiety across learning contexts.

1.1 Review of Related Literature

1.1.1 The Challenges of Reading Anxiety

Like regular anxiety, reading anxiety has physical and cognitive reactions in the reader's body. Physical reactions include the release of adrenaline, leading to physical symptoms such as sweating, feeling shaky or faint, a pounding heart, rapid breathing, "butterflies" in the stomach, a tension headache, a stomachache, or even vomiting [8]. Anxiety has been negatively linked to achievement [4]. When these reactions take place, students are no longer reading to learn. This aligns with the Attentional Control Theory by Eysenck and Derakshan, which shares that anxiety inhibits performance by reducing the individual's capacity to process information [1]. Over time, reading anxiety can result in decreased self-regulation, motivation, self-efficacy, and emotional variables [4].

Reading anxiety and reading achievement share an inverse relation in which fall reading anxiety predicts spring reading achievement [5]. Those with higher reading anxiety in the fall, tended to have lower reading achievement in the spring. Early setbacks in reading achievement may cause students to create a "personal narrative" about their abilities in reading, which go on to create reading anxiety. [5]. Reading anxiety manifests and occurs in the brain the same way that classical conditioning operates [3]. An initially neutral stimulus, like reading aloud, is repeatedly combined and associated with an unconditioned stimulus, like peers laughing at the reader. Because of this pairing, the learner forms an "association between reading and negative emotions." When a child with reading anxiety is asked to read aloud in class, the amygdala is activated. Jalongo and Hirsh describe the amygdala as the part of the brain that elicits an immediate sense of dread and fear. After these experiences, students become afraid to try because they associate negative emotions with reading.

1.1.2 Addressing Reading Anxiety

Vaughn et al (2022) integrated evidence-based practices for managing anxiety within reading interventions for upper elementary students with significant reading difficulties [7]. They found that those who participated in the anxiety portion of the intervention, along with the reading interventions, outperformed those who only received the reading interventions. Their anxiety levels decreased and their reading performance increased. The anxiety management instruction used was SST, created by Grills in 2015. The program builds on "evidence-based cognitive-behavioral practices for child anxiety and includes three core areas: (a) recognizing different feelings, specifically those related to anxiety, and understanding how thoughts, feelings, and behaviors are related; (b) practicing various relaxation and stress management skills (e.g., imagery, diaphragmatic breathing, progressive muscle relaxation); and (c) recognizing anxious and unhelpful/negative thoughts and changing/managing them" [4]. The study also suggests that focusing on reading comprehension can reduce reading anxiety.

Farms are using the power of horses to reduce human anxiety levels. Lauren Feldman conducted a study on Rise Canyon Ranch, a farm using horses to teach reading. She shared, "as mental health experts, (they) can learn a lot from interpreting how children approach choosing their horse [2]." She finds that by working together, horses can help students become more confident readers. She also found that student anxiety might cause them to rush and move too quickly. The horses respond accordingly, becoming frustrated themselves or moving away from negative energy. In addition to being "emotional tuning forks," the horses are non-judgmental partners that give confidence to struggling readers [2]. She shared that, unlike other

settings where peers can be bullies and educators can have too much to handle, the horses offer a “steady, comforting presence.”

This study aims to use a bridge stimulus to transfer the feelings of reading to a horse to reading to a group of people. Salomon and Perkins distinguish between low-road (automatic, skill-based) and high-road (mindful, intentional) transfer. Overcoming reading anxiety in this study reflects high-road transfer, as students must apply strategies across settings. Bridging and hugging strategies support this process [6]). Bridging helps students connect skills to real-world situations through reflection and guided questioning, while hugging emphasizes repetition and practice.

1.2 Study Purpose, Context, and Intervention

The purpose of this study was to analyze how the experience of reading aloud to a horse influenced children’s confidence and anxiety when reading aloud in group settings. To help learners with reading anxiety transfer the confidence they build reading to horses at Rearing2Read into the classroom, a three-part supplemental lesson plan was developed and implemented. Before beginning, students and families complete a pre-survey to establish a reading anxiety baseline and guide instruction. The program emphasizes the transfer not only of skills, but also of motivation and mindset, using reflective practice, metacognition, and a “toolbox” of strategies such as mindfulness, guiding questions, and comfort objects to support students in new reading environments. In the first lesson, students are introduced to reading anxiety through a read-aloud and an age-appropriate explanation of how it impacts the brain. They then practice reading with a volunteer and reflect on their feelings. The second lesson focuses on learning and practicing mindfulness techniques, which students apply while reading to a horse, followed by group reflection on their experience and the calming environment. In the final lesson, students are introduced to a small comfort object (such as a rock or crystal) to serve as a bridge between settings. They practice using both mindfulness strategies and the object while reading to a horse and then to their peers. The lesson concludes with group reflection and guidance on how to carry these tools and feelings of confidence into the classroom.

2 METHODOLOGY

2.1 Participants

This study included four participants who had difficulty reading aloud for various reasons and included parent observations. Four is the usual number of students enrolled in this program at any one time. Students typically enroll in the Reading2Read after-school program due to reading difficulties, as that is the program's focus. Many of these difficulties were true for this group of students. Table 1 shows demographic characteristics of participating students, all of whom were between ages 8 and 10.

Table 1. Characteristics of participants.

<i>Pseudonym</i>	<i>Age</i>	<i>Gender</i>	<i>Race, ethnicity</i>	<i>Diagnosis</i>
Benson	10	Male	Hispanic/Latino	Dyslexia, and Speech or Language Impairment
Rudy	9	Male	Hispanic/Latino	Dyslexia and Expressive Language Disorder
GiGi	8	Female	Hispanic/Latino	English Language Learner
Sakari	8	Female	White	None

2.2 Surveys

The data for this study were obtained through student and parent surveys. Each participating student completed a pre-survey before the Rearing2Read program and a similar post-survey at the end of the program. Survey questions were modified from Zlotnik's Reading Anxiety Scale [8]. Pre-survey items asked students to provide information about their confidence to read aloud (e.g., "How does your body usually feel when you read out loud: Calm, Mostly calm. In-between, Nervous, Very nervous" and "When I feel nervous about reading, I know what to do to help myself: Yes, No, Sometimes"). Post-survey items similarly focused on confidence and motivation, but asked specifically about the program (e.g., "Reading to the horse made me feel: Braver, Calmer, More confident, Less scared, The same" and "I feel more confident reading aloud now than before the program: Yes, No, A Little").

Students' parents were also asked to complete a survey at the beginning and end of the reading program. Like the student post-survey, items on the parent survey focused on the impact of Rearing2Read on student confidence to read aloud (e.g., "My child avoids reading aloud: Often, Sometimes, Rarely, Never" and "My child is using calming or confidence-building strategies learned in the program when reading aloud (e.g., breathing, body relaxation, comfort object): Yes, A Little, No").

2.3 Observations

Observations were conducted during each of the three sessions as students read aloud, focusing on behaviors related to anxiety and confidence, such as body language, participation, and use of coping strategies. Notes were recorded after each session to track changes over time, providing additional insight to support and complement the survey data.

2.4 Analysis

Numeric survey results were entered into Microsoft Excel and examined for trends across the four participants. The observations were uploaded to a Google document for analysis. This data

was reviewed and notes were made of initial patterns in the data and excerpts reflecting those patterns. Survey data was displayed in bar charts. The observation results and parent feedback were divided into individual summary descriptions, utilizing participant and parent quotes to elevate their voices.

3 RESULTS

3.1 Survey Results

Survey results indicated that all participants felt increased positive emotions when reading aloud to a horse. While 75% of the participants expressed feeling anxiety reading aloud to groups of people prior to the study, 100% of participants shared a feeling of increased confidence after the program experience. In the pre-survey responses, participants expressed feelings of having a dry mouth, fast heart, calm body and sweaty hands when reading aloud. In the post-survey responses, they expressed their use of helpful mindfulness tools, such as squeezing toes or hands, moving the neck, or imagining a purple elephant. While 75% of parent pre-surveys expressed observing reading anxiety in their children, 100% of post-surveys expressed observing an increased use of mindfulness strategies in their children when reading aloud. Parent post-surveys showed that 100% of participants had positive feelings about participating in the confident readers program and found it to be beneficial for their child.

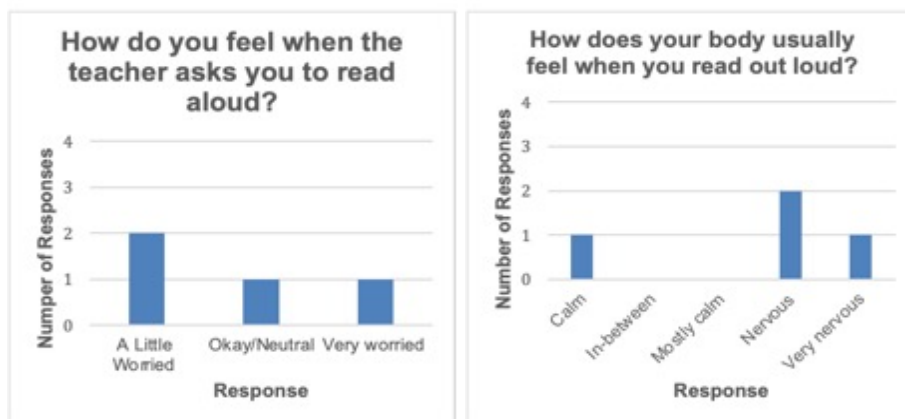


Figure 1. Student pre-survey responses (N=4).

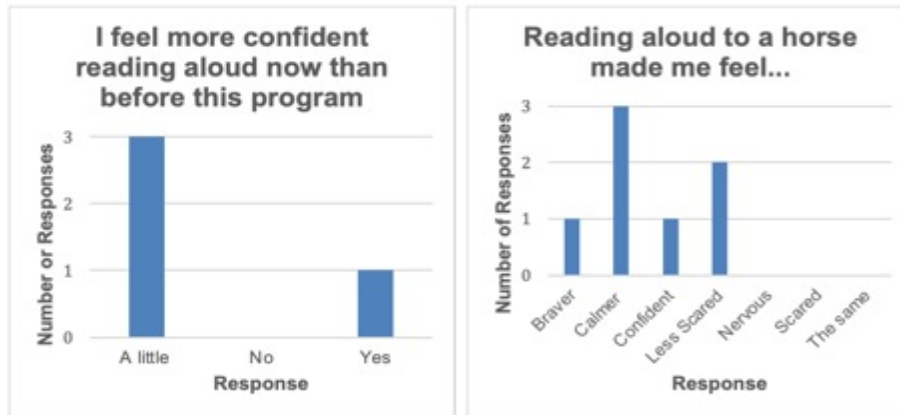


Figure 2. Student post-survey responses (N=4).

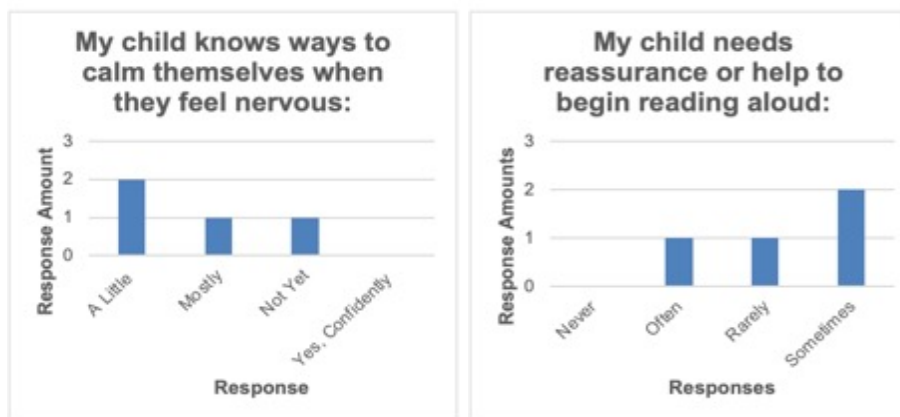


Figure 3. Parent pre-survey responses (N=4).

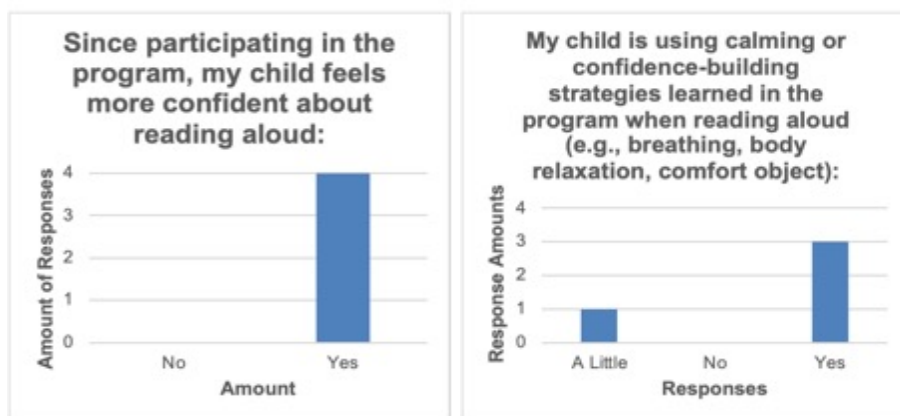


Figure 4. Parent post-survey responses (N=4).

3.2 Participant Observations and Feedback Summaries

3.2.1 Benson

In the first session, Benson read quickly when he felt nervous. He would also look to the volunteer for reassurance. Benson has prior experience with horses and loved reading aloud to them. He shared that he liked reading to a horse because it “did not know when (he) made a mistake.” During the second session, he imagined a purple elephant in his mind when he felt nervous. On the final day, he read to a small group of three people. He started reading quickly with a quiet voice but used calm breathing when he felt himself reading too quickly. His mom shared that the program was “a very positive experience for him.”

3.2.2 Rudy

In the first session, Rudy explained that he “had never read aloud to the class before because he never raises his hand.” He used a quiet voice and paused when he felt nervous reading aloud to the volunteer. During the second session, he used the neck/head mindfulness strategy. He thought it was funny when the horse would “try to bite his book” and that made him feel less nervous. On the final day, he read to a small group of three people. He was hesitant and quiet at first, but showed growing confidence by the end, reading with great expression and humor. His mom shared that he had an “amazing experience reading aloud to the horses.”

3.2.3 GiGi

In the first session, GiGi was very confident reading aloud to the volunteer, but fidgeted with her legs when she got stuck on a word. She explained that “messing up words in English” is what makes her feel nervous to read aloud, but she is confident when reading aloud in Spanish. During the second session, she used the hand-squeezing mindfulness technique. She shared that reading aloud to a horse made her feel like a better reader. On the final day, she read aloud to the whole group. She smiled a lot and shared that she felt “pretty good” reading to the large group. Her mom shared that she noticed GiGi “grabbing a book and reading to her little brother with more confidence. Normally, we have to nudge her to practice, so this feels like real progress.”

3.2.4 Sakari

In the first session, Sakari would pause when she felt nervous reading aloud. She shared that her mouth feels dry when she is nervous. During the second session, she used the toe mindfulness strategy when reading to a horse. She shared that she felt braver reading to a horse. On the final day, she read to the whole group. She paused to calm down and remembered to breathe. Her mom shared that this experience was “so helpful for my daughter to gain skills related to reading aloud in front of a group! She has some perfectionistic tendencies and can be hard on herself when making mistakes. The techniques she learned will be helpful in many parts of her life!”

3.3 Common Themes

Taken together, the student and parent surveys and observations found that participants exhibited an increase in confidence and enjoyment reading aloud after reading to the horses

and practicing the mindfulness techniques. The participants found the bridge stimulus (rock or crystal) to be a helpful strategy as well. Another key pattern was the development of individualized coping strategies, such as breathing techniques, visualization, and grounding actions, which students increasingly used independently during reading tasks. A second major theme was the transfer of confidence from reading to horses into new social contexts, including reading to peers, small groups, and family members. Over time, students became more willing to read aloud in front of others and demonstrated improved fluency and expression. Parent reports reinforced these changes, noting reduced avoidance.

4 CONCLUSION

This study explored the impact of an equine-assisted literacy intervention on reading anxiety, self-efficacy, and confidence transfer among elementary-aged students. Findings from student surveys, parent reports, and observational data consistently indicate that participation in structured reading experiences with horses, combined with explicit instruction in anxiety awareness and mindfulness strategies, supported meaningful reductions in reading anxiety and increases in reading confidence. Participants demonstrated improved emotional regulation during reading tasks but also began to internalize and independently apply coping strategies such as breathing techniques, visualization, and grounding tools.

A key outcome of this study is the evidence of transfer where students were able to move from feeling safe and confident reading to horses into more traditional and socially evaluative environments, including reading to peers, small groups, and family members. The incorporation of a “bridge stimulus,” reflective practice, and repeated exposure across settings appeared to support this transition. Parent feedback further reinforced these findings, noting increased willingness to read at home and reduced avoidance behaviors. While the small sample size limits generalizability, the results provide promising support for integrating equine-assisted learning and anxiety-informed instructional practices within literacy interventions. Future research could explore larger participant groups, long-term outcomes, and the specific mechanisms that most effectively support transfer of confidence across contexts using equine-assisted literacy interventions.

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