A MODEL FOR USING INTERACTION WITH HORSES TO INCREASE READING MOTIVATION OF FIRST GRADE URBAN STUDENTS

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CHAPTER ONE: INTRODUCTION

According to the US Department of Education (2002), 20% of American adults and 44% of minority youth are functionally illiterate. They can function day to day but lack appropriate literacy skills to read and understand written information. The information they miss out on could change their quality of life. Being able to read a bus schedule or to read a storybook to a child is something that most Americans take for granted. Even in a country where education and technology rule, there are still a large percentage of people who do not possess the skills to succeed in life (USDOE, 2002). In an effort to proactively address this issue, it is essential that children learn the value of literacy at an early age and that teachers have the tools to create a foundation for reading that is exciting and creative to help instill an intrinsic motivation to read. If a child is excited and motivated to read from the beginning, it is likely that attitude will continue throughout his/her life (IDOE, 2002).

The debate over the best way to teach children how to read has often been controversial to both educators and parents as administrators and policy makers frequently shift curricula based on the latest trend in education (Burns, Griffin, & Snow, eds 1999). Therefore there is a need to evaluate programs and models that foster

motivation for positive literacy skill development. Gathering the most effective practices could lead to a more effective method of motivating children to read.

Purpose of the study

There have been a handful of studies conducted evaluating the effectiveness of animals in the classroom related to motivation and literacy. There are three main areas to this paradigm: human-animal interaction, motivation, and effective literacy instruction. The majority of the research focuses on each area individually rather than as a piece of a single model. Recently, several programs have emerged using animals to influence literacy, such as The Black Stallion Literacy Project! (1999), Reading with Rover (2002) and Project READ (2002). Anecdotal data collected from teachers shows an increase in desire to read and self-esteem in the students (Reading with Rover, 2002). Other documented programs use dogs as the audience for the readers so they can practice reading aloud without intimidation of reading in front of the class and can therefore become more motivated to read after participating in the program (Reading with Rover, 2002). However, there is a lack of empirical research to support the claims as well as a lack of research on motivation related to literacy in general (O'Flahavan, Gambrell, Guthrie, Stahl, Baumann, & Alverman, 1992). Contributing to the body of scholarly research is a priority especially in new areas. The goal of this project is to create a program model that bridges the three paradigms by evaluating the program that follows

the components. By taking the original program design and integrating the best practices of other programs, a more effective program will result.

The Black Stallion Literacy Project! that was used as the basic program for this study. It uses horses as a motivator for reading and two first grade reader books by the author Walter Farley. Little formal documentation has been performed on the program but the response from the teachers from the pilot study has been promising. A few adaptations have been made to the BSLP to better fit the ideals and philosophy of the model.

The purpose of this study is to address three research questions:
1) Can this program model motivate children to read and 2) Can this program model increase horse knowledge and 3) Can this program model increase literacy awareness?

The following were used to accomplish this project:

- Results of a pilot study.
- Development of an enhanced program design from pilot study results.
- Creation of an enhanced program design including: development of integrated classroom curriculum, mini-visitation protocol, weekly motivational letters and an enhanced Second Touch experience.
- Creation of effective measures for the project including: pre and post-tests, parent and teacher surveys, teacher narrative criteria, classroom observation notes and teacher interview questions.

Program Description

Over 70,000 children in 10 states have participated in the national BSLP! program between 1999 and 2001(BSLP History, 2002). There are two separate programs within BSLP! , a first grade and a fourth grade program. Each program has the same basic goal: to motivate children to read in the early grades and promote lifelong reading. It is important to note that the goal of this program is to increase motivation, not teach children to read. The focus of this research is the first grade program, which consists of three parts: a First Touch experience with a live horse in the classroom, an integrated classroom curriculum, and a Second Touch celebration at the conclusion. The First Touch experience introduces the children to the program through live one on one contact with a horse. It is a way of bringing the main characters of story they read to life in a way that they can experience with all their senses. This helps to create the personal connection. Participants receive a copy of "Little Black a Pony" to read over a period of six weeks at the end of which time they can take the book home. The students are then immersed into the subject of horses connected to the book through visual pieces for the classroom, motivational letters, projects and live horses. In an effort to complete the classroom component, a resource packet for each teacher was distributed to the classrooms. This guide consisted of horse information resources, a craft project and two paper and pencil activities for each week focused around the subject of horses. It also included ways for the teacher to integrate the stories into other subject matter supporting the Indiana State Academic Standards (IDOE, 2002). The program concluded with a celebration and demonstration of achievement. As part of the program, participants were offered an

opportunity to interact with the horses again and asked to read their favorite part of the book aloud to a horse. They witnessed a spectacular show, which ended with the presentation of another book for them to take home.

In 2000, Purdue University was introduced to The Black Stallion Project and conducted a pilot study. It was brought together through a partnership between Agape Therapeutic Riding Center, the Indianapolis Public School System (IPS) and Purdue University. The project involved three IPS schools for a total of almost 200 students. The 4-H staff of Marion County coordinated with IPS to bring in one of the magnet schools, which brought the total to over 250 students. This pilot program received positive results and was increased to over 500 students from the IPS school system for this follow up project.

The involvement of Purdue University helped to assess the value of this program and its effectiveness as well as develop an evaluation tool to further support the program. This project evaluated The Black Stallion Project! as a model for other literacy programs and how the use of live horse interaction can help to increase the motivation of first grade students to read.

For the purposes of this study, the original program design has been modified or enhanced to incorporate the effective strategies of other literacy model and programs. There is a great deal of research reporting what are the best strategies but there are several common components that this research focused on including: multiple exposures to written text (Snow, Burns, & Griffin, 1999), frequent opportunities that foster motivation to read for a variety of purposes (Snow et al., 1998), promoting independent reading outside the school in the home and with other community program that share in

this goal (Burns et al., 1999), making personal connections with the text, (Halliday, 1994), and clear integration of literacy and content learning (Pressley, Allington, Morrow, Baker, Nelson, Wharton-Macdonald, et al., 1999). Therefore the first touch experience includes live interaction with a miniature visitation horse directly in the classroom to foster the personal connection and to strengthen the connection between the experience and the book. A more in-depth classroom curriculum was designed with teacher flexibility in mind. In other words, teachers were given a set of weekly activities and instructional materials to further integrate the subject of horses into regular classroom instruction but teachers were encouraged to be creative and appropriate with the implementation of the materials. Weekly letters written from the perspective of the miniature horse that visited the classrooms were sent to reinforce the motivation and to hint at an exciting event at the conclusion of the program. These letters also offered encouragement to the students to read at home with their family. This component was also stressed in informational letters to the parents at the beginning of the program. More hands on activities designed to educate the students about horses was added to the second touch experience as well. The therapeutic riding center that hosted the second touch experience also tried to create a more exciting and thrilling presentation that more closely resembled what the participants in Florida witnessed at Arabian Knights™. The evaluation component of the project was designed so that the experience could be reported from all points of view including teachers, parents, students and notes from direct observation yielding insight into how effective the delivery and implementation were.

Hypothesis of the Study

The evaluation from this project will support the enhanced program design as a motivator for students to read through interaction with live animals. The results should also support the general use of animal interaction as a motivator and tool for learning.

It is expected that the level of motivation to read, horse knowledge and general literacy awareness will increase as a result of their participation taking into account the bias in the results. The results from the pilot study showed a 12% increase in the student's desire to read. The percent increase for this study should positively correlate with the increased classroom support and emphasis of parental involvement and classroom integration. Individual classrooms will show a direct correlation between the level of integration of the teacher and the increase between the pre and post-test.

Theoretical Framework

In order to create a program that utilizes the best practices or successful literacy programs to marry different theories together to create the framework upon which the assertions and results will be supported. A phenomenological approach was used as a foundation, with human-animal interaction theory, general reading theory and motivational theory added to address specific interests of this project. This study is a

combination of evaluative and survey methodology and qualitative phenomenology through interview, observation and narrative evaluations.

Phenomenology

Patton (1993) describes phenomenology with the question "What are the meaning, structure and essence of the lived experience of this phenomenon for the person or group of people?" In this case, it is simply the respondent's account of their experience participating in this program. Phenomenology allows the researcher to tell the story and gain a deeper understanding of the nature and meaning of the experience. The focus is on a particular phenomenon, which in this project are the experiences of the students throughout this program. However, in order to reduce mono-method bias (Driebe, 2003) and to gain a complete sense of the impact, the parents and teachers are also asked to share insight into the experience from their perspective. An interpretation of the experience is essential to the understanding of the phenomenon being studied. In this study, multiple forms of data collection including qualitative and quantitative methods are used to increase the level of reliability as well as understanding. The qualitative data was gathered through interview, observation and narrative evaluations. Through summarization and interpretation of the responses, one can help support the quantitative data and represent the unique experiences that happen in the classroom as a result of the program that cannot be seen through statistics. Through the reporting of a persons experience not only can the researcher put a face to the number but they can also use the insight gained to support and build theory.

Biophilia Hypothesis

Kellert and Wilson (1993) developed a concept called the Biophilia Hypothesis, which states that humans have an intrinsic attraction to life. This theory is discussed in more depth in the literature review section. This theory provides the support and basis for the claim that animals can impact human learning. If children are intrinsically attracted to nature, the animals used in the program will draw and captivate the attention of the children and create a positive experience associated with reading there by improving their attitude toward reading and increasing their likelihood for success. Maslow (1954) published "Motivation and Personality," which introduced his theory about how people satisfy their various needs. Based on his observations he proposed a general pattern of needs that people would recognize and try to satisfy in generally the same sequence. One of the basic needs listed towards the bottom of his hierarchy is the need for social interaction and belongingness (Maslow, 1954). This social interaction has been increased in the new program design focusing on interaction between the horse and student as well as student to student.

Reading Engagement

According to Rueda, MacGillivray, Monzó, & Arzubiaga, (2001) engagement with academic tasks is described as the observable manifestation of achievement motivation. It can be identified by students' on-task behavior, lack of disruptions during lessons, or completion of activities. More recently, cognitive-oriented researchers argue

that an engaged reader is one who is motivated, knowledgeable, strategic, and socially interactive (Gambrell, 1996; Guthrie & Wigfield, 2000). This requires that the learner be actively thinking about the reading task. Such definitions make engagement difficult to observe. This project takes on a constructivist perspective of engagement. From this approach, the engagement is a process that the active learner uses to connect personal a priori knowledge or previous experiences to new ideas in order to construct new knowledge and build upon what they already know (McCombs, 1995). Constructivism is a theory of learning based on the idea that knowledge is constructed by the knower based on mental activity. Learners are considered to be active organisms seeking meaning. Constructions of meaning may initially bear little relationship to reality (as in the naive theories of children), but will become increasing more complex, differentiated and realistic as time goes on (Funderstanding, 2003).

Language acquisition is a developmental process, which is social in nature (Halliday, 1994). The socio-cognitive perspective says that we are all born with the capacity to learn and that ability is influenced by our social interactions (Halliday, 1994). Because the process is dynamic, learning to read takes the activation of multiple systems. Not only the strategies and techniques that are taught but also the senses and imagination. The Interactive Reading Instructional model helps to account for all of the influences acting upon that learner (Yopp & Singer, 1994). When interaction occurs in an instructional setting, it is dependent upon the teacher, text or stimulus and learner in combination with extraneous stimulus in the room as to the engagement of the reader. This is why the program is structured in such a way to help the student combine those skills and stimulus together to create engagement.

Motivational Theory

Active or engaged reading is grounded in intrinsic motivation. From an engagement perspective, motivations are reasons for reading (Guthrie, & Anderson, 1998). According to Guthrie and Anderson (1998) these reasons can range from independent reasons such as involvement, curiosity and efficacy to more social reasons such as competition or recognition. But like the literacy process, motivations are not static. They develop and evolve as students become more self-aware and the agent of their own engagement (Guthrie, & Anderson, 1998). According to Wigfield and Guthrie, (1997) the independent reasons translate to intrinsic motivation and a desire to be engaged in a task [reading] for its own sake.

Vygotsky

The work of Lev Vygotsky (1896-1934) provides a sound theoretical foundation for investigating the rationale underlying various instructional strategies. He proposed a theory called the zone of proximal development (1978). According to Doolittle's (1997) interpretation, mental functioning is not merely absorbed or transmitted verbatim from teacher to student but actively constructed by the individual as the result of social experience. It is for this theory of cognitive development that Vygotsky has become known as a major contributor to the discussion of constructivism.

Vygotsky believed that an individual's immediate potential for cognitive growth is limited on the lower end by that which he or she can accomplish independently, and on

the upper end by that which he or she can accomplish with the help of a more knowledgeable other such as a peer, tutor, or teacher (1978). This zone is not static. It changes with the introduction or exposure to every new experience. Vygotsky (1978) went on to state that learning must be relevant to the student and that he or she must feel a need for development to occur. Vygotsky (1978) concluded that students learn through interactions with others. Students internalize the knowledge and skills first experienced during these interactions and eventually use this knowledge and these skills to guide and direct their own behavior.

Real World Interaction

All of these theories come full circle when the concept of real world interaction is introduced. In 1938, John Dewey proposed a theory of Experience and Education. This theory is truly interdisciplinary in that it is used as a foundation in many different fields. Dewey was convinced that successful education is connected to personal experiences of the learner (1938). He defines growth as "the ability to learn from experience" (p.44). Ross (1988) conducted an extensive meta-analysis of this work literature and found that hands-on science activities aroused attention, questions and supported active learning. This study supports Dewey's theories that the lived experience is vital and even more valued is the transformation of that phenomenon and the integration into our personality (1938). The goal of education from this point of view then would be to structure and organize learning activities in which experience themselves facilitates learning.

Assumptions of the Study

Certain assumptions are made regarding the students in the classroom who participate in this study as well as the teachers in each classroom:

- The majority of students in IPS have not had previous experience with horses.
- The IPS school system is looking for ways to improve reading readiness in the lower grades
- Teachers will implement pieces of the resource guide in their classrooms.
- All students are first graders.
- All students will have a basic working knowledge of the alphabet.

Confounds

As with any research, there are certain limitations with this particular project. These limitations are considered throughout this project and into the analysis of the data.

- The families in this school system tend to move frequently which could affect the number of students who participate from beginning to completion of the program.

- Some documents will be translated for ESL parents and students including release forms and all evaluative materials.
- There are transportation difficulties with IPS thus the second touch visit could be shorter for some than others.
- The student's previous background with animals could affect their attitude toward the horse.
- The potential for bias is very high in the comments from both parents and teachers. They are all excited about the program and want it to succeed increasing the likelihood that they will not report negative responses.

Definition of Terms

Biophillia- Literally translated means love of life. The operational definition for this study will be the intrinsic attraction of a human to nature (Kellert & Wilson, 1993).

Therapeutic Riding- A therapeutic intervention for children and adults with disabilities that uses the development of riding skills and the movement of the horse to achieve a therapeutic outcome (NARHA, 2003).

Equine Assisted Psychotherapy (EAP)- A psychotherapy intervention using the horse as a tool (NARHA, 2003).

Animal Facilitated Therapy (AFT)- A therapeutic intervention using the interaction with an animal to achieve a therapeutic outcome (Wilson & Turner, 1998).

Animal Assisted Learning- The use of interaction with an animal in a classroom or educational setting to enhance the learning environment and achieve an educational outcome (Wilson & Turner, 1998).

Sensorimotor- Sensory (tactile, auditory, visual, vestibular, olfactory, taste) input gathered by the body through movement (NARHA, 2003).

Literacy- Used as a blanket term encompassing all aspects of reading: word/letter recognition, comprehension, meaning and acquisition of skill (Snow, Burns, & Griffin, 1998)

CHAPTER TWO: REVIEW OF LITERATURE

For years there has been a great debate over literacy instruction (Burns, Griffin, & Snow, Eds 1999). It is a constant challenge to find the best strategies to teach children how to read and to keep them motivated to read throughout their academic career. Some researchers believe that motivation is essential for successful literacy (Guthrie, 2002). A few literacy programs utilizing animals to motivate children to read have been developed. For example: Reading with Rover (2002), Project Read (2002), and The Black Stallion Literacy Project™ (1999). By examining some common components of these successful programs, current accepted reading models and motivational theory models; we can synthesize a model specific to learning, what we will call the enhanced program design. This is not an instructional strategy model for teaching children to read. It is a model for motivating children to read. It is also a model that can be applied to other areas of learning. It draws upon the experiential learning theory of Dewey (1938), Edward Wilson's (1984) Biophilia Hypothesis, Vygotsky's Social Constructivist theory and his concept of the Zone of Proximal Development (1978) as well as the motivation research work of Guthrie and Knowles (2001). The focus of this review of literature is to explore current research on each of the three main areas related to the model: human-animal bond (interaction), literacy theory, and motivational theory as they relate to the components of

the animal-assisted literacy model. The review opens with an exploration of the foundational principles of human animal interaction and moves through each phase of this model in an attempt to bring it all full circle and demonstrate the interconnectedness of the body of work. The information was collected from a variety of sources to ensure adequate presentation of the material. Peer and non peer-reviewed journals, magazine articles, research collections, books and electronic media were used to collect the information.

Foundation Principles

This program design pairs children and animals together in a motivational partnership. Therefore, it is important to explore the basis of the human animal relationship. There has been a long relationship between companion animals and humans that dates back over 14,000 years ago to the domestication of the wolf (Serpell, 1986). This is a key period in human history because the relationship between the human and animal up until that time had been strictly predator/prey. This domestication was theorized to be out of a desire for companionship and marks a shift from a hunting and gathering lifestyle to an agrarian one (Serpell, 1986). Over the next few thousand years, other animals were domesticated and used for work as well as companionship, as the agrarian lifestyle continued to grow throughout the world (Serpell, 1986). In the Greek and Roman empires significant evidence exists of animals used for companionship as well as religious icons as seen in archeological findings of elaborate burials and inscribed

epitaphs describing the pets' merits and expression of grief from owners (Bodson, 2000). These findings indicate a relationship comparative to a human- to-human relationship and one based on companionship, not just the intrinsic and societal value of animals in an agricultural society. However, the question is whether this relationship was equal, or one of dominance. In particular, the concept of animals as having a co-equal value gave way to notions of superiority. The Book of Genesis makes reference to humans as having dominion over every living thing as cited by Serpell and Paul (1994) in their exploration of the Human Animal relationship. This would support the theory of a more dominant or unequal relationship. Through more of their research, they recognized a movement in the 1700's to give animals the same rights as humans (Serpell & Paul, 1994). A philosopher named Jeremy Bentham belonged to a small contingency of advocates who believed that any living thing that had the capacity to suffer pain should be given a moral status therefore applying to them the same rights as humans (Serpell & Paul, 1994). This historical account reveals a paradox between Anthropocentrism and the Biophilia Hypothesis (see next section).

The majority of the literature is based on a societal relationship rather than a relationship between the child and the animal specifically. Since the 1950's, there has been an increased research focus on the role of the pet in the family and attachment (Cain, 1983). Anne Ottney Cain (1983) attempted to define this role by collecting data from 62 families from across four states representing varying family make-ups and ownership of different kinds of pets. In the results of her questionnaire, the reasons for pet ownership ranged from "Replacement of a pet or family member" (10%), to "companionship and pleasure" (50%). In 32% of the respondents, there was a recorded

increase in family communication and a decrease in stress after getting the pet. Most notable changes were in the relationship between parent and child. The results indicated that the pet helped the children to learn key developmental skills such as communication and coping strategies (Cain, 1983). Respondents also indicated an increase in social relationships and confidence in social situations that included the pet. Another significant finding was that 87% of the respondents described their pet as a member of the family and that they shared the emotional atmosphere of the household (Cain in Katcher & Beck, 1983). This supports an emotional bond between a family and their pet and indicates an influential connection to emotion.

The review of history reveals a relationship between man and animals that has changed and evolved over time and is continuing to change. There still is, and always will be, a debate regarding the nature of the relationship (Serpell, 1989). It is not surprising that people have capitalized on this influential relationship for therapeutic and educational purposes (Wilson & Turner, 1998).

The Enhanced Program Design

If you examine the various publications that describe best practices in literacy instruction (Pressley et al., 1998) you will find common themes among all of them. The focus of this program is on the motivation of the reader rather than the skill itself. The philosophy is if one can instill a positive attitude about reading and promote literacy awareness at a young age, then the student will be more likely to succeed (McKenna,

2001). Literacy awareness is the awareness of strategies one can utilize to become a skilled reader. This includes knowledge of where to find access to books, skill in effective reading strategies, and choosing appropriate text or self-regulating. There is a vast sea of research reporting what are the best strategies but there are several common components across the board:

- Multiple exposures to written text (Snow, Burns, & Griffin, 1998).
- Frequent opportunities to read, discuss and interpret text (Snow, Burns, & Griffin, 1998).
- Frequent opportunities that foster motivation to read for a variety of purposes (Snow, Burns, & Griffin, 1998).
- An environment that ensures adequate resources (Snow, Burns, & Griffin, 1998).
- Promoting independent reading outside the school in the home and with other community program that share in this goal (Burns, Griffin, & Snow, Eds. 1999).
- Opportunities for reading aloud (Burns, Griffin, & Snow, Eds, 1999).
- A chance to experience enthusiasm, joy and success in learning to read and write (Burns, Griffin, & Snow, Eds, 1999).
- Make personal connections with the text, (Halliday, 1994).
- Balanced reading instruction utilizing multiple methods of instruction (Pressley et al., 1998).
- Clear integration of literacy and content learning (Pressley et al., 1998).
- Frequent opportunities for social interaction (Halliday, 1994).
- Allowance for ownership in the experience (Corno, 1992) and (Kohn, 1993)

The Guided Reading model (Fountas & Pinnell, 1996) integrates several of these components into its model focusing on meaningful connections and fostering independence. A key factor in reading success is making a personal connection with the text (Harvey & Goudvis, 2000). A positive way to make the text-self connection is through animals. A large proportion of books intended for children to read [or to be read to] include animals as the main character or focus (McCrindle & Odendaal, 1994). The proposed program design combines effective literacy strategies with the original Black Stallion Literacy Project™. Each component integrates the effective strategies mentioned above; motivation, access, integration of text, reading aloud and creating joy and enthusiasm through demonstration and recognition. A benefit to participating in this type of program is an increase in exposure to the animal you are reading about and interacting with through the integration of the subject into the classroom. The classroom component promotes the integration of the subject or animal into the classroom curricula for the duration of the unit. This subject integration can foster an overall awareness of particular species in this case a horse.

Making a Connection

The first time the students are introduced to the horse, it incorporates two important principles: accessing A Priori or prior knowledge (Kujawa & Huske, 1995), and sparking curiosity (Dewey, 1963). When teachers connect new information and concepts to prior knowledge, they activate the student's interest and spark their curiosity therefore instilling a sense of purpose to the instruction (Kujawa & Huske, 1995). Dewey

(1963) postulated that one could inspire a sense of curiosity if the teachings were linked cumulatively to one another. According to Beyer (1991) students learn best when the content is linked to relevant prior knowledge. Prior knowledge acts as a filter or window through which we view and process new information (Kujawa & Huske, 1995). A person's schema or prior knowledge affects the way they view and perceive the knowledge that is being presented to them while at the same time the experience is affecting their schema (Anderson in Ruddell & Ruddell, eds, 1994). All of those preexisting attitudes, beliefs, experiences and knowledge effects how we learn and effects our motivation and desire to learn (Kujawa & Huske, 1995). A study by Bransford and McCarrell (1974) tried to explain how prior knowledge or schema effected comprehension. They asked several subjects to read different passages and respond to them. Through analysis of the subjects' interpretation of the responses, they were able to determine that making a connection to the text was crucial for comprehension. One could make that crucial connection through an animal in addition to the text. Children have their own perceptions about nature called Naïve Biology (Inagaki & Hatano, 2002). The animal is used as the means to connect to the text through their naïve concepts of nature. Creating physical contact with nature can deepen the connection with the text (Dewey, 1938).

Interaction with the Animal

The first and second touch phases of the program are where the child makes physical contact with the horse. They capitalize upon a child's attraction to nature and the

ability to use this attraction and curiosity to motivate students (Guthrie, 1983). The first interaction is the step that generates the enthusiasm and motivation. It is the beginning of the experience for that student, the hook so to speak. It is also their physical connection to the text. The story is about a horse and in their classroom is the main character brought to life. Exposure to a horse specifically can generate new interest in horses however the work done by Ascione (1991), exposing kids to nature in general can increase their empathetic tendencies towards all nature. The horse is simply the species we chose for this project. Other species could be substituted to see if the same results apply. The second interaction is meant to reinforce the motivation and knowledge gained. It is a bridge between the "First Touch" and "Second Touch" portions of the program.

What makes the First Touch so effective is the physical contact with the animal. By making contact, they are capitalizing on an intrinsic attraction to nature. The Biophilia Hypothesis was first proposed by Edward Wilson in 1984 and later elaborated in a book by Kellert and Wilson in 1993 in an effort to explain about the phenomenon. It acknowledges the human's intrinsic attraction to nature; "the existence of a fundamental, genetically based, human need and propensity to affiliate with life and lifelike processes". This hypothesis provides an overarching framework that opens the door for new research on man's connection with nature. It offers a possible answer to the question of why humans have such an affinity for other living beings. Maslow (1954) published "Motivation and Personality," which introduced his theory about how people satisfy their various needs. Based on his observations as a humanistic psychologist, he found a

general pattern of needs that people would recognize and try to satisfy in generally the same sequence. One of the basic needs listed towards the bottom of his hierarchy is the need for social interaction and belongingness (Maslow, 1954). This social need can be obtained through interaction with animals (Maslow, 1954). A review of the Biophilia Hypothesis by Peter Kahn (1997) suggests the attraction may have something to do with recognition of the increased likelihood of finding food, safety, and security in nature (Kahn, 1997).

Kellert (1996) identifies nine values placed on life beginning with (1) The *utilitarian* value, which emphasizes the material benefit of the man-nature relationship. (2) The *negativistic* value focuses on the negative attitudes humans have toward nature. (3) The *dominionistic* value emphasizes the desire of man to control nature. (4) The *naturalisitic* value emphasizes the positive experience when in direct contact with nature. (5) The aesthetic value emphasizes the emotional response to the beauty of nature. (6) The *ecologistic-scientific* value describes the study of nature. (7) The *symbolic* value emphasizes the tendency of man to use nature in communication and thought. (8) The *Humanistic* value emphasizes the capacity for humans to care for and become intimate with animals and the moralistic value. (9) The moralistic value is described as the right and wrong conduct toward the non-human world.

Kellert investigated these values in a study, which sampled people by age, culture education, ethnicity, race, income, gender and residence. He determined that children under six years old were found to fall under the egocentric and domineering value in their attitude toward nature. Between the ages of six and nine, Kellert (1996) found that children were more aware of animals as having interests and feelings and they might

suffer pain and distress. The nine-twelve year old group demonstrated the highest increase in their knowledge of their factual understanding as well as a moralistic and conservationists view of the natural world. The results of this study have a direct impact on the appropriate use of animals in the classroom. It provides valuable insight as to the developmental understanding of life and effects how a teacher would use an animal in the class and make the activities more age-appropriate. It also parallels the developmental ability to distinguish between animate and inanimate objects (Kellert, 1996). Kellert (1996) gives insight to this point commenting that it is worthless to conduct activities with conservation and empathetic subjects with children who do not have the developmental capability to understand this level of abstract thought. The applications of this hypothesis are realized by the use of animals in humane education. Researchers Kellert and Wilson (1993), reviewed several studies relating to the Biophilia Hypothesis, children and education and concluded that animals brought into a human context are powerful reinforcements of human attention and behavior. When a child is given the opportunity to interact with an animal as much as watch it, there are positive changes to behavior, human speech, and nonverbal expression of emotion.

Interaction and the Effect on Development

Pets play a vital role in the development of children. (Robin, Bensel, Quigley & Anderson, 1983). Robin et al. (1983) interviewed 507 adolescents ages 13-18 from five separate institutions including two High Schools and one Psychiatric institution. Of those surveyed, 91% indicated that they had a special pet during their life. According to their

results, pet animals can be very important to youth and can play a special role in the lives of disturbed and delinquent youth. The pet met their need for acceptance and provided unconditional love, as well as emotional support. Some pets even acted as protectors of children in abusive homes and acted as a substitute for family in cases where the child was removed from the home.

Pets can also help to alleviate stress in adolescents who are having difficulty coping with daily life (Robin et al., 1983). The unconditional love offered by a pet is considered highly significant in aiding the developing child (Katz, 1987). In a society where more children are being enrolled in day care centers at an earlier age, they will need more avenues for developing their abilities to observe and bridge the connection with the outside world (Blue, 1986). Young children learn primarily through direct experience with their environment. Therefore, the direct contact with an animal can provide sensorimotor input that cannot come from anything else. Pets offer opportunity for play and imaginative games and can also decrease tensions in the household by strengthening the bond in the family (Cain in Katcher & Beck, 1983). The act of caring for a pet can help a child feel self worth and confidence as well as teach responsibility.

Interaction with an animal in the classroom offers an opportunity to address difficult issues such a grief or death. Several studies of the effects of a pet in development address this point. It is sometimes easier for someone to reflect and discuss the death of a pet than a family member. Providing children an opportunity to discuss their feelings surrounding the death can help them to get through the grieving process (Robin et al., 1983). The processing of grief related emotions could also open the door to teaching empathy. A study presented at the Annual Conference of the Humane Society

of the United States hypothesized that empathy could be taught using animals. Robin et al. (1983) also examined the origins of empathy and children's pro-social attitudes towards animals and humans. Their results conclude that humane treatment can be learned in the early years of development. The findings could have implications on development of curriculum for early childhood classes and the curriculum for full day care for empathy related activities.

Frank Ascione (1991) conducted a study to determine whether Humane Education Programs can have an effect on attitudes general to children's empathetic tendencies. His sample was taken form 16 different classrooms from first through fourth grade. He used a pre- and posttest measure of attitudes toward the humane treatment of animals and a measure of empathy. His results indicated an enhanced animal-related attitude of children depending on grade level. The highest level of change occurred in the first grade sample (Ascione, 1991). This study provides more support for the use of animals in classrooms of younger school age children and how they can develop more empathetic attitudes as a result of that interaction.

The presence of a pet cannot only effect development it can have profound physiological effects on the body (Katcher, 1982). Katcher, Friedmann, Beck and Lynch (1981) wanted to determine whether the subject had to be in direct contact with the animal in order to lower blood pressure. Two groups of neighborhood children were studied. Heart rate and blood pressure were measured while sitting quietly and reading aloud in the presence of a dog and with out a dog present. Whether the children were sitting quietly or reading aloud, their blood pressure and heart rate were both lower when the dog was in the room (Katcher, et al, in Katcher & Beck, 1981). It has not been

studied as to whether the same relaxing effect could be achieved in the classroom with the presence of an animal. Cain & Cain (1991) state two characteristics of the optimal state of mind for meaningful learning: a relaxed nervous system and sense of safety and security and student self-motivation, which is critical to the expansion of knowledge.

Gerald Lamb (1972) conducted a project pairing a field trip to the zoo with integrated classroom activities about zoo animals for children with disabilities and observed increases in language skills, social interaction and confidence during the span of the project. Some schools use Therapeutic Riding as a complement to classroom treatment for children and adolescents with a variety of disabilities. One such program works directly with the public school system and serves over 100 children /per week from various schools ("Agape", 2001). Students participate in a 10-week session, which includes a classroom and riding portion as well as integrated work in the school ("Agape", 2001). Anecdotal evidence shows great success in verbalization of autistic children and increase in positive behavior among a large percentage of students. One study of a Therapeutic Equestrian program examined forty-two children ages six to twenty-one in a five-week summer program as part of a physically handicapped unit of the school system (Bieber, 1983). A horse and pony were brought to the school once a week for riding, driving, and interaction. The horse was also used in the classroom as a motivator and theme for academic activities in small appropriate groups. Results included significant physical benefits, the emergence of communication from a withdrawn non-verbal student, and increased confidence levels in the students (Bieber, 1983). Even though this is not a realistic model for all schools, it is a clear example of

using an animal as not only a motivator in the classroom but also a treatment modality for the physical issues associated with disabilities in special education classrooms.

Studying pets fosters a child's natural sense of curiosity about their environment (Blue, 1986). If one takes a broad view of classroom curriculum in any subject especially at younger grade levels, animals are often the subject or the theme. This seems to help make a connection with the children as well as provide a motivator for learning the subject matter. There is also a high frequency of animals used as the theme for computer based interactive lessons. Dewey (1938) discusses this phenomenon of curiosity related to learning. He surmised that if you can peak this curiosity by connecting children with nature than they will be more apt to learn and retain what they are taught.

Even though it is not practical for every environment, using animals in the classroom can be a rewarding experience for the students involved (Blue, 1986). Using an animal to impact learning does not imply that one has to have a round the clock' pet living in their class. There are many options and alternatives in and out of the school setting ("ASPCA", 2002). There are several examples of the successful integration of pets that will be examined.

In a survey of 428 teachers by Rud and Beck (2000), 21% reported animals in their classrooms. One finding was that all the teachers who had permanent animals, or who allowed students to bring in their own pets, used the animals for more than just atmosphere. The animals were studied directly along with academic subjects and used as prompts for more creative activities. The teachers also reported the animals added to the overall "psychological well-being" of the students through a noticeable decrease in classroom stress and class participation (Rud & Beck, 2000). A study by Condoret (1983)

focused on the use of companion animals in a nursery school for disturbed and normal children with speech difficulties. She found that the introduction of a companion dog to the school promoted motivation among children and lead to an increase in the correct pronunciation of words and sentences when they were related to the animal (Condoret in Katcher & Beck, 1983).

Since September of 1993, the Boulder, Colorado Humane Education Society in coordination with Maple Ridge School, have implemented classroom animal visitation programs in over one hundred and fifty schools with great success (Huddart, 1995). Participants indicated observing cooperation among students involving the care of the animal. The teachers also observed an increase in student's ability to express appropriate emotion where they had not been able to before (Huddart, 1995).

Classroom Integration

The classroom curriculum developed for the program is focused on integration. The concept of integrating the subject matter employs two important factors: connecting the material creating a balanced or holistic approach, and building upon prior knowledge by constructing new knowledge. Research in education has come to one great understanding; there is no one right way to teach (Burns, Griffin, & Snow, eds 1999). But pulling from multiple strategies sometimes referred to as balanced instruction, is more successful at engaging students (Pressley et al., 1998). Many researchers have observed that student engagement can be greater and learning heightened when reading and writing are integrated with content-area instruction (Applebee, 1996; Barth & Mitchell, 1992). A study by Pressley et al. (1998) focusing on the nature of effective first

grade literacy instruction, found a consistency in the most effective classrooms in that they all had a greater intent to connect reading and writing skills and content areas.

According to Monzo & Rueda (2001) engagement with academic tasks is described as the observable manifestation of achievement motivation. It can be identified by students' on-task behavior, lack of disruptions during lessons, or completion of activities. More recently, cognitive-oriented researchers argue that an engaged reader is one who is motivated, knowledgeable, strategic, and socially interactive (Gambrell, 1996; Guthrie & Wigfield, 2000). This requires that the learner be actively thinking about the reading task. Such definitions make engagement difficult to observe. This model takes on a constructivist perspective of engagement. From this approach, the engagement is a process that the active learner uses to connect personal prior knowledge and previous experiences to new ideas in order to construct new knowledge and build upon what they already know (McCombs, 1996).

Motivations for reading are not static (Guthrie & Anderson, 1994). They develop and evolve over time as students become more aware of who they are (Deci, Vallerand, Pelletier, & Ryan, 1991 quoted in Guthrie & Anderson, 1994, p.23). Guthrie and Knowles (2001) identify four aspects of motivation related to reading: intrinsic motivation, extrinsic motivation, interest and attitude. Each contributes to the conceptual processes that are reading comprehension and literacy in general. From a goal-oriented perspective, motivation can be the reason why a child chooses to read. Specifically, intrinsic motivation refers to the students desire to be engaged in reading for its own sake rather than for a reward. Extrinsic motivation refers to the external rewards as goals for reading such as grades (Guthrie & Knowles, 2001). In general, students display both

intrinsic and extrinsic motivations (Guthrie, & Anderson, 1994). Students who display traits for intrinsic motivation are more likely to achieve success in reading as opposed to those who do it for a reward not because of their curiosity in learning (Wigfield, Eccles & Rodriguez, 1998 and Wigfield & Guthrie, 1997). Researchers believe that the task-mastery or achievement goal is more likely to foster long-term engagement and learning than performance goals, especially when the performance goal emphasizes fear of failure (Ames, 1992). So this implies two important things: we must help create a situation that fosters intrinsic motivation, and we must fosters a positive attitude toward reading. So how is intrinsic motivation created? This research focuses on two general areas: creating a personal interest and sparking curiosity (Dewey, 1938) to create motivation.

Studies have shown that there is a high correlation between personal interest and reading comprehension (Schiefele, 1992). If the students have a personal interest or can make a personal connection to the text, they are more likely to recall the information. Guthrie and Knowles (2001) also contend that one's attitude toward a particular object or subject affects their ability to connect to the material; "Attitudes are affective responses that accompany a behavior of reading initiated by a motivational state" (p. 20). McKenna, Kear and Ellsworth (1995) discovered that a child's positive attitude toward reading decreased as they progressed through elementary school in a survey of 18,000 students. This attitude was highly related to ability. Attitude and interest are two indicators of motivation (Pintrick & Schunk, 1998). Low achievers had a more negative attitude as they progress to sixth grade. As motivation declines, without promotional activities, children are less likely to read (Guthrie & Knowles, 2001). A successful reading model must also promote social aspects to reading (Guthrie, 2000). Social

motivation leads to an increased amount of reading and a higher achievement in reading (Guthrie & Wigfield, 2000). This means promotion of reading at home and social interaction in the form of discussions of the book in and out of class. Another important component of generating intrinsic motivation is real-world interaction (Guthrie & Wigfield, 2000). In a section of a paper written by John Guthrie (2000) found in the Handbook of Reading Research, he details how real life situations used in the classroom can influence intrinsic motivation. The Interaction 1, Interaction 2 and Demonstration portion of the model are deeply rooted in this concept. It refers to a learners' sensory and personal experiences.

> "The main role of real-world interaction is to evoke intrinsically motivated behaviors. Students are alert, attentive, and excited in the presence of a real world object such as a live reptile, ….. They enjoy looking, asking questions, and discussing what they see" (Guthrie, 2000).

Guthrie (2000) connects the work of researchers related to hands on science learning to the positive effects of live animal interaction. Ross (1988) confirmed these results in a meta-analysis of literature. He describes the interaction as a "motivating context for text-based learning" (p. 411). He found that hands-on science activities aroused attention and promoted active learning (Guthrie & Wigfiled, 2000, p.411). Guthrie et al. (1998) found that reading instruction when embedded within hands-on science curriculum increased reading comprehension, strategy use, and problem solving in third and fifth graders and labeled it as intrinsically motivating. In 1992 Romance and Vitale studied an integrated curriculum that combined reading and hands-on activities in science. In a quasi-experimental comparison, students in the integrated curriculum scored higher on

measures of reading achievement and science knowledge than did students pursuing a traditional form of instruction. Anderson (1998) attempted to explain this phenomenon. He reasoned that hands-on science activities would motivate students to read and, in turn, increase their conceptual learning from text. These findings demonstrated that students who read texts in association with hands-on activities had higher comprehension and increases in conceptual knowledge than did students who read the same texts without the intrinsically motivating context. In addition to Anderson's work, Guthrie et al conducted a yearlong intervention study and showed that reading engagement initially learned with intrinsically motivating activities in one knowledge domain could be transferred to a new knowledge domain (Guthrie, Van Meter, Hancock, Alao, Anderson, & McCann, 1998). It is the interest of this program that children engage in reading because they want to, because of a hunger for imagination and curiosity sparked by their participation in the program. Most researchers and educators would agree that motivation "is a very important, if not *the* most important factor in language learning" (Van Lier, 1998) without which even 'gifted' individuals cannot accomplish long-term goals, regardless of the curricula or instructor.

Animals and Literacy Integration

The Pet Society of Northern Alberta developed a program that involved a visiting dog unleashed in the classroom while students interacted with it during class time (Cummins, 2000). The program also includes guest speakers and field trips related to animals and Humane Education. The preliminary results of the pilot evaluation indicate

an increase in classroom attendance and timeliness as well as improvements in attention and concentration as evident by responses and questions during class discussion. They also reported an increase in exam scores (Cummins, 2000). Although this evidence is circumstantial, it supports the theories of animals having a positive impact on the overall achievement of the students in the class.

Children's literature has been considered a tool of socialization since the 18th century (McCrindle & Odendaal, 1993). There are two ways in which animals are used in relation to literacy: animals as the subject and animals as the motivator. McCrindle and Odendaal (1993) studied the frequency of animal related literature was measured among preschool classes. Children of this age tend to ascribe human characteristics to animals. They found that children related more to anthropomorphic animals than realistic depictions of animals. They also determined that 73% of the books read to the preschool children in the study, portrayed an animal as the protagonist (McCrindle & Odendaal, 1993). Previous programs report increases in reading level as a result of using an animal to motivate children to read (Thornton, 2000). A partnership between the Salt Lake Public Library and Intermountain Therapy Animals uses dogs to boost the confidence of young readers called Reading with Rover (Thornton, 2000). Children practice reading aloud to the dogs that act as their audience. Teachers of the students who participate in the sessions report that the students do not feel embarrassed about making mistakes in front of the dogs while they practice, which allows them to feel more comfortable reading aloud in front of their classmates (Thornton, 2000).

Program Conclusion

In order to bring the experience full circle, it is important to provide opportunity to students to demonstrate the knowledge they have gained (Downing, 2000). The purpose is not to highlight one child over another; it is a chance to recognize that everyone has achieved something. In psychology it might be called closure or termination (Yalom, 1995). Yalom (1995) says that it is more than just an end but an integral part of the process. Bringing a formal end to one stage helps to be more accepting of new experiences. The celebration and recognition of achievement can act as an external motivator but the terminating experience can be intrinsically motivating in that it inspires one to go forth and seek out new knowledge (Guthrie & Knowles, 2001). It also increases confidence and self esteem (Driscoll, 1994).

Ethical Perspectives

Some critics of the use of animals in the education say that by placing them in the classroom, the teacher is placing the animal in harms way (Animals in the classroom, 2003). Examples of classroom pets that have been abused or killed are rare; however the opportunity for harm does exist. Those that support their use maintain that only through observation of living organisms can students gain an understanding of animal behavior (Mayer, 1979). William V. Mayer (1979) commented on the use of animals in Biology classes at the Animals in Education conference sponsored by the Institute for the Study of Animal Problems:

> "Caring for animals, observing them, understanding their requirements for life, comprehending their diversity and learning new things about them are all worthwhile objectives. But transcending all of these is a more important objective- respect for living things. Respect is not taught directly it is learned by example and application." (p.14)

Others contend that there is no replacement for the value of a live animal to impact the learning environment; however collaboration with a professional to bring an animal to the classroom may be a better alternative to the animal taking residence in the classroom (Rud & Beck, 2000). Many resources available through the Humane Society of The United States and other animal welfare organizations provide instruction, precautions and guidelines for the use of classroom pets.

Summary

The enhanced program design capitalizes on man's intrinsic attraction to knowledge by creating a personal connection through that instinct and building upon the naïve knowledge children come to school with. It employs all of the components of successful literacy practices in a holistic and balanced manner. This review focused on how integrating the strategies of successful programs into a program that uses live animal interaction can provide motivating and enriched experiences. Exploring the nature of the Human-Animal bond is an enormous undertaking, with a long and complex history. Understanding the elements of why animals can motivate some students is crucial for

their effective use in that setting. The apparent lack of empirical evidence in the literature for certain statements made suggests the need for further research. Investigation is required to find out if animal assisted learning programs benefit participants in the ways the research literature suggests they do. This study takes the issues noted above for which empirical evidence is lacking and attempts, in a small way, to build empirical evidence to support or refute them. Yet with all of the research that has been completed, there are still issues that are left unexplored. In particular the impact of animals in learning and motivation has yet to be fully documented. The general consensus of the literature is interaction with animals can influence socialization, classrooms skills, and the overall development of children. Through more research in this domain, connections can be made to all of the facets of the Human-Animal bond and enable teachers to use animals effectively and appropriately. Animals can be powerful motivators through their presence in the classroom and in literature. They can help to spark the imagination and curiosity for books by creating the personal connection to the material that is so vital for reading success. They can offer unique opportunities for learning and can help to create an atmosphere that is more conducive to learning and exploration.

CHAPTER THREE: METHODOLOGY

Overview of Strategy

The methodology for this study will serve to evaluate the effectiveness of the enhanced program design targeting three areas: motivation, literacy awareness, and horse knowledge. The evaluation piece is divided into four parts: pre-test, post-test, parent/teacher survey, focus groups and observation. Each part is essential for gathering data and providing a complete assessment of the program. Both the pre-test and pots-test were piloted during the previous year. It was piloted with 200 first grade students from the same school system. Minor changes were made to improve the effectiveness of the collection including a short answer section. This is the first year for the expanded curriculum for the teachers, which will be considered a pilot piece and will be evaluated and modified for the next year. An observation piece has been added to track the appropriateness of the curriculum. The analysis of the data will be strictly descriptive statistics using frequency tables and qualitative matrix to organize the results.

Participant Profile

The participants for this study are First grade students from the Indianapolis Public School system. The schools participating in the program were selected from all of the elementary schools in the system by the special education department, which is the contact point for this program. The number of schools was increased from the pilot program due to an increase in funding as well as an increase in the interest by the teachers. Originally six schools were chosen. However, due to lack of funding for transportation, one school declined participation. The five remaining schools made up the convenience sample for this study and agreed to participate in each phase of the evaluation. There were a total of 21 first grade classrooms with an average of 20 students. The beginning sample size was n=420 students. Only those students who completed the release form and pre and post-test were considered in the final analysis. One school out of the five had participated in the pilot study. Because of the already established relationship with that school and the diverse nature of the students, it was decided that the observation portion of the data collection would be conducted in one classroom from this school.

The sample is made up of students from primarily three ethnic backgrounds: African American, Hispanic and Caucasian, with 69% considered minority (IDOE, 2002). The children typically came from low-income households with a large percentage below the poverty level with 70% of the student population receiving reduced or free lunch (IDOE, 2002). With the large influx of Spanish speaking Americans, there was a small percentage (3%) of ESL students who participated in this study. There were

students who started off the school year knowing little to no English and whose parents spoke little to no English. An interpreter was provided to assist in the pre and post-test evaluations but was asked to only translate the question and response directly. This information was entered into the SPSS program and was correlated to determine if the students improved in their English proficiency.

Human Subjects Committee

This project was proposed and accepted by the Human Subjects committee without amendment. It was also sent to the IPS Human Subjects committee for their records. (See Appendix A)

Development of the Instrument

The age and appropriate developmental level was taken into consideration during the development and improvement of the tests. The pre and post-tests were developed by Colleen Brady and Krisana Machtmes in 2001 and was piloted that year with 240 students from the IPS school system. The pre and post-test were revised to make them more effective for the age level. The pre-test was changed to include an open-ended question addressing the student's favorite reading topic and a reading comprehension

question was substituted on the post-test. The rest of the questions have remained the same adjusting the font to make it easier for the students to read.

The parents and teachers were asked to offer more input above what they were asked in the pilot test. The three forms designed for the student, teacher and the parent overlap in content and focus. A high level of confidence can be placed in the accuracy and reliability of observations and perceptions (Anthony, Johnson, Mickelson & Preece, 1991). Each survey was developed using the format created by The Black Stallion Literacy Project! with added questions to fit the objectives of this study. In order to gain further insight into the observations of the teacher, narrative, interview and observation portions were added. The narrative data was collected simply by asking the teachers to include a short paragraph on their overall impressions of the program and their observations from their class during the duration of the project. (See Appendix D) For the observation portion a simple Observation Guide (Patton, 2002) was used. (See Appendix G) The interview questions were created using an Interview Guide (Patton, 2002) and informal interview techniques. (See Appendix F) At the bottom of the Parent survey, parents were also strongly encouraged to write a narrative in addition to their responses. (See Appendix E)

Role of the Researcher

For this study the researcher acted as a participant observer throughout the program and coordinator of the program, which made it difficult to be a silent observer.

The researcher was involved with each of the phases of the planning, delivery and evaluation of this program. The researcher participated in the each of the first touch experiences as the first person the students see when being introduced to the program. They implemented and facilitated each phase of the evaluation including the pre/post-test for every classroom, the observation and the interview as well as the analysis and interpretation of the data.

I have a passion and enthusiasm for this field and have a strong relationship with this program. In the area of animal assisted education, I have 16 years of experience in the applied and academic realms working with species ranging from the wildlife, marine mammals and domestic animals in the education and therapy settings. My interest is in the professional development and emergence of this field. In order to remain objective I pulled myself out of the classroom after the pre-test was given and was not involved in the introduction of the book and the horse. If there was opportunity I remained in the background and photo-documented the 1st Touch but only as an observer. Throughout the remainder of the program I focused on the research aspect and tried to look at the program from every angle to gain different perspectives both on the positive and negative sides. After the conclusion of this study, I went back to being more involved in a hands-on manner with the students. Besides personal bias, another apparent ethical dilemma was the interest from the national organization to see this program succeed and to use the findings from the study to support this program across the country. I have worked with this program from two years and have a vested interest in its growth and expansion. Though it is in the best interest of the national program and the participants that this

evaluation includes all perspectives and views, I must note that there is a potential for bias in the reporting and it should be judged accordingly.

Instruments- Quantitative

Pre-Test

The Pre-test (See Appendix B) measured three key areas: horse knowledge, literacy awareness (where to find books) as well as motivation to read. The instruments are designed for a First grade level. However, it is extremely difficult to accurately test students at this level (Kamii, 1990), which has been taken into consideration during the development and improvement of the tests. Horse knowledge and literacy awareness are used to describe the student's general knowledge in that area. Literacy awareness in most often referred to in relation to adult literacy (Literacy Awareness Training, 2002). In terms of literacy, attempts were made to determine if the student had knowledge of the resources that support literacy, such as where to find books and if they have access to books at home. Horse knowledge, in this context, specifically refers to specific facts relating to a horse. The questions referring to these areas were used to determine if there is an increase in knowledge as a result of exposure to the enhanced program design through The Black Stallion Literacy Project! . Each question on the pre and post-test was a measure of one of the three aforementioned components. The following table outlines the areas each question was designed to target (See table 1). Note that the questions are organized randomly to increase reliability (Patton, 2001).

Table 1

Breakdown of Pre-test Multiple Choice Questions

Question	Answer Type	Area of Measure	Explanation
1. Do you Like to Read?	"Yes" or "No" option	Measures desire ! Indicator of motivation	Desire is considered to be an indicator of motivation. (Pintrick & Schunk, 1996)
2. Have you ever touched a real horse?	"Yes" or "No" option	Measures Horse knowledge ! Indicator of A Priori knowledge	Measuring prior knowledge can be used as a benchmark from which to compare results (McMillan & Schumaker, 2001)
3. Do you have books at home?	"Yes" or "No" option	Measures Literacy Awareness ! Indicator of home involvement	Measures what level of resources the students are exposed to at home.
4. Where do horses live?	3 option multiple choice	Measures Horse knowledge ! Indicator of A Priori knowledge	Second question assessing current level of knowledge relating to horses. Used to measure increase in knowledge from pre to post test.
5. What do you like to read about?	Open ended	Measures Interest ! Indicator of motivation	A theoretical reason of motivation is interest (Pintrick & Schunk, 1996)

(table continues)

6. What do horses	Open ended	Measures Horse	Third question.

eat?		knowledge ! Indicator of A Priori knowledge	Used to compare if there is an increase in knowledge from pre to post test
7. Where do books come from?	Open ended	Measures Literacy Awareness ! Indicator of knowledge of resources that support literacy	This question will also provide insight on the most common places children find books.

Post-Test

The post-test (See Appendix C) contained the same set questions as the pre-test. It was designed, piloted and revised consistently with the pre-test. However, question number 5 was changed to measure comprehension.

Table 2

Breakdown of Post-test Open-ended Question

Question	Answer Type	Area of Measure	Explanation
5. What was you favorite part of "Little Black a Pony"?	Open ended	Measures Comprehension ! Indicator of engagement	A theoretical basis For motivation is engagement. An engaged reader is motivated and will retain more information (Guthrie, & Anderson, 1998)

Teacher and Parent Evaluation Surveys

Using the standards set by McMillan and Schumacher (2001), teacher and parent summative evaluation surveys (See Appendix D) were developed. This evaluation used the same multi-method approach as the pre and post-test. The purpose of the survey was not only to provide evaluative feedback from the teachers and parents regarding the program, but also to support the results from the pre and post-tests. This is a method of triangulation. According to Anthony, Johnson, Mickelson and Preece, (1991) it is important to gain the perspective of multiple parties who have contact with the students being assessed in order to increase the validity of the results. Parents and teachers observe the changes that occur in the students and can offer a more objective perspective as to the nature of that change and its significance. The teacher survey was designed using an Expertise-Oriented approach (McMillan & Schumacher, 2001) allowing the teacher to use their expertise as a teacher to judge the quality of the program model and observable changes in their students. Credibility is also given to parents as they are considered to be the experts in their child's behavior and an accurate judge of change. The design of the teacher survey included two questions using a five point Likert attitudinal scale design and one question using a Semantic Differential Scale with room for open comment (McMillan & Schumacher, 2001). The questions focused on the program design and overall attitude of the class toward their participation.

The parent's survey used the same scale as in the pre and post-test design indicating a "Yes" or "No" response. The questions focused on the three areas the same as the pre and post-test. There is substantial overlap between the three instruments again improving the objectivity of the evaluation. The parents were asked to report on the

amount of time they talked about the program with their child and how much their child spoke about it at home. They were also asked to report on the child's interest in horses and interest in seeking out books to read. The students were encouraged to read the book at home and to discuss the related class work with their parents throughout this model. Literacy support at home is a key component of literacy success (Tizard, Schofield, & Hewison, 1982). Parents were asked to comment on the amount of time spent reading at home in general. They were also asked to provide open comment on the program at the end of the survey. (See appendix E)

Data Collection-Quantitative

Administration of Pre-test

Before the pre-test was given, the project team met to discuss the entire project, evaluation process and answer any questions. They were also given the appropriate release forms to be returned the day of the pre-test. Along with the release form was a letter informing the parents about the program and evaluation process. The teachers were informed not to give the students any information about the program but they could display the Black Stallion cutout in their classroom as a teaser for the program.

The pre-test was distributed the day of the first touch and proctored by the coordinator. Due to the age of the participants, the proctor went through the test with them question by question with out leading into an answer. The students were informed that if they could not spell the word they were to raise their hand and the proctor or

teacher would help them sound it out but would not help them find an answer. It was administered in the strictest sense to maintain the integrity of the research. The tests were collected before the story was read.

Administration of Post-Test

The coordinator administered the post-test 2 weeks after the second touch visit. The coordinator along with the teacher helped proctor the post-test. The same rules and set up from the pre-test applied. They were collected as soon as the students finished and were bound with the teachers name on the front of the pack. The data was organized and matched with the pre-test and enrollment form.

Administration of the Teacher and Parent Evaluation Survey

Timing is crucial for obtaining valid results from a survey (McMillan & Schumacher, 2001). At the end of second touch, the team leaders were given a packet that contained a teacher evaluation and a parent evaluation. The teachers completed their evaluation and distributed the parent evaluation surveys for the students to take home. In a letter to the parent in the beginning of the program, an indication was made that they will be receiving an evaluation to complete and the importance of returning the evaluation. Parents were expected to return the evaluations within two weeks.

Based on the information from the pilot test, the evaluations were distributed to parents through the class to increase the likelihood of having a sufficient amount of evaluations returned. The parents were informed of the evaluation at the beginning of the

program in the cover letter with the release form (See Appendix E). The importance of returning the release form was emphasized to them.

Data Analysis- Quantitative

After the pre and post-tests were completed and all of the parent and teacher evaluations were collected, they were paired with the release forms. Only those students who had a release and completed pre and post-test were counted. The parent evaluations were also paired to correlate parent involvement and motivation.

After all of the data was organized by class, school, and student, and then coded for name, ethnicity, gender, birth date, each pre/post-test answer and as to whether or not the students needed a translator. The pre and post-tests were entered into the Statistical Package for the Social Sciences (SPSS for Windows, 1998) for analysis. Additional information of race and gender was also correlated with the results. The data was analyzed using descriptive statistics including frequency tables focusing on the change between positive answers from pre to post-test. The short answer section of the pre-test offered insight for the descriptive statistical portion in regards to patterns in their choice of reading material preference but will be entered into SPSS and analyzed according to frequency of response. The pre and post-test provided information on what they identify as the most common means to obtain books.

Instruments- Qualitative

Narrative

The qualitative portion of this study employs a phenomenological approach. The phenomenological approach is a narrative history of the experience as reported by the people who take part or witness the event. In this case the history is given by the teachers and parents of the students who participated in the program. The use of phenomenological research paired with evaluation can provide insight into the personal experiences of those participating in the program that you are evaluating (Patton, 2002). It can provide information that is missed in the surveys. It also allows for expression of unique occurrences or outcomes that can be attributed directly to the program. Again, it offers one more layer of support to the validity of the results.

The teachers were asked to complete a general narrative evaluation on the back of the survey or separate sheet to provide some personal insight as to the benefit of the program and a general evaluation of the program model. They were asked to estimate how much time they spent per week integrating the model into their class and if they went above and beyond the format provided. It is taken into consideration that teachers historically have time to teach the required lessons and have trouble adding things in to their lesson plan. It is the goal of the program to make the integration of the content as simple to integrate as possible to ensure a complete experience for the students, therefore, increasing their chance for success. The resource curriculum that was given to the teachers was part of that objective. Teachers were informed that the evaluation was not meant to take up too much time but their feedback was important to the quality of the

program. This fact was also emphasized to the team leader so they can ensure that all are completed and the most informative feedback could be given.

Observation

During the six-week period of time where the students read their book and participated in the class curriculum, the researcher visited one class and observed them during their designated Black Stallion work time. The chosen class was a teacher from the school that participated in the program previously to provide a longitudinal perspective and support the improvement over time. This was the first year for the students but the second year for the teacher. The coordinator recorded the observations of the class using pre-determined criteria: class participation, recall of information, enthusiasm of participants during activities, teacher delivery, activity age appropriateness, and general observation and recommendations (See Appendix G).

Interview

Each school designated a teacher who would act as a liaison between the program coordinator and the other teachers. They were titled "Teacher Team Leaders". They took on the responsibility or disseminating all information to the teachers and for organizing the classrooms for the first and second touch visits. A final interview with the leader, using a conversational interview approach, was conducted at the same time the post-tests were picked up in order to gain information about the usefulness of the model.

An interview guide with a list of common questions to guide the conversation provided some consistency across the interviews. The interview provided an outlet for a teacher's perspective on the over all affect of the program on her students. This information was compiled and summarized for the final evaluation. The summary was helpful in improving the curriculum for the next year as well as improving the immersion portion of the model.

Data Analysis- Qualitative

The qualitative data was used to assess the motivation of the students throughout the program, the overall impressions of the teachers and any feedback they had regarding implementation and organization of the model. Any unique stories or experiences that emerged from the narrative portions of the evaluation were used to assess potential impact of the model. The intention was to create enough support to generalize the results to future programs that used this model if implemented in a consistent fashion and in similar settings.

The narrative portion of both the parent and teacher evaluation was summarized with identification of common responses, as well as the information gathered from the observation portion. The results from the classroom observation and the follow-up interview with the teacher were an excellent source of data for the support of immersion or integration of content in the success of the student and how it improved the quality of their experience over last year. The analysis is in the form of a summative evaluation,

which began with a review of all the responses of the teachers from the narrative evaluations, the surveys and interviews and any narrative data from parents and other sources. Emerging themes and patterns became the categories into which all of the data was organized and reviewed again. After interpreting the data based on this organization, assertions were made based on the data and a final summary was included with final recommendations.

Threats to Validity

The greatest threat to external validity came in the sampling. The samples were not random. Those that participated in this project were the sample. This is also a very distinct demographic therefore the generalizability of the results is limited to the characteristics of the subjects. A threat to internal validity is that of subject attrition. This demographic has a tendency to move often. There was a high turnover rate in some of the classrooms. Those children who did not participate in each phase of the project were eliminated. Teacher effect is the final threat. Teachers may have told the students about the visit prior to the introduction of the program. This threat is addressed through all correspondence with the teachers. They were urged not to discuss the program prior to the visit in order to ensure accurate assessment of prior knowledge. Another threat is mono-operation bias (Driebe, 2003). We are only able to use one version of this program instead of the ideal situation of having a control where the program design is changed to exclude the use of the animal. The control group school opted to not participate in the program.

CHAPTER FOUR: RESULTS

The main purpose of this study was to evaluate the use of the enhanced program design of The Black Stallion Literacy Project™. The analysis was focused on three areas: motivation of the students to read, change in literacy awareness and change in horse knowledge. The program used structured interaction with an animal to motivate children by:

- Capturing attention by accessing prior knowledge
- Creating a personal connection to the text
- Integrating the subject of the text into all areas of classroom study to build upon prior knowledge
- Reinforcing new knowledge and personal connection
- Demonstrating new knowledge and recognizing achievement

Each component utilizes strategies that are identified as components of successful literacy programs (Pressley et al., 1998). A sample of Indiana First Grade students (n=450) was tested to assess the overall effectiveness of this model. The final sample size that completed each of the components to be considered in the findings was n=265.

Chapter four is divided into three sections corresponding with the three research questions that were evaluated. The three sections are divided as follows: 1) Can the use of animals, such as the case in this program, motivate children to read and 2) Can this

program model can increase horse knowledge and 3) Can this program model support literacy awareness. Each section will contain a quantitative and qualitative portion examining data collected from each of the measures.

Research Question #1- Can the Use of the Enhanced Program Design Motivate Children to Read?

Quantitative Results

According to the analysis of the five data collection instruments used in this study, there was an overall increase in the frequency of positive answers. On the pre and post-test there were specific questions that targeted the indicators of motivation. See Table three for a breakdown of the questions.

Table 3

A breakdown of questions from Pre (P) and Post-test (Q) targeting motivation P-1, Q-1 and P-5

Question	Response Type	Measure	Explanation
1. Do you Like to Read?	"Yes" or "No"	Measures Desire ! Indicator of motivation	Desire is considered to be an indicator of motivation. (Pintrick & Schunk, 1996)
5. What do you like to read about?	Open ended	Measures Interest ! Indicator of motivation	A theoretical reason of motivation is interest (Pintrick & Schunk, 1996)

Table 4 (next Page) indicates 96.2% students responded that they enjoyed reading on the Pre-Test with 3.8% of the students circling "NO" on the Post-Test. On the Post-

Test 97.7% of the students answered “Yes” to question one as shown in Table 5 with 2.3% answering “No”. This was an increase of only 1.5% in “Yes” answers from Pre to Post-Test.

Table 4

Response frequency of P-1 (n=265)

Do You Like to Read?	Frequency	Percentage
Yes	255	96.2
No	10	3.8
Total	265	100.0

Table 5

Response frequency of Q-1 (n=265)

Do You Like to Read?	Frequency	Percentage
Yes	259	97.7
No	6	2.3
Total	265	100.0

P-5 was only asked on the pre-test as an indicator of interest. Table 6 (next Page) shows the breakdown of responses for question 5 on the Pre-Test. The responses were coded into five categories: animals, horses, nature, cartoon characters and other. The

responses were coded by the subject in the title of the book or the book topic that was recorded by the student. The results indicate 23.0% of the students prefer books about animals, 14.7% recorded horses specifically. The highest percentage was recorded under the "Cartoon Character" category. Other favorite topics ranged from baseball or sports in general to science fiction genre of dragons and fairies to biography's and instructional books.

Table 6

Frequency Breakdown of Coded Responses to P-5 (n=265)

Favorite Topic (P)	Frequency	Percent
Animals	61	23.0
Horses	39	14.7
Cartoon Character	83	31.3
Other	58	21.9
Nature	17	6.4
Did Not Answer	7	2.6
Total	265	100.0

Q-5 was substituted to measure comprehension as an indicator of reading engagement and motivation on the Post-Test. Table 7 (next Page) shows the breakdown of question five. The responses were coded according to the students answer in relationship to distinctive situations in the book. The student's responses were written in

the same format beginning with "When". They were told not to write in complete sentences.

Table 7

Breakdown for Q-5 Targeting Motivation

Question	Response Type	Measure	Explanation
5. What was you favorite part of "Little Black a Pony"?	Open ended	Measures Comprehension ! Indicator of engagement	A theoretical basis For motivation is engagement. An engaged reader is motivated and will retain more information (Guthrie, & Anderson, 1998)

Table 8 (next page) indicates 37.0% of the students felt where Little Black saves the boy was their favorite part of the book and 19.2% reported the part where the little boys falls through the ice as their favorite part. The perception is that they are two distinct parts of the books.

Table 8

Frequency breakdown for coded responses Q-5 (n=265)

What was your favorite part of Little Black a Pony?	Frequency	Percent
When little black saved the boy.	98	37.0
When the little boy fell.	51	19.2
When little black and the boy were friends.	30	11.3
When little black ran away.	22	8.3
When little black fell.	22	8.3
When the boy rode big red	25	9.4
Other	10	3.8
Total	265	100.0

Teacher Surveys (TQ)

The teacher surveys were based on a five point Likert scale with response options ranging from strongly agree to strongly disagree. Table 9 (next page) indicates 100% of the teachers responded strongly agree and agree on TQ-1: "The Black Stallion Literacy Project (BSLP!) increased student's motivation to read". In Table 10 (next

page) “Student’s parents commented that the BSLP is a good way to motivate student’s to read” five respondents out of 16 recorded a strongly agree with 68% showing that parents didn’t comment on the program.

Table 9

Frequency of responses to TQ-1 (n=16)

The BSLP increased the student's motivation to read?	Frequency	Percent
Strongly Agree	11	68.8
Agree	5	31.3
Undecided	0	0.0
Disagree	0	0.0
Strongly Disagree	0	0.0
Total	16	100.0

Table 10

Frequency of responses to TQ-2 (n=16)

Student's parents have commented that The Black Stallion Literacy Project! motivated their child to read.	Frequency	Percent
Strongly Agree	6	37.5
Agree	6	37.5
Undecided	4	25.0
Total	16	100.0

The parent surveys were distributed with approximately a 50% return rate (n=150). Table 11 (next page) shows the responses of the parents to question one (PQ-1). Out of the total responses, 52% reported their child discussing the BSLP program at home. Other responses included reading 3.3% and "other" such as art, and Spanish 6.0%. Table 12 (next page) shows the parents responses to P-2 from the survey. For the question, "Did your child read this book with you?", 86.6% of the parents answered yes.

Table 11

Parent's responses to survey PQ-1 (n=150)

What school programs did your child talk about most?	Frequency	Percent
BSLP	37	24.7
Reading	5	3.3
Other	9	6.0
Did not respond	51	34.0
Totals	150	100.0

Table 12

Parent's responses to PQ-2 (n=150)

Did your child read the book with you?	Frequency	Percent
Yes	130	86.7
No	20	13.3
Total	150	100.0

For question three on the parent survey, shown in Table 13, 87.3% of the responding parents reported their children talking about the BSLP program at home. Table 14 shows that 72.7% of the parents said that yes their children have been showing more interest in reading after reading Little Black a Pony. Parents (90.0%) also reported that their children talked about the horse they met at home as shown in Table 15 (next page).

Table 13

Parent's responses to survey PQ-3 (n=150)

Did your child talk about BSLP?	*Frequency*	*Percent*
Yes	131	87.3
No	19	12.7
No Response	0	0.0

Table 14

Parent's responses to survey PQ-4 (n=150)

After reading Little Black a Pony, did they express interest to go read more books?	Frequency	Percent
Yes	109	72.7
No	39	26.0
No Response	2	1.3
Total	150	100.0

Table 15

Parent's responses to survey PQ-4 (n=150)

Did you child talk about the horse they met?	Frequency	Percent
Yes	135	90.0
No	13	8.7
No Responses	2	1.3
Total	150	100.0

Table 16 (next page) shows the frequency of responses to question six on the Parent evaluation. Out of the parents who responded to the question, the highest number of parents reported reading with their children "Frequently" at home (52.7%). Table 16 indicates that only 26.7% of the parents reported reading to their children "Always" and 19% reported reading occasionally. No parents reported never reading to their children.

Table 16

Parent's responses to survey PQ-6 (n=150)

How often do you read with your child?	Frequency	Percent
Always	40	26.7
Frequently	79	52.7
Occasionally	29	19.3
Never	0	0.0
No Response	2	1.3
Total	150	100.0

Qualitative Results

There are a couple of assertions that can be made based on the comments provided by the parents in open comment section of the survey as well as the narratives and interview responses provided by the teachers. The first is that responses indicate that the implementation of this model through the BSLP program increased the motivation of their students to read. The comments made by the teachers in their survey support this assertion. (See Table 17) A second assertion that could be made is that it is the physical interaction with the horse that provides the greatest amount of motivation in that it captivated their attention and provided that personal connection. The ownership component of the model seemed to be a highly motivating factor as well.

Data clips from Teachers in the comment portion of the survey shows the teachers support for the motivational effects of the program. (See Table 18) Teachers made no

responses in opposition of the assertion. The most common theme among the respondents was a mention of the increase in their student's amount of reading. The teachers indicated that the students chose to read over a more common choice during free time.

Table 17

Teacher's responses to survey comments (n=16)

Respondent	Response
1	Any time my students had finished their work; they would pick up one of the books.
2	Watching my student's read sure convinced me that they enjoyed reading Little Black a Pony and Little Black Goes to the Circus.
3	They especially wanted to read about horses and the books they received.
5	The children really loved the Little Black Books.
6	The students must have read the book 10 times!
7	They enjoyed having their own hardback book to keep.
8	My children sat down and read both books as soon as they received them.
	They were enthralled with the story.
9	Students were very excited to read the next story.
15	The horse coming into the class motivated the children to read books about horses.
16	They especially wanted to read about horses and the books they received

Table 18

Parent's responses to survey narrative (n=150)

Respondent	Parents comments
1	She really enjoyed the book. Me too. She really likes horses.
3	He did drawings of Black Stallion all the time
4	He loved it!

5	Her interest in the program was great. Any time she sees horses she talks about the program. It was very helpful.
6	I think it had my son's attention and think it was a good project for children.
9	I think it opened a new interest in him. I was amazed that he could remember the names of the horses and also the breeds.
10	I think kids in the city can learn to love some of the things that they never get to see or touch. Some of them in their lives. They learn about the animals and how to treat them and what they eat and it is hands on. Thank you for letting my son have the opportunity to participate.
11	I think the program is wonderful! My daughter has always loved horses and really enjoyed the whole program. She loves to read to her little brother.
13	I thought it was a good project. The more the children learn about it the more they are reading.
15	I thought it was a neat way to get the kids interested in reading.
16	It was a good experience for her. She enjoyed the book plus she enjoyed the hands on with Little Black, Big Red and Rosie.
17	My child enjoyed getting to see all the horses at once. I think it is a good program that exposes the kids to new experiences.

(table continues)

21	Lewis was very excited and talked about the horses for a week afterward.
26	My daughter loved it. She truly enjoyed the whole experience. It gave her something to look forward to. She wore the mask she made everywhere.
31	My daughter was very emotional at meeting the horses at the circus
32	My daughter really enjoyed meeting the horses.
35	My son loved the horse and he loves the book he reads it all the time to dad, brother, his self, or me.

43	My son remembered another book he had read before about horses. We found it was also by Walter Farley also.
44	My son thoroughly enjoyed the BSLP! . He enjoyed meeting the pony and still talks about his field trip.
63	She also enjoyed reading the books to me. I noticed an improvement in her reading since the project. I hope the project continues.
68	She loved the BSLP. She talked about it every day!
75	The homework Travis and I read together.
82	The man down the street brought his horse down so that we could pet him. The progress that my son has shown in learning to read and loving to read now.
120	This is an interesting project; it motivates kids to read each day and makes the class fun. I'm sure the kids agree.

Each teacher was asked to write a short paragraph about his or her experience. The comments made support the assertion that the children were motivated to read by the project and that the physical interaction with the horse is the main motivator. Each narrative was reviewed for common themes. Table 19 shows the comments that reflect the motivation theme and support research question one.

Table 19

Parent's "additional comment" responses to survey PQ-6 (n=150)

Respondent	Narrative Vignette- Additional comments on the Black Stallion Literacy Project!

1	The BSLP was a good motivator for reading. The class was really excited about the one on one visit with Little Black in their classroom. The children thoroughly enjoyed the books especially the first one because we had red it together more times. The enthusiasm built as the field trip got closer. The children looked forward to it with great anticipation, both because they were motivated by Little Black's visit and the book but also because this was the only field trip for the year…… It is a good motivator for reading.
2	The BSLP was truly a motivator for my classroom. Each student takes out the hard cover books at least twice a day. They want to finish their work so they have time to read their books. They are actually choosing to read rather than me telling them to do it. The idea of them actually meeting a horse close up put a personal touch on their concept of relating to a character in the story. …. We were able to bring in all of the horse grooming equipment and the saddle, etc… This not only gave the students a better understanding of what they were learning but also me as well. I cannot think of a better program that I have been involved in to help promote reading.
3	I thought the program was a complete success! When the first visit included the live pony, my students were in awe. I feel that the students were able to relate to everything in the books…I feel that the students were genuinely excited to learn. The trip was a priceless memory for our urban students in many ways.

(table continues)

(table 19 continued)

5	Several parents mentioned their children's excitement. They were excited about reading a book that was their own. These children were thrilled with their books. I saw them reading and reading them, they were excited.
6	The program was a great motivation for my students. The live horse coming to the room started the excitement to read more about horses. Many students would take their books out and read it during the day. Many of the students wanted to read after we ate lunch [at the field trip]. The program is a great way to encourage young students to read. It encourages life long readers.
8	The surprise element to the project increased the children's eagerness to participate in the activities. Seeing Little Black increased their eagerness to read the first book. They read the whole book in one period. They were reading so intently, I just let them finish.
9	The kids were very excited to read both of the books. It seemed like the level of motivation was greatly increase. I feel that it is very important for students to have real-life experiences that these students rarely have. The students still talk about their new books and love to read them.
10	The visits with the ponies gave them the desire to read the books. These students enjoyed visiting the horses and ponies. They couldn't stop talking about it.
12	The program really motivated them to read. The especially loved their books. As a teacher it is really wonderful to see them reading.
15	The BSLP is an excellent motivator. Parents felt that this was a good chance for the children to read an entire book.

Interview and Observation

The observation and interview phase of the data collection both support these assertions as well. Figure 1 (next page) shows an Outcomes Matrix (Patton, 2001) demonstrating the link of qualitative data to the theme of motivation. During most of the interviews teachers (n=6) reported seeing an increase in enthusiasm for reading. They became more interested in it in general. The students would spend their free time reading and would use the horse analogy in other areas of study voluntarily. Each teacher felt that the introduction phase and first interaction or "First Touch" seems to elevate the enthusiasm and motivation, which carried throughout the entire duration of the program.

My observation of the classroom supported this as well. When the students were working on their horse projects they were actively engaged meanwhile talking about the horses as they worked. The classroom would get very excited and build energy when the teacher would tell them it was time to read their books or time to work on a project related to horses. Each time they would relate to the first time they met Rosie or Little Black. Or they would relate to a personal story that happened in their life.

Figure 1

Outcomes matrix of qualitative data related to motivation (n=16)

	Outcomes of AAL Model		
Themes	Interaction with the horse captivated their attention	Rereading Little Black a Pony over and over again	The students were able to relate well to the book
	Students choosing to read during free time	All skill levels of readers read together as a class	Students would want to finish their work so they could read
	Integration of horses into other lessons	The second touch experience was a great reinforcement	Genuinely excited to learn

Research Question #2- Can the Use of the Enhanced Program Design Increase Literacy Awareness?

Quantitative Results

The results of the data analysis for research question two indicate an increase in literacy awareness. Pre and post-test question number three (P3-Q3) and P7-Q7 targeted the area of literacy awareness. Table 20 shows the breakdown for these questions and the information targeted for analysis. Table 21 (next page) shows that In P3-Q3, 93.2% of the students answered correctly on the pre-test and table 22 (next page) shows that there was approximately a 5.0% increase in correct responses in the post-test.

Table 20

Breakdown of P/Q-3 and P/Q-7 targeting literacy awareness

Question	Type	Measure	Explanation
3. Do you have books at home?	"Yes" or "No" option	Measures Literacy Awareness ! Indicator of home involvement	Measures what level of resources the student is exposed to at home.
7. Where do books come from?	Open ended	Measures Literacy Awareness ! Indicator of knowledge of resources that support literacy	This question will also provide insight on the most common place children find books.

Table 21

Frequency of responses to P-3 (n=265)

Do you have books at home? (P)	Frequency	Percent
Yes	247	93.2
No	18	6.8
Total	265	100.0

Table 22

Frequency of responses to Q-3 (n=265)

Do you have books at home? (Q)	Frequency	Percent
Yes	261	98.5
No	4	1.5
Total	265	100.0

The results of the pre-test for question number seven were coded into three categories: “Library”, “Store” and “Other”. Out of the 265 students, 86.4% stated “Library” as the most common answer, there was a 3% increase in correct answers for question number seven on the post-test. This shows no statistical significance for this question.

The data for questions numbers three, four and six are reported in the previous section. They are also used as support for research question number two as indicators of literacy awareness. Please refer to those tables for complete data set. For question three on the parent survey, shown in Table 13, 87.3% of the responding parents reported their children talking about the BSLP program at home. Table 15 shows that 72.7% of the parents said that yes their children have been showing more interest in reading after reading Little Black a Pony. Table 18 shows the frequency of responses to question six on the Parent evaluation. Out of the parents who responded to the question, 52.7% of parents reported reading with their children “Frequently” at home. Table 18 also indicates that only 26.7% of the parents reported reading to their children “Always” and 19% reported reading occasionally.

Qualitative results

The qualitative analysis for research question number two, indicate a strong correlation between the AAL model and an increase in literacy awareness. Table 23 shows the responses teacher gave in the Teacher Survey (TQ). Each teacher that

responded reported their children participating in some kind of behavior that demonstrates positive literacy skills and habits. Teachers reported their students actively seeking out books in the classroom, having a strong understanding of where books are located and reading more at home in a social context. They also reported their students reading the books multiple times.

Table 23

Teacher's responses to survey narrative (n=16)

Respondent	Teachers Response
1	Any time my students had finished their work; they would pick up one of the books.
3	The children really loved the Little Black Books
4	They especially wanted to read about horses and the books they received
6	The students must have read the book 10 times
7	They enjoyed having their own hardback book
8	My children sat down and read both books as soon as they received them. They were enthralled with the story.
9	Students were very excited to read the next story

The parent's responses to the open-ended portion of the Parent Survey (PQ) indicate a strong increase in literacy in the home. See Table 24 (next page). Parents

reported taking a more active interest in reading with their child. They also reported the student reading the books to their siblings and to them. The parents reported multiple occasions where their skills and interest have improved.

Table 24

Parent's responses to survey narrative (n=150)

Respondent	Parent Responses
5	Erica really enjoyed the book. Me too. She really likes horses.
8	I think it had my son's attention and think it was a good project for children.
25	I think it opened a new interest in him. I was amazed that he could remember the names of the horses and also the breeds.
37	I think the program is wonderful! My daughter has always loved horses and really enjoyed the whole program. She loves to read to her little brother.
39	I thought it was a good project. The more the children learn about it the more they are reading.
55	My son loved the horse and he loves the book he reads it all the time to dad, brother, his self, or me.
62	My son remembered another book he had read before about horses. We found it was also by Walter F.
70	She also enjoyed reading the books to me. I noticed an improvement in her reading since the project. I hope the project continues.
96	The homework Travis and I read together.

Table 25 (next page) shows vignettes of the teacher's narrative essays relating to literacy awareness. Teacher's responses indicate strong outcomes in the area research

question number two. The teachers repeated many of their feelings that they had stated in the open-ended portion of the survey. However, there are several important new statements that support literacy awareness. Teachers reported their student's engaging more in the literacy skill development lessons that related to the books. They also reported that readers who traditionally struggle, using the reading resources in the classroom. One teacher reported their student's "...becoming acquainted with a classic piece of literature". The teachers mentioned several times about phonics and other reading skills that they were able to teach to the students during this program. They talk about increase in confidence and self esteem in relation to reading aloud and the student's personal connection to the text and how that enabled them to be more successful. Their responses support the assertion that there is an increase in literacy support in the home through direct conversations with the parents regarding their children.

Table 25

Teacher's narrative responses (n=16)

Respondent	Vignette of Teacher's Narrative
2	The children immediately read the whole book cover to cover in 15 minutes. Even those struggling with reading listened as those around them read. They learned that using their head can solve problems. They became acquainted with a classic piece of literature. I used Little Black book to work on reading comprehension and style. We read some passages many times over to work on pausing at commas and dropping our voice at periods. We practiced reading with excitement when the little boy fell into the icy water. We even discussed the book illustrations.
3	For the book, I put the kids in groups of four. The students then drew the beginning, middle and end of the story. The next day the students drew the problem of the story. They found more than one problem and solution. For the second book, each child drew an action in the story that they thought no one else would draw then we put the pictures in sequence as a class.
8	Many students mentioned that they read the story to their parents. Many of the students were delighted they could read most of the words.
12	I feel the children were able to relate well to the story. The curriculum resource was a great supplement to learning.
13	They were actually choosing to read. …. to touch on the concept of relating to a character in a story.
15	Even the slower readers could join in. The boy who won the read aloud contest even got dressed up to read to the horses our class's favorite part of the book.

Observation and Interview

During the observation phase of the data collection, I observed the student's actively engaged in the lessons the teacher had prepared around the Little Black a Pony book as well as the activities included in the curriculum. The students were actively participating by answering and asking questions. I observed a phonics lesson where the student's were practicing the method of chunking using the vocabulary from the book. They used words like: riding, falling, and saddle to practice this technique. I also observed the student's becoming more proficient over time with their spelling and reciting of these words on their vocabulary list. In the beginning of the program, the class read the book together aloud as a group. Each of the students was reciting the passages with the class. I observed the English as a Second Language (ESL) student reading the books with the class as well. This group showed a dramatic increase in language proficiency over the six- week course of the program. The class in general showed an increase in language and reading skill.

During the interview with each of the LEAD teachers (n=6), there were comments made regarding the increase in language proficiency and reading skill. Many of the teachers reported using the books as tools to teach their regular phonics instruction. They also reported using the books to teach other literacy strategies including prediction, story circles and action storyboards. One teacher commented, "They could not think of a better program to promote reading". There is strong support indicating an increase in literacy awareness through the classroom observation and teacher interviews.

Research Question #3- Can the Use of the Enhanced Program Design Increase Horse Knowledge?

Quantitative Results

The results of the data indicate that this model fosters an awareness of the animal that is presented in the book, the horse. Table 26 shows the breakdown for the three questions on the pre and post-test that measure horse knowledge and the indicators for each question.

Table 26

Breakdown of P/Q-2, P/Q-4, P/Q-6 targeting horse knowledge

Question	Response Type	Measure	Explanation
2. Have you ever touched a real horse?	"Yes" or "No"	Measures Horse knowledge ! Indicator of A Priori knowledge	Measuring prior knowledge can be used as a benchmark from which to compare results (McMillan & Schumaker, 2001)
4. Where do horses live?	3 option multiple choice	Measures Horse knowledge ! Indicator of A Priori knowledge	Second question assessing current level of knowledge relating to horses. Used to measure knowledge from pre to post test.
6. What do horses eat?	Open ended	Measures Horse knowledge ! Indicator of A Priori knowledge	Third question. Used to compare knowledge increase from pre to post test

Table 27 shows the frequency for question number two on the pre-test. For the students that responded, 55.5% of them had touched a horse prior to the first touch experience. In the post-test that percentage increased to 100.0% of the students having touched a live horse. This is shown in table 28.

Table 27

Frequency of responses for P-2 (n=265)

Have you ever touched a real horse? (P)	Frequency	Percent
Yes	147	55.5
No	118	44.5
Total	265	100.0

Table 28

Frequency of responses for Q-2 (n=265)

Have you ever touched a real horse? (Q)	Frequency	Percent
Yes	259	97.7
No	6	2.3
Total	265	100.0

Table 29 shows the frequency of responses for question number four on the pre-test. The results indicate that 57.4% of the students responded correctly to the multiple-choice question. Table 30 (next page) shows the frequency of responses for the same question on the post-test. The results indicate there was an increase in correct answers. There was an increase form the 57.4% to 81.5%.

Table 29

Frequency of response to P-4 (n=265)

Where horses live? (P) Correct or Incorrect Answer	Frequency	Percent
Cage or House- Incorrect Answer	113	42.6
Stall- Correct Answer	152	57.4
Total	265	100.0

Table 30

Frequency of responses for Q-4 (n=265)

Where horses live? (Q) Incorrect or Correct answer	Frequency	Percent
Cage or House- Incorrect Answer	49	18.5
Stall- Correct Answer	216	81.5
Total	265	100.0

Table 31 shows the frequency of responses for question number six on the pre-test. The responses were coded into five categories: “Hay”, “Grass”, “Other Correct”, “Combination Correct” and “Wrong”. On the pre-test a total of 92.2 % of the students reported a correct answer. The most popular answers were hay and grass, 37.7% and 39.6% respectively. On the post test the number of correct responses increased to 99.2%, shown in table 32 (next page).

Table 31

Frequency of response for P-6 (n=265)

What do horses eat? (P)	Frequency	Percent
Hay	100	37.7
Grass	105	39.6
Wrong	21	7.9
Other correct	31	11.7
Combination correct	8	3.0
Total	265	100.0

Table 32

Frequency of response for Q-6 (n=265)

What do horses eat? (Q)	Frequency	Percent
Hay	88	33.2
Grass	56	21.1
Other correct	39	14.7
Comb correct	80	30.2
Wrong	2	.8
Total	265	100.0

Table 33 (next page) shows the frequency of responses for question number five on the parent survey (PQ) indicating that 90.0% of the parents reported their child talking about the horse that got to meet during the project. Two parents did not respond.

Table 33

Frequency of responses for PQ-5

Did you child talk about the horse they met?	Frequency	Percent
Yes	135	90.0
No	13	8.7
No Response	2	1.3
Total	150	100.0

Qualitative Results

The qualitative responses from both the parents and the teachers indicate an increase in horse knowledge over the course of the project. The greatest increase is in general increase in horse knowledge as well as and increase in desire to learn more about horses. Table 34 (next page) shows the responses of the parents to the "Additional Comments" section of the parent survey (PQ). The parents made references to their children discussing their experience with the horse at home citing specific examples of horse knowledge. One parent reported their child knowing breeds and types of horses that she did not know before. The parents also commented on their child's general positive attitude toward horses in general with words such as: "love", "like", "enthusiastic" and happy in reference horses. The parents also reported a general new interest in horses.

Table 34

Parent's responses to survey narrative (n=150)

Respondent	Parent Response
5	Erica really enjoyed the book. Me too. She really liked the horses.
13	…He did drawings of Black Stallion all the time
24	He learned about what horses eat and where they live. He learned horses can dance and jump.
32	I think it opened a new interest in him. I was amazed that he could remember the names of the horses and also the breeds.
57	I think kids in the city can learn to love some of the things that they never get to see or touch. Some of them in their lives. They learn about the animals and how to treat them and what they eat and it is hands on. Thank you for letting my son have this opportunity.
62	I think it was a great learning experience for the children that live in the city to visit the horses and the farm.
64	It was a good experience for her. She enjoyed the book plus she enjoyed the hands on with little black, big red, Rosie.
79	[My daughter] enjoyed getting to see all the horses at once. I think it is a good program that exposes the kids to a new experience.
86	Lewis was very excited and talked about the horses for a week afterward.
94	My daughter was very emotional at meeting the horses at the circus.
108	My daughter really enjoyed meeting the horses.
126	My son remembered another book he had read before about horses. We found it was also by Walter Farley.
130	[She] enjoyed the program. She learned a lot about ponies.

(table 34 continued)

(table 34 continues)

135	She likes horses.
142	Thanks for giving Erin the chance to experience hands on contact with the horse and sharing information about horses.
149	The man down the street brought his horse down so that we could pet him. The progress that my son has shown in learning to read and loving to read about horses.

Table 35 (next page) shows vignettes of the teacher's narrative evaluation relating to horse knowledge. There were several themes that emerged from their text. The first theme was that this was the first time many of their students had ever touched a horse. The second was that their students were excited to learn about horses. The third was that the hands on interaction with the horses got them excited to learn more about the horses. The teachers commented on the first touch experience as a positive introduction to the world of horses and that is was a positive experience. They also commented on integrating the horse knowledge activities into their lessons.

Table 35

Vignettes of teacher's narrative evaluations (n=16)

Respondent	Vignette of Teacher's Narrative
1	It was a worthwhile experience, as many of these children have never seen a farm. It's a great way to introduce children to horses.
2	We were able to have hands-on contact with horse related items, which gave the students a better understanding of what they were learning. The book that was given to me A wonderful World of horses proved to be a valuable asset. I referred to it often before our horse lessons.
5	So many of our students had never seen a real pony. When the first visit included a live pony, my students were in awe. From that moment on they were so excited to learn more about horses. The trip to the barn was a priceless memory for our urban students.
8	The live horse coming to the room started the excitement to read more about horses. The field trip to the stable was great. They were excited to touch the horse again.
9	Most of them had never touched a real horse before. The trip to the horse farm was fantastic.
10	We spent 3-5 days as a class reading each book working on the related activities related to the book. The students enjoyed visiting the horses and ponies. Each student wrote a paragraph about his or her visit. They wrote about what they learned and their favorite activity.
13	Many of the children within the class have little chance seeing horses and livestock. Also many of the Hispanic community this was an opportunity to be outside of the urban setting.
15	Each child got to touch the horse and most hugged him around the neck. I believe that most of my class had never been that close to a live horse and certainly had never touched one. They became eager readers and horse-lovers

Observations and interview

During my observation of the class, I listened to the students start to use the terminology they were learning when they would talk about their horses. One activity

included writing a paragraph about their favorite horses. The students used the vocabulary words and concepts they had learned about through the curriculum. They were also exposed to history of the horse, which they then used to create their own family crest very much like the crest a knight had on his shield. They demonstrated their new knowledge during conversations with me. The students would take the initiative to read a resource book about horses. The teacher of the classroom I observed brought in more resource books about horses to feed this interest.

The teacher's (n=6) comments during the interview support the assertion of increase horse knowledge. Several of the teachers reported their students using the vocabulary words they had learned as well as answering question during class correctly. The teachers also reported that their students were enthusiastic about learning about Little Black and Big Red. The students' would seek out knowledge on their own through the resource library in the room. One of the schools had a teacher who raised horses. This teacher brought in saddles and other tack to show the students. The teachers all agreed that their students increased their knowledge of horses.

CHAPTER FIVE: DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

Summary of Findings

The results of the study show that the enhanced program design was effective in motivating first grade children to read. It is important to remember that assessing children at this age can be difficult (Paris, Paris & Carpenter, 2001). Each student is coming into first grade at different stages of readiness depending on what exposure they have had prior to this experience. Testing at the first grade level should be treated more as a baseline or a spring board from which their literacy journey will begin.

There were several outlying themes that emerged through the data but in general there were increases among each of the three areas studied including increases in reading at home and crossover of the subject into other areas. However the positive results must be held with prejudice accounting for the potential bias in the reporting. Therefore the ability to generalize the results is limited to situations with the same variable and conditions. This fact should be kept in mind while interpreting the results. Steps were taken to reduce bias by conducting a pilot on the measures, collecting data from multiple sources and coding both the quantitative and qualitative data.

Discussion

Research Question One

The primary goal of the model is motivation. In the pre and post-tests there was only a slight increase in positive response to the motivational indicators. This was to be expected considering there was a significantly high number of students responded positively on the pre-test, which is important to take into account when reviewing the results. It indicates that 97.7% of the students already enjoyed reading. In related studies, students; coming into the first grade generally have a positive attitude toward reading (Kline, 2002). If some of the children were told that we were coming to talk about reading, they might say they enjoy reading. However, what is important to note is that of the children who responded negatively to P-1, "Do you like to read?", a large percentage of students responded positively on the post-test indicating a change in motivation over the course of the program. There were two students who switched from positive to negative. It is difficult to determine whether or not the motivation is external or internal. Active or engaged reading is grounded in intrinsic motivation. From earlier chapters, the engagement perspective says that motivations are reasons for reading (Guthrie, & Anderson, 1998). What is not known, are the exact reasons for that intrinsic motivation? According to Guthrie and Anderson (1998) these reasons can range from independent reasons such as involvement, curiosity and efficacy to more social reasons such as competition or recognition. From this study, it cannot be determined that the reason for the increase in motivation comes directly from horse contact. But like the

literacy process, motivations are not static. They develop and evolve as students become more self-aware and the agent of their own engagement (Guthrie, & Anderson, 1998). This could mean that given different circumstances such as different species or shift in design could yield different results. The results do not clearly indicate that the horse alone is the motivating factor.

Question five on the pre-test shows the impact of popular culture on the favorite topics these students like to read about. Their favorite topic indicated was most influenced by what was popular on TV at the time, i.e.: Poke Man, Power Puff Girls, etc. However, the important factor to consider is the number of students who responded with either the popular name of an animal character or a type of animal. A large portion of the students stated they like to read books that are centered around animals or nature in general. This relates back to the Biophilia hypothesis (Wilson, 1984) and supports the reasoning behind why animals make such effective motivators and why children relate to them so well. Several of the students stated horses specifically. There was a Black Stallion poster sent to each classroom before the first touch experience, which would influence the answer to that question.

The strongest evidence in support of the motivating factors of this model comes from the responses of the teachers and parents. Their statements about the reactions of the students are powerful and capture the true essence of this program. However, the potential for bias is very high. The likelihood that a parent or teacher will report a negative about their child's reading habits at home is poor (Patton, 1990). It could be viewed as a negative reflection on them. Taking into consideration the change in behavior reported by the teacher and parent as well as looking for specific accounts help

to sift through the bias. There were several themes that emerged from the teacher's responses on both the evaluation survey and the narrative. The first major theme was that the children not only read the book in its entirety the day they received it, they also chose to reread it time after time. Teachers reported their students choosing to read their books when given the options for free time. One teacher stated "They must have read it 10 times the same day they got it". Another teacher stated "My children sat down and read both books as soon as they received them". Both of these statements reflect similar ideas given by the teachers. My observations of the class the day of the first touch confirm their ideas as well. I observed the children sitting down with their books flipping through the pages examining each picture and discussing what was happening in each scene. A large portion of each class read the book aloud, reading over each other. They were extremely enthusiastic as demonstrated through their immediate connection to the book. They were instantly engaged and reading. I also observed the students interacting socially with each other, which was discussed in Chapter One as a sign of a successful reading program. The parents also reiterated the same impressions as the teachers. Parents reported their children choosing to read more at night before they went to bed as demonstrated by the parent's account of their children asking them to read. Parents also reported their children reading to younger siblings. One parent stated: "She loves to read to her little brother". This statement can be powerful, however, it is difficult to determine that it is a change in behavior and not a habit she had before the program.

Another major theme was that of the motivating factor of the horse. This was supported through review of the qualitative data. The horse visit and interaction is key to the success of the experience. It ties back to Dewey (1928) that the physical contact with

the subject being studies helps to reinforce the learning. The books being used for the program have horses a mina characters so to create a deeper connection to the text and idea of learning, use live contact with a horse. A large percentage of the students had not touched a horse before the first touch day at their school as reported by the teachers during the interview at then end of the program. The school that was site for the weekly observation has a large Hispanic population. Most of the students from this school brought a unique perspective to the experience. One teacher commented on how the horse motivated them to talk about where they came from and horses that they had been around before. Others were just overwhelmed by the entire experience. When the horses entered the room, the children would be amazed that a horse could fit in their classroom. Their enthusiasm would grow when they were told they could hug the miniature. One child even asked in Spanish, "Who's in there?" not knowing that the miniature was real. One of the key connections made between the students and reading is through the horse. The story is brought to life by the hands-on interaction with the horse. They are then able to relate more to the book that is given to them after the first touch experience. Each teacher commented on the first touch experience in his or her narrative as being the major motivating factor of the program. According to Beyer (1991) students learn best when the content is linked to relevant prior knowledge. So you are creating that bridge between what experiences the students already have with what they are experiencing now. This can however work for and against the process. A person's schema or prior knowledge affects the way they view and perceive the knowledge that is being presented to them while at the same time the experience is affecting their schema (Anderson in Ruddell & Ruddell, eds, 1994). All of those pre-existing attitudes, beliefs, experiences

and knowledge effects how we learn and effects our motivation and desire to learn (Kujawa & Huske, 1995). So if the students had a negative experience with horses, it could effect whether or not they are motivated by them.

The subject of the book was Little Black. This is the character that the kids identified with and learned about. The integration and crossover of Little Black and horses into other academic areas is another indicator of increased motivation. The teachers were asked to integrate the curriculum, as they were able to. Some of the teachers that participated did this more than others. What is important to note, is that the students initiated some of this crossover creating their own thematic unit. While observing the classroom, the students were asked to make Lincoln log houses in honor of Lincoln's birthday. The class decided to turn it into a stall for their horse. One of the crafts included in the activity guide for the teachers included a cut and paste horse. The students took their completed horses and pasted them to the outside of the cabin and colored it to resemble a barn. Some of the students began to engage in imaginative play with their horse and new stable. They sat at their desks pretending to walk their horse into the stall and talk about the horse. This is one example of the students carrying over the focus of horses in other areas The findings demonstrated in Anderson's (1998) work showed that this integration or students who read texts in association with hands-on activities had higher comprehension and increases in conceptual knowledge than did students who read the same texts without the intrinsically motivating context. Anderson also reasoned that hands-on science activities would motivate students to read and, in turn, increase their conceptual learning from text. Some of the teachers would use the focus of horses to teach math. One teacher reported that because the children were so

into horses, it was easy to keep them motivated to do other subjects if you talked about it in the context of horses.

The Hispanic or ESL students who participated in this study showed an increase in their English fluency skills both in reading and speaking. This variable was not directly measured. However, in the interview portion of the project, the lead teacher for the school with the largest Hispanic population commented that she saw an increase in language acquisition for her students, which she attributed to the motivating factors of this program. She commented that having confidence in speaking the language directly effects how they read. Her thought was that this program made them less intimidated to read the Little Black books aloud because of the interaction with the horse.

Research Question Two

The second research question studied was whether or not the enhanced program design increased literacy awareness. There was an increase in the number of students reporting that they had books at home as a result of the books provided gratis by the program. The intention is simply if they have access to books at home they might read them which is key to success in life long literacy. Having a strong support of literacy at home was one of the key factors (Burns, Griffin, & Snow, eds, 1999). For question seven, there was no significant increase in the knowledge of where to find books. This was also expected in that the most common answer (83%) recorded that the library was where books come from. This indicates a strong connection between literacy and school

and would suggest that these children received more exposure to books at school than at home.

The qualitative analysis for research question number two indicated a strong correlation between the program and an increase in literacy awareness. In the review of literature, there are certain factors that attribute to success in the classroom: frequent opportunities to read, discuss and interpret text, frequent opportunities that foster motivation to read for a variety of purposes, an environment that ensures adequate resources and promoting independent reading outside the school in the home and with other community program that share in this goal (Burns, Griffin, & Snow, eds, 1999). In the results teachers indicated changes in behavior that relate to theses factors which are emphasized in the program. Each teacher that responded reported their children participating in some kind of behavior that demonstrates in increase in literacy skills and habits. Teachers reported their students actively seeking out books in the classroom, having a strong understanding of where books are located and reading more at home in a social context. They also reported their students reading the books multiple times. The teachers in general did integrate part of the Little Black books into their regular lesson plan. Some teachers took it much further using it more as a thematic unit for the time they were participating in the program. They created all of their lessons around it. These classes did receive more reading instruction in this context. They practiced language and reading skills using the stories and also created storyboards and story webs.

Teacher's responses indicated strong outcomes in the area research question number two (See Table 30). The teachers repeated many of their feelings that they had stated in the open-ended portion of the survey. Teachers reported readers who

traditionally struggle, keeping up with the other students. One could argue that this is due to the increase in motivation to read which directly increases their skill and comfort or confidence in reading. The largest impact on the student's literacy skills could be attributed more to how in depth the teacher took the project. The level to which the teacher incorporated the project into their daily lessons might affect the degree of increase in literacy awareness. According to one of the teachers interviewed, the second semester of the first grade is the time the students are learning to write in complete sentences and they are encouraged to apply the new language skills they are learning at a much higher rate. The increase in skill happens with or without the program. The difference with using animal interaction is that the children are more likely to be engaged in the lessons, therefore retaining more of what they have learned.

Question Number Three

The increase in horse knowledge is the most significant increase over the three areas studied. The first question of whether they have touched a horse is significant not in the change from pre to post-test, but in the number of children who had not touched a horse before the first touch, 44.5%. It was expected that by the end of the program each child would have been able to touch a horse but the fact that almost half had not ever touched a horse before shows that there is a significant need to expose this population of children to more agricultural experiences. From listening to the children while administering the pre-test, some of the children where counting experiences of having seen a horse on a drive as touching one. The numbers could be even higher. This touch

is what is so important within the program. It is giving them the opportunity to do something that they have never done before. It is making that personal connection that is so significant. However, it is difficult to ascertain whether or not it is the horse specifically and not an animal itself that is important to motivation. As reviewed earlier, Dewey was convinced that successful education is connected to personal experiences of the learner (1938). He defines growth as "the ability to learn from experience" (p.44). Ross (1988) conducted an extensive meta-analysis of literature and found that hands-on science activities aroused attention, questions and supported active learning. This is why the touch is so powerful to learning. It is not merely the exposure to animals but the physical contact; that urge to touch the oil painting in the museum or to make physical human contact between one another. Touch has the first, most direct and powerful effect on the brain's programming and re-programming activity (Stevens, 2003). According to Dewey (1938), a person's current experience is a function of the interaction between their past experiences and the present situation.

The two other questions on the pre and post-test were a clear measure of the gain in horse knowledge. The increase in where a horse lives was more significant that the increase in what horses eat. Only half of the children knew where a horse lived, which correlates with how many had touched a horse before. The increase in knowledge of where a horse lived increased from 57.4% to 81%, which indicates that these students gained horse knowledge from participating in this program. The increase in knowledge for what a horse eats was not as dramatic. This was to be expected because 92.2% of the students answered this question correctly. There were a large number of correct answers for this question. One could deduce that the exposure to television would make this

question easier to answer. What is important to note is that on the post-test the number of answers that correlate to what they learned at the second touch experience. During the hands on activities, the students made a "Horsey Salad" to demonstrate what goes into a horses diet and how it is similar to human diets. The salad included the common grass and hay but also included apples, carrots and peppermints. The answers the students recorded on the post-test reflect this. Some children answered the question with multiple items including all of the items in the salad. Some even wrote just "salad".

The qualitative data collected supports the increase as well. Both parents and teachers reported the students using the horse vocabulary they learned in class. Several of the parents commented on how impressed they were with the knowledge their children would come home and talk about. One parent commented on how their child knew all of the breeds of horses and recalled specific detail about the horse they had seen at the farm for the second touch experience. Other parents and teachers commented on their children drawing horses and making up stories using the facts that they learned in class or at the farm. This is a common theme throughout all of the responses. The interaction with the horse not only motivated them to read but also motivated them to learn about a subject that was exciting to them. Teachers reported that students would seek out books about horses. The familiarity of the subject and the fact that they become immersed in it has this impact. What is important is that they not only learned new knowledge but that they took the initiative to learn more on their own.

Implications

This research has provided valuable insight about the potential impact of human-animal interaction in an educational setting. The program was enhanced to give infrastructure to experiences that occur everyday between children and animals so that they could be guided with consistency and quality assurance. The major barrier to the results of the research is that the interpretation is limited to situations and conditions like the ones in this study. There is potential for bias in the remarks of both the teachers and parents. Steps were taken to reduce the bias as much as possible so that what is left is as accurate as possible. The major implication is giving structure to interactions between children and animals. This would lead to more consistency for documentation and support of these types of interventions giving them more credibility. As these types of interactions grow in popularity either for humane and environmental education or for academic programs, there is an inherent risk to the animal. Following this program design can ensure that the welfare and safety of both the person and the animal are considered top priority.

The implication for education in general lies in two areas: the area of motivation and the area of integrated or thematic curriculum. The results indicate that the interaction with the horse under the conditions of this program motivated these children to read. As more teachers begin to integrate animals into their classroom, the findings can give them structure for how they use the animal as well as provide a flexible framework from which to develop lesson plans that use interaction with the animal as a motivator. Integration of subject matter is becoming more and more mainstreamed (Pressley et al, 1998). The use

of live animal interaction can create more hands on experiential learning opportunities for the students. Those experiences can be built upon by integrating the focus into the everyday curriculum. It would be a more experiential version of a thematic unit and help foster a new way of looking at how we motivate our students to learn especially in subject that are traditionally more challenging for children. In the next chapter, a theoretical model is proposed based on the findings of the research called the Animal Assisted Learning Model. This model takes into account the strategies and practices that are consistently successful in classrooms, it is then merged with the theoretical framework outlined in this thesis. The objective is to create a more generalized structure for interaction that could be used in both therapeutic and educational applications. This framework could be the basis for future research outlined in the next section.

Recommendations for Future Research

As with all things, there is always room for improvement. During the process of this study, several ideas emerged for possible future studies. The researchers could change the parameters of the original program to determine which factors led to motivation. The limitations of this research could be decreased by restructuring the design to include multiple control groups and use of different conditions. There is also no way to determine if the changes in behavior that occur are long term or short lived. The foremost would be to evaluate the program with the control group to determine to what extent the live interaction with the horse plays a role in that motivation. This study could focus on this one aspect of the program to determine that there were not other

factors at play that created the motivation. Another option would be to use the same design with different species of animal to determine if it is the type of animal that makes the difference or simply the interaction with any animal. It would also be beneficial to use this type of program with other areas besides literacy. Could the use of animal interaction motivate children to learn math? The idea is not to teach the skill but to generally motivate children to learn so the assumption would be that no matter the subject, the motivation would still be there providing each component was met. Another area deserving of more attention would be the group of ESL students. Because there was no direct measure of whether or not this program had an effect on their language acquisition skills, one cannot assert that the increase was due to this program. A future project would be to study the effects of animal interaction on the motivation to learn a new language.

The area of animal assisted therapy would be an area worthy of closer scrutiny relative to these types of programs. The design of the enhanced BSLP program could support research into the therapeutic benefits of structured interaction that included an element of education about the specie in conjunction with the interaction. Again there is a lengthy list of variations that could be explored changing the specie and focus area. Program design could serve as a springboard for more formalized research in the area of therapeutic riding. Could this type of interaction have the same effect on children with disabilities? What are the inherent and potential benefits of the interaction? These questions are interdisciplinary in nature and cross over many different areas of academia. This type of research could offer insight into how interaction with a horse can improve academic performance in all areas. Could the horse serve as not only the motivation but

also the means by which to provide character education, skills training, leadership and therapeutic intervention for at risk youth? With the introduction of the Animal Assisted Learning Model, one could be consistent in the structure of the interactions to provide better comparison. Could the model it be used not only as a program model for intervention but for prevention as well? Horses are not only pets or livestock but they are a leisure and professional lifestyle. Further research into models and programs can promote awareness of the benefits of interaction.

In specific reference to the program, several of the teachers indicated a need for more interaction with the horses. One teacher was disappointed that there was not more interaction at the second touch experience. They expressed an interest in having more interaction in the classroom in order to further increase horse knowledge. That teacher recommended having someone from the program come to visit their classroom and talk more about horses in general and ways these children could get involved. This program is only a six-week introduction to horses and then there is not more contact. It would be beneficial to incorporate resources so the students' would be able to continue their interest in horses after the program is over. The Black Stallion Literacy Project! does continue this program in the fourth grade as a method of continuing the motivation. However, it would be beneficial for the students in general if they were provided with information on ways to participate in programs that would give them more exposure to horses such as Mini-4-H in Indiana.

In reference to the methodology and the instruments, the pre and post-tests should be redesigned using a Garfield Likert scale, giving the students more options to choose from when answering the questions. Also including the fourth grade program in the

research could provide for comparison. It would be beneficial to provide more opportunity for feedback from each of the three participants studied in a structured forum such as focus group and more longitudinal interviews. The more methods and opportunities for data collection could also help to limit the potential for bias. Incorporating more methodology from psychology and sociology research would only enhance the research.

The results of this study suggest that interaction with animals can cause a change in children. Programs like the Black Stallion Literacy Project! are beneficial for children to be involved with. It can affect them profoundly. By incorporating the findings, insight and recommendations of this research into future projects, more support for positive human animal interaction can be gained creating better programs, better interventions and better relationships. We can then instill the importance of our relationship with nature around us and inspire stewardship for our natural resources. Amazing things can happen when children and animals interact.

CHAPTER SIX: THE ANIMAL ASSISTED LEARNING MODEL

Introduction

While we know that there is not one effective instruction strategy that works all the time with every student, however we can combine critical components of effective reading programs with the results of this project into one model. The focus of this model is on the motivation of the reader rather than the skill itself. The premise being if one can instill a positive attitude about something at a young age, then the student will be more likely to maintain that same attitude later in life (McKenna, 2001). In the context of literacy, if a student's primary experiences with literacy are positive, they will carry that attitude on through the process and be more likely to succeed and continue reading throughout their life. There is a great deal of research reporting what are the best strategies and practices in education. However, there are several strategies that continue to lead to success in literacy: multiple exposures to written text (Snow, Burns & Griffin, 1998), frequent opportunities that foster motivation to read for a variety of purposes (Snow, Burns & Griffin, 1998), promoting independent reading outside the school in the home and with other community programs that share in this goal (Burns et al., 1999), making personal connections with the text, (Halliday, 1994), and clear integration of

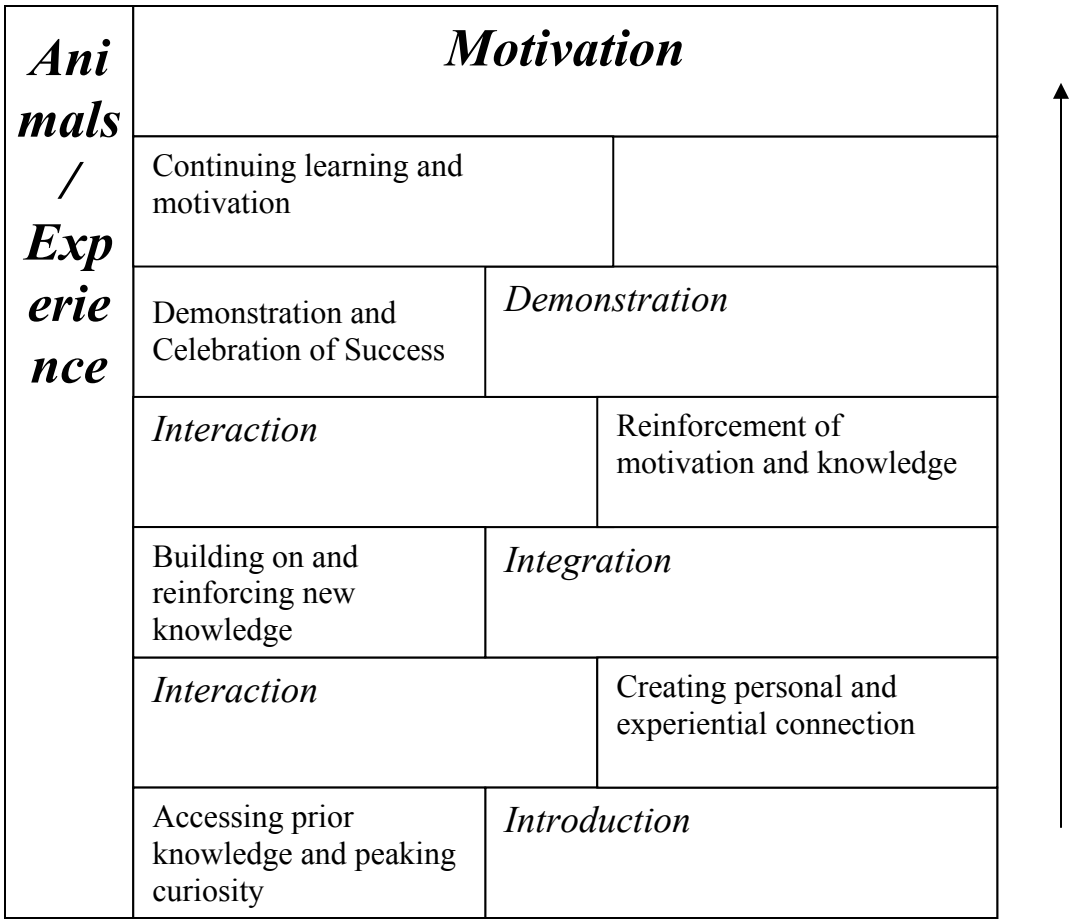
literacy and content (Pressley et al., 1998). All of these strategies have been reviewed in previous chapters.

The program in this study used animals as a way to motivate children to read. The use of the animal not only acted as a motivator but also helped to create a physical connection to the text which was one of the effective strategies mentioned earlier. We know that the animals in this instance were a powerful tool in the success of the program but in what other areas could the animal play a role. Creating a model offers structure and frame for a construct such as learning. The animal assisted learning model is an attempt to create a framework from which interactive experiences could be created. Just as a positive experience shapes our attitude and perception for life so can a negative one. Also taken into consideration for this model is flexibility. The hope is that the model can transcend out of education and into other areas where animal interaction can be of benefit such as therapeutic interventions. It is also designed to be flexible within different situations without sacrificing the quality of the experience.

The model is broken down into five components: introduction, interaction, integration, interaction and demonstration (See figure 2).

Figure 2

The Animal Assisted Learning Model



Each component integrates the effective strategies mentioned above: motivation, access, integration of text, reading aloud and creating joy and enthusiasm through demonstration and recognition. It is built along a continuum in that each component builds upon the previous and affects the following. Any phase can be revisited sliding up and down the continuum depending on the needs of the audience. The theoretical framework upon

which this model is developed is connected cyclically. Each theory supports a crucial component of the model.

Introduction Phase

The introduction phase incorporates two important principles: accessing A Priori or prior knowledge (Kujawa & Huske, 1995), and sparking curiosity (Dewey, 1963). When teachers connect new information and concepts to A Priori knowledge, they activate the student's interest and spark their curiosity therefore instilling a sense of purpose to the instruction (Kujawa & Huske, 1995). Dewey (1963) postulated that one could inspire a sense of curiosity if the teachings were linked cumulatively to one another. According to Beyer (1991) students learn best when the content is linked to relevant prior knowledge. Prior knowledge acts as a filter or window through which we view and process new information (Kujawa & Huske, 1995). A person's past experience determines the way they view and perceive the knowledge that is being presented to them while at the same time the current experience shapes the way they will perceive new ones. (Anderson in Ruddell & Ruddell, eds., 1994). All of those preexisting attitudes, beliefs, experiences and knowledge effects how we learn and effects our motivation and desire to learn (Kujawa & Huske, 1995). A study by Bransford and McCarrell (1974) tried to explain how prior knowledge or schema effected comprehension. Through analysis of the subjects' interpretation of the responses, they were able to determine that making a connection to the text was crucial for comprehension. The animal is used as the means to connect to the text. Then making physical contact with nature can deepen the connection (Dewey, 1938). Another important consideration for creating an effective

instructional model is to take into account learning styles. In 1983, Gardener, one of the leaders in the area of learning proposed that there are seven different types of learners or intelligences: linguistic, musical, logical, spatial, bodily or kinesthetic, interpersonal and intrapersonal. As learners, Gardener (1999) says that we employ more than one of the seven but tend to dominate towards one. As a result of more speculation and research regarding biophilia (Kellert & Wilson, 1993), Gardener proposed an eighth intelligence in 1999, the Naturalistic Intelligence. This intelligence involves the ability to understand and work effectively in the natural world. Gardner's work has brought even more attention to the importance of a physical connection to the natural world and how effective this initial contact can be and can connect with children who otherwise would not.

The first phase is also about generating a personal interest through that connection. Studies have shown a high correlation between personal interest and reading comprehension (Schiefele, 1992). If the students have a personal interest or can make a personal connection to the text, they are more likely to recall the information. Guthrie and Knowles (2001) also contend tat one's attitude toward a particular object or subject affects their ability to connect with the material; "Attitudes are affective responses that accompany a behavior of reading initiated by a motivational state" (p.20). McKenna, Kear and Ellsworth (1995) discovered that a child's positive attitude toward reading decreased as they progressed through elementary school in a survey of 18,000 students. This attitude was highly related to ability. Low achievers had a more negative attitude as they progressed to the sixth grade. As motivation declines, without promotional activities, children are less likely to read. (Guthrie & Knowles, 2001)

Interaction Phase

The two interaction components of this model are based upon a child's attraction to nature and the ability to use this attraction and curiosity to motivate students (Guthrie, 1983). The first interaction is critical to the model. It is the step that generates the enthusiasm and motivation. It is the beginning of the experience for that student, the hook so to speak. It is the physical contact with the animal that enhances a human's attraction to nature and creates an atmosphere where children can learn. The fourth phase, which is a second interaction, is meant to reinforce the motivation and knowledge gained. It is a bridge between the introduction and the demonstration.

The interaction phase exploits our natural attraction to living things. Biophilia (Wilson, 1984) is the basis for the use of the animals as motivators and the bridge between the first and second phase of the model. Gardener (1999) introduced the eighth addition to his multiple intelligences list. The "Naturalistic Intelligence" is displayed by children who identify with the laws of nature and classification. The use of live animals would help to reach this pocket of children who would otherwise not make that crucial connection to the lesson. By playing to their attraction to nature, the teacher can increase their motivation to participate actively in the lesson.

The interaction phase should be social in nature. Maslow (1954) published "Motivation and Personality," which introduced his theory about how people satisfy their various needs. Based on his observations as a humanistic psychologist, he found a general pattern of needs that people would recognize and try to satisfy in generally the same sequence. One of the basic needs listed towards the bottom of his hierarchy is the

need for social interaction and belongingness (Maslow, 1954). This social need can be obtained through interaction with animals. A review of the Biophilia Hypothesis by Peter Kahn (1997) suggests the attraction may have something to do with recognition of the increased likelihood of finding food, safety, and security in nature (Kahn, 1997). In Gerald Lamb's 1972 study of a group of disabled children and a field trip to the zoo, it was concluded that the interaction with the animals increased language skills, social interaction and confidence. This study also supports the need for social interaction as a positive addition to an effective learning model.

An additional benefit to the use of animals is opportunity for lessons in stewardship. In 1996 Kellert identified nine values placed on life. The fifth and ninth value reference a human's emotional and moral response to nature. Children of school age, six and up, are ready and open to the learning experience. Kellert (1996) determined that between the ages of six and nine, children were more aware of animals as having interests and feelings and they might suffer pain and distress. The nine to twelve year old age group demonstrated the highest increase in their knowledge of their factual understanding as well as a moralistic and conservationists view of the natural world. The results of this study have a direct impact on the appropriate use of animals in the classroom which should be discussed during the first interaction to ensure a quality and safe experience for both the animal and student. The research of Kellert and Wilson (1993) concluded that animals brought into a human context are powerful reinforcements of human attention and behavior. When the child is given the opportunity to interact with the animal as well as observe it, there are positive changes to behavior; human speech, and nonverbal expression of emotion.

Pets play a vital role in the development of children. (Robin et al.,1983) as they help to alleviate stress which is beneficial in both an education and therapeutic setting. Because children learn primarily through direct contact with their environment, interaction with an animal can provide sensory input that cannot be duplicated by another source (Blue, 1986). According to the research of Robin et al, pet animals can be very important to youth and can play a special role in the lives of disturbed and delinquent youth. The pet met their need for acceptance and provided unconditional love, as well as emotional support. Some pets even acted as protectors of children in abusive homes and acted as a substitute for family in cases where the child was removed from the home. The animal helps to create a safe and relaxed atmosphere which makes them more receptive to learning (Thornton, 2000). Merely being in the presence of an animal can lead to a decrease in blood pressure (Katcher, Friedmann, Beck, & Lynch, 1983). Thornton (2000) found that teachers reported their students felt less embarrassed and less tense while reading aloud in the presence of a dog. They felt as though they were reading aloud to someone who would not judge them if they made a mistake and were comfortable to explore their skill as a reader. Interacting with an animal generates physiological responses in our body. Cain & Cain (1991) state two characteristics of the optimal state of mind for meaningful learning: a relaxed nervous system and sense of safety and security and student self-motivation, which is critical to the expansion of knowledge. In Rud and Beck's 1996 study, teachers reported that animals in their classroom added to the overall psychological wellbeing of the students. They noted a decrease in classroom stress and an increase in class participation.

The enhanced program design studied in this project used horses specifically for the motivation of students to read. Little research on the use of horses in educational studies has been conducted but as therapeutic riding as an educational intervention becomes more widely accepted, more research will surface. One study of a Therapeutic Equestrian program found that horses used as educational tools can be classroom motivators and themes for academic activities in small appropriate groups. Results of their study included significant physical benefits, the emergence of communication from a withdrawn non-verbal student, and increased confidence levels in the students (Bieber, 1983). Even though this is not a realistic model for all schools, it is a clear example of using an animal as not only a motivator in the classroom but also a treatment modality for the physical issues associated with disabilities in special education classrooms.

Studying pets fosters a child's natural sense of curiosity about their environment (Blue, 1986). If one takes a broad view of classroom curriculum in any subject especially at younger grade levels, animals are often the subject or the theme. This seems to help make a connection with the children as well as provide a motivator for learning the subject matter. There is also a high frequency of animals used as the theme for computer based interactive lessons. Dewey (1938) discusses this phenomenon of curiosity related to learning. He surmised that if you can peak this curiosity by connecting children with nature than they will be more apt to learn and retain what they are taught.

Integration Phase

The third component of the Animal Assisted Learning model is Integration. The concept of integrating the subject matter employs two important factors: connecting the

material creating in a balanced or holistic approach, and building upon prior knowledge by constructing new knowledge. Research in education has come to one great understanding; there is no one right way to teach (Burns, Griffin, & Snow, eds 1999). Creating a model that pulls from multiple strategies sometimes referred to as balanced instruction, is more successful at engaging students (Pressley, et al, 1998). Many researchers have observed that student engagement can be greater and learning heightened when reading and writing are integrated with content-area instruction (e.g., Applebee, 1996; Barth & Mitchell, 1992). A study by Pressley, et al (1998) focusing on the nature of effective first grade literacy instruction, found the most consistent factor for effective classrooms was they all had a greater intent to connect reading and writing skills and content areas. By combining the attention capturing value of an animal with regular classroom instruction, the students will be more likely to be engaged in the learning process. An example would be to pair the subject matter of that animal such as a dog with reading content that included a dog as a character or information about the dog. The specie is not what is important but rather the connections made across the curriculum and that the children are engaged in the lessons.

Monzo & Rueda (2001) describe engagement with academic tasks as the observable manifestation of achievement motivation, identified by students' on-task behavior, lack of disruptions during lessons, or completion of activities. More recently, cognitive-oriented researchers argue that an engaged reader is one who is motivated, knowledgeable, strategic, and socially interactive (Gambrell, 1996; Guthrie & Wigfield, 2000). This requires that the learner be actively thinking about the reading task. This model takes on a constructivist perspective of engagement. From this approach, the

engagement is a process that the active learner uses to connect personal prior knowledge and previous experiences to new ideas in order to construct new knowledge and build upon what they already know (McCombs, 1996).

Motivation is not a static concept (Guthrie & Anderson, 1994). The purpose this phase is to continue the motivation created during the first interaction and carry the momentum while continuing to build upon it until the end. Guthrie and Knowles (2001) identify four aspects of motivation related to reading: intrinsic motivation, extrinsic motivation, interest and attitude. Specifically, intrinsic motivation refers to the students desire to be engaged in reading for its own sake rather than for a reward. Extrinsic motivation refers to the external rewards as goals for reading such as grades (Guthrie & Knowles, 2001). In general, students display both intrinsic and extrinsic motivations (Guthrie, & Anderson, 1994). Students who display traits for intrinsic motivation are more likely to achieve success in reading because of their curiosity in learning (Wigfield, Eccles & Rodriguez, 1998 and Wigfield & Guthrie, 1997). So this implies two important things: we must create a situation that fosters intrinsic motivation, and we must provide and atmosphere that fosters a positive attitude toward reading. This model reinforces these two concepts in each phase continuing to build motivation from one experience to the next through generating personal interest and personal connection through the live animal contact (Schiefele, 1992) and sparking curiosity (Dewey, 1938) which manifests itself motivation and a positive attitude which lead to success (Guthrie & Knowles, 2001).

Ross (1988) confirmed these results in a meta-analysis of literature. He describes the interaction as a "motivating context for text-based learning" (p. 411). He found that hands-on science activities aroused attention and promoted active learning (Guthrie & Wigfiled, 2000, p.411). Guthrie et al. (1998) found that reading instruction when embedded within hands-on science curriculum increased reading comprehension, strategy use, and problem solving in third and fifth graders and labeled it as intrinsically motivating. In 1992 Romance and Vitale studied an integrated curriculum that combined reading and hands-on activities in science. In a quasi-experimental comparison, students in the integrated curriculum scored higher on measures of reading achievement and science knowledge than did students pursuing a traditional form of instruction. Anderson (1998) attempted to explain this phenomenon. He reasoned that hands-on science activities would motivate students to read and, in turn, increase their conceptual learning from text. These findings demonstrated that students who read texts in association with hands-on activities had higher comprehension and increases in conceptual knowledge than did students who read the same texts without the intrinsically motivating context. In addition to Anderson's work, Guthrie et al conducted a yearlong intervention study and showed that reading engagement initially learned with intrinsically motivating activities in one knowledge domain could be transferred to a new knowledge domain (Guthrie, Anderson, Alao, & Rinehart, 1999).

It is the interest of the animal assisted learning model that children engage in reading because they want to, because of a hunger for imagination and curiosity sparked by their participation in the program. Most researchers and educators would agree that

motivation "is a very important, if not *the* most important factor in language learning" (Van Lier, 1998) without which even 'gifted' individuals cannot accomplish long-term goals, regardless of the curricula or instructor

Interaction Phase II

This model strives to create a positive pattern and attitude that will continue throughout the child's life whether it be for reading or the instilling of an empathetic attitude toward nature. The second interaction phase is to reinforce the motivation created in the beginning and to reinforce the connection to the curriculum. It helps to support intrinsic motivation in the child. The importance of real world interaction which was discussed earlier needs to continue long after the experience is over. There must be support inside and outside of school in order for this to occur (Guthrie & Wigfield, 2000). This means promotion of reading at home and social interaction in the form of discussions of the book in and out of class. In a section of a paper written by John Guthrie found in the Handbook of Reading Research (Kamil, et al, 2000), he details how real life situations used in the classroom can influence intrinsic motivation. The Interaction 1, Interaction 2 and Demonstration portion of the model are deeply rooted in this concept. It refers to learners' sensory and personal experiences.

> "The main role of real-world interaction is to evoke intrinsically motivated behaviors. Students are alert, attentive, and excited in the presence of a real world object such as a live reptile, ….. They enjoy looking, asking questions, and discussing what they see" (Guthrie, 2000, p. 403).

Guthrie (2000) connects the work of researchers related to hands on science learning to the positive effects of live animal interaction and the generation of life long interest. Providing a second chance for the students to interact with the animal serves to reinforce that motivation and to spark curiosity which empowers the learner to seek more information after the experience has ended. Combining the intrinsic motivation with support outside of the classroom ensures a greater likelihood for success.

Demonstration Phase

In order to bring the experience full circle, it is important to provide opportunity to students to demonstrate the knowledge they have gained (Downing, 2000). The purpose is not to highlight one child over another; it is a chance to recognize that everyone has achieved something. In psychology it might be called closure or termination (Yalom, 1995). Yalom (1995) says that it is more than just an end but an integral part of the process. Bringing a formal end to one stage helps to be more accepting of new experiences and increases their self confidence (Driscoll, 1994). The celebration and recognition of achievement can act as an external motivator but the terminating experience can be intrinsically motivating in that it inspires one to go forth and seek out new knowledge (Guthrie & Knowles, 2001).

Summary

Based on the findings of this thesis and a review or successful educational programs, it was determined that the conclusions could be merged into one theoretical model. This model can offer consistency in structure of interactions between humans and animals. The Animal Assisted Learning model uses structured interaction with an animal to motivate children by:

- Capturing attention by accessing prior knowledge- *Introduction*
- Creating a personal connection to the text- *Interaction*
- Integrating the subject of the text into all areas of classroom study to build upon prior knowledge- *Integration*
- Reinforcing new knowledge and personal connection- *Interaction*
- Demonstrating new knowledge and recognizing achievement- *Demonstration*

The very nature of the model is flexible and is designed to accommodate various situations so that it can be adapted with out compromising the outcome. Whether or not the animal is part of the internal or external motivator is of no consequence. Each child is motivated by something different and need varying combinations of internal and external motivation to achieve success. What is important is to be purposeful and complete in each stage of the model according to the needs of the individual student. The connection between humans and animals is constantly evolving and changing. As in nature, it is in constant motion. A model designed to structure this interaction has to follow the same path. The same could be said for education in general, everyone learns differently at

different times. What works one moment may not work the next. But we can try to slowly affect one child at a time to help learn and see that we are all connected and in motion. In the words of Leo Tolstoy: “One of the first conditions of happiness is that the link between man and nature not be broken”.

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APPENDIX A

HS 96/4
Revised 6/01

Purdue University
Committee On The Use of Human Research Subjects
REQUEST FOR RESEARCH EXEMPTION

Ref. # 01-302E
JUL 23 2001

1. Project Title: The Black Stallion Literacy Program™

2. Anticipated Funding Agency: Indiana Horse Council

3. Principal Investigator(s) *(Must be faculty member)*:

Name and Title	Department, Building, Phone, FAX, E-mail address
Colleen Brady, Assistant Professor	4-H Youth Development
	1161 AGAD 765-494-8441
	cbrady@four-h.purdue.edu 496-1152

4. Other Personnel *(Such as consultants or graduate students)*:

Name and Title	Department, Building, Phone, FAX, E-mail address
Nancy Scott, Extension Educator	Kris Machtmes, Extension Specialist
Marion County Extension Office	1161 AGAD, Purdue University

5. Specific procedures to be followed. Include a copy of questionnaires or consent forms, if applicable.
(Please note that the use of tape recordings is not exempt and must be approved by regular procedures.)

6. Will subject's data be gathered anonymously? YES ___ NO _x_

7. Type of subjects to be employed and recruitment procedures:

5th grade students attending schools where principals and teachers were interested in the program

I have read the Human Subjects *"Instructions"* and, **in particular, pages 4 and 5** concerning exempt research.

Colleen Brady — Principal Investigator Signature
7-19-2001 — Date

Institutional Approval by:
Rebecca D. Armstrong — Date: 7-25-01
Rebecca D. Armstrong, D.V.M., Ph.D.
Office of the Vice President for Research

Exempt X **Submit Regular Application** ___
JUL 24 2001
Howard N. Zelaznik, Ph.D., Chair — Date:
Richard D. Mattes, Ph.D., Assoc. Chair
Committee on the Use of Human Research Subjects

Submit to: Human Subjects Office, 1071 Hovde Hall, Room 307

APPENDIX B

Pre-test
2002 Black Stallion Literacy Program!

Student Name_____ Teacher Name_____

1. Do you like to read? (Circle your answer)

Yes No

2. Have you ever touched a real horse?

Yes No

3. Do you have books at home?

Yes No

4. Where do horses live?

Cage Stall House

5. What do you like to read about?

_____

_____

_____

6. What do horses eat?

_____

_____

_____

7. Where do books come from?

_____

_____

_____

APPENDIX C

Post-test
2002 Black Stallion Literacy Program!

Student Name_____ Teacher Name_____

1. Do you like to read? (Circle your answer)

Yes No

2. Have you ever touched a real horse?

Yes No

3. Do you have books at home?

Yes No

4. Where do horses live?

Cage Stall House

5. What was your favorite part of the story "Little Black, a Pony" ?

_____

_____

6. What do horses eat?

_____

_____

_____

7. Where do books come from?

_____

_____

_____

APPENDIX D

The Black Stallion Literacy Project!
Teacher Evaluation Form

School _____ Teacher_____
Grade _____ Number of Students _____
City _____ State_____

Please indicate the extent to which you agree or disagree with each of the following statements by circling the appropriate letter(s) below.

SA strongly agree
A generally agree
U undecided or not applicable
D generally disagree
SD strongly disagree

1. The Black Stallion Literacy Program! increased the students' motivation to read.
   SA A U D SD

   Comment:_____

2. Students' parents have commented that The Black Stallion Literacy Project! is a good way to motivate students to read.
   SA A U D SD

   Comment:_____

3. Check which comment best describes your class's experience with The Black Stallion Literacy Project! :

   ⬭ The project had no effect.

   ⬭ The class enjoyed the project, but it did not motivate them to read.

   ⬭ The class enjoyed the project, and it motivated them to read.

Please write a 1-2 page narrative summary of your comments about The Black Stallion Literacy Project! and attach it to this form. Thank you for participating in this program!

Evaluation developed by Krisanna Machtmes, Nancy Scott, and Colleen Brady
Purdue University Cooperative Extension Servi

The Black Stallion Literacy Program! Parent's name_____
IRB Approval Ref. # 01-302 E
Child's name_____

School attended_____

APPENDIX E

Parent Survey

All results are confidential!!

1. What school programs did your children talk about most?

2. Did your child(ren) talk to you about The Black Stallion Literacy Project! ?

_____Yes _____No

3.Did your child(ren) read the book "Little Black, A Pony" with or to you?

_____Yes _____No

4. During or after the completion of The Black Stallion Literacy Project! did your child(ren) express any additional interest in either going to a bookstore or library for other books?

_____Yes _____No

5. Did your child(ren) talk to you about the horse they got to meet during this Project?

_____Yes _____No

6. How often do you read books to or with your child(ren)?

___Never ___ Occasionally ____ Frequently ____Always

Additional comments about The Black Stallion Literacy Project! :

Evaluation developed by Krisanna Machtmes, Nancy Scott, and Colleen Brady
Purdue University Cooperative Extension Service

The Black Stallion Literacy Program!
IRB Approval Ref. # 01-302 E

APPENDIX F

LEAD-Teacher Interview Guide

Date:_____ Time:_____
Teacher:_____ School:_____

What were the teachers over all impressions of the program?

Did they feel like the program motivated their children to read?

Did their students read the book more than once?

Did their students choose to read during free time?

Did they feel the activities were easy to implement?

Did they implement all of the activities?

Did they create new activities?

Did they integrate horses into other areas?

Did the students take a more active interest in going to the library?

Did the teachers notice other changes in habits or behaviors after the program started?

Were there other effects the program had on the students?

Did the teachers hear of the students reading at home?

Other comments from parents?

Did the teachers teach lessons on horse knowledge?

Did the students participate in additional activities about horses?

Did the students come up with their own ideas?

Did they read other stories about horses?

Did the teacher feel that students gained horse knowledge?

Did it inspire lessons about other animals?

What things would they change about the program? Why?

What things would they keep the same?

Are there any anecdotal stories from their experience?

Additional Comments?

APPENDIX G

Observation Field Guide

Date:_____ Time:_____

What is the general mood of the classroom?

Anything different about today?

What are they working on at the beginning?

Are the students excited about working on Black Stallion books when the teacher introduces it?

Do the children answer questions?

Are they correct or guess answers?

Do the children ask questions?

What kind?

Do the children tell stories about their personal experiences with horses?

Do they complete the worksheets?

Are they getting correct answers?

Is there evidence of use of horses in other activities?

Is there evidence of teachers using the activities in curriculum?

General observation of the room:

General comments made by the children:

General comments by the teacher:

Other Notes:

APPENDIX H

Black Stallion Literacy Program™ Enrollment Packet

1. Student Information:

Last Name _____ First Name _____ Middle Initial _____

Address_____

City_____ State INDIANA_ Zip code_____

Home Phone: _____

Sex: Male Female Ethnic Code: African-American/ American Indian/ Hispanic/ Asian/ White

Birth Date: _____

Teacher Name_____ Grade _____

2. Parent/Guardian Information

Parent/Guardian

#1 _____

Parent Work Phone _____ Cell Phone_____ Pager _____

Address: (if different from student's) _____

_____

Parent/Guardian

#2_____

Parent Work Phone_____ Cell Phone_____Pager_____

Address (if different from student's) _____

_____

The Black Stallion Literacy Program™ is affiliated with the Indiana 4-H Program and Purdue University Cooperative Extension Service.

3. Media and Information Release

Because photographs will be taken during the program, a release must be signed by a parent/guardian.

Date_____

I do hereby grant permission to Purdue University, its agents, and others working under its authority, full an free you of video/photographs containing my image/likeness. I understand these images may be used for promotional, news, research, and /or educational purposes.

I hereby release, discharge, and hold harmless the University and its agents from any and all claims, demands, or causes of action that I may hereafter have by reason of anything contained in the photographs or video.

Consent of parent or legal guardian if individual is a minor.

I consent and agree, individually, and as a parent or legal guardian of the minor named, to the foregoing terms and provisions.

Signature_____ Relationship _____

4. Data Collection Consent

Because students and parents will be asked to complete evaluation forms on the program, consent must be given by a parent/guardian.

Signature _____

Student Signature_____

APPENDIX I

January 7,2002

Dear Parent/Gaurdian,

The Black Stallion Literacy Project! is coming to your school! Your child will be participating in a Literacy program through their first grade class. This program is a joint partnership with Agape Therapeutic Riding Center, Purdue University Cooperative Extension, and the Black Stallion Literacy Project! . It is designed to motivate students to read and introduce them to the world of horses.

Each first grade class will be visited by a miniature horse and given their very own book called, Little Black, a Pony by Walter Farley. Each child will have a chance to visit with the special guest and learn about horses. Over a six-week period of time, the students have a chance to read their book and participate in horse oriented in their class. The conclusion of the program is celebrated with a field trip to the Agape Therapeutic Riding Center where students will see the book come to life through a special presentation by the staff and their four legged friends. They will also receive a second book, Little Black Goes to the Circus. The program is not possible with out without a little help from you. You are encouraged to read the books with your child and talk to them about what they learn.

Over 45,000 children across the US have participated in this program and we want Indiana to be the best. You will need to complete a release form for your child to participate. This release also allows Purdue University to complete evaluations and documentation to ensure the quality of the program. This includes a pre-test and a post-test, which measures how much the students gained by participating as well as photo and video documentation. There will also be a parent evaluation for you to complete and return to Purdue. The documentation does not affect student's grades and is used to improve the program for all participants.

If you have any questions regarding this program please contact your child's teacher directly. Thank you for participating in the Black Stallion Literacy Project! . Everyone deserves the chance to love reading!

Sincerely,

H. Blair McKissock CTRS

"Imagination can help you reach into Heaven to grasp an idea, bring it down to earth and make it work." -Walter Farley

APPENDIX J

Black Stallion Literacy Program

Results from pilot test at ISP schools.

Teacher Evaluation Forms:

This data is based on only two returned forms. Both teachers indicated that their students loved the books and strongly agreed that the books served as a motivational factor for reading. The only feedback from parents was obtained when parents accompanied the students to see the horses. Both teachers were grateful that their students had the experience.

Parent/Guardian Survey:

This data is based on three returned forms. All of the parents stated that their children discussed The Black Stallion Literacy Project™ with them and talked with them about the horse they got to meet. Only 66% of the parents indicated that the children expressed additional interest in going to a library for additional books. One parent commented that this program gave her son a neat opportunity and that his 4th grade sister was jealous.

Student Pre and Post Forms:

An evaluation was developed to see if there was a change in what the student read or wanted to read. A total of 209 evaluation forms were returned but only 107 (51%) had matching pre and post tests. The analysis is based on 107 matching tests. The pre test was administered prior to reading the first book and the post test was taken 30 days after the students met the horse.

The analysis demonstrated an 11.5% increase in student desiring to read books about animals after the program was completed. This increase may be significant in the fact that students are now aware that books about animals are fun to read and thus might motivate them to read more.

Suggestions for future testing of this program:

A strong parental involvement element should be integrated into this program so that parents participate more. Perhaps a parent night could be held where children display artwork about the books they have read and each child could take turns reading a section of the books to the parent gathering. Comments from the parents could be gathered at this meeting and the teachers could stress the importance of reading in the development of children.

It is extremely difficult to measure motivation or interest of children at such a young age. Readability of the evaluation form can be and probably is a problem. Evaluation should be approach from several angles such as tracking the number of books checked out from the library having teachers develop reading portfolios of each student, having more parental involvement in the classroom and conducting interviews with the students after completing the program.

Tell me, and I will forget.

Show me, and I may remember.

Involve me, and I will understand.

- Confucius, 450 B.C