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Effects of Teaching Emotions to Students with High Functioning Autism Spectrum Disorders Through Picture Books

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ABSTRACT

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Individuals with autism spectrum disorders (ASD) struggle with identifying others' emotions, which impacts their ability to successfully interact in social situations. Because of the increasing number of children identified with ASD, effective techniques are needed to help children identify emotions in others. The use of technology is being researched as a way to help children with emotion identification. However, technology is not always available for teachers to use in classrooms, whereas picture books are much easier to access and have been successfully used to improve students' social skills. Picture books are naturally used in classroom, home, and therapy settings. This study investigated the effectiveness of using picture books as a teaching tool with students with ASD, helping them learn how to identify emotions. A multiple baseline across three male subjects between the ages of six and ten was employed. Each picture book focused on teaching one specific emotion: scared, sad, and furious. Following intervention, when shown novel photographs, two of the participants identified three target emotions. One participant successfully identified one target emotion and showed marked improvement in identifying the other two target emotions. Using picture books is an easy, inexpensive way to teach emotions and can be naturally included in a classroom. Parents and other professionals can use picture books in a home or therapy setting to help children with ASD learn emotions and improve their social understanding.

Keywords: autism, picture books, emotion recognition

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Introduction

Autism was first described by psychiatrist Leo Kanner (1943). Hans Asperger described a disorder similar to autism and originally called it "autistic psychopathy." This later came to be known as Asperger Syndrome (Hippler & Klicpera, 2003). Not very many people had heard of autism until the 1988 film *Rainman* popularized it. However, it is now widely known and many understand that people with autism struggle to engage with others and have difficulty with ordinary social interactions (Hill & Frith, 2003).

The definitions of *autism* and *Asperger Syndrome* changed throughout the years, but now they each have specific criteria from the American Psychiatric Association's Diagnostic and Statistical Manual (Text Revised) (DSM-IV-TR) as impairment in verbal and non-verbal communication (autism only), abnormalities of social interactions, and restrictive and repetitive patterns of behavior and repertoire of interests and activities. One specific criterion is listed as "marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures, to regulate social interaction" (American Psychiatric Association, 2000, p. 70-71).

Both autism and Asperger Syndrome are considered to be autism spectrum disorders (ASD), with similar symptoms related to social and behavioral difficulties. As ASD became better known, research increased in trying to understand the difficulties individuals with an ASD have in social situations. Baron-Cohen, Leslie, and Frith (1985) discovered that children with autism struggle with theory-of-mind tasks where they have to understand the perspective of others. This difficulty is compounded when trying to identify emotions, especially when the emotion is tied to individual beliefs, such as likes and dislikes. Individuals with an ASD have also been shown to have difficulty processing facial expressions. They pay more attention to the

mouths and bodies of people than they track the eye (Klin, Jones, Schultz, Volkmar, & Cohen, 2002). The lack of facial attention was noted to occur even by the age of one in children with an ASD (Dawson et al., 2002).

Technology has been a tool used to help individuals with ASD learn to identify emotions. One program, called "Mind Reading: The Interactive Guide to Emotions," shows pictures of real people demonstrating emotions (Lacava, Golan, Baron-Cohen, & Myles, 2007). Other researchers have used the computer to develop programs such as an emotion trainer which shows pictures of various emotions displayed by real people (Silver & Oaks, 2001) and a game where individuals have an avatar that represents them as they interact others in a virtual reality setting (Moore, Cheng, McGrath, & Powell, 2005). Another use of technology that is still being researched is a phone that interprets idioms and emotions for the user (Bishop, 2003). Despite some success with the use of computers, there is an issue of whether these emotion recognition skills will generalize to real situations. Additionally, teachers and other practitioners may not have access to technology when working on emotion recognition skills. Other more accessible and less expensive methods to teach emotion recognition should be explored.

Bibliotherapy is one method which may be useful for teaching emotions. Bibliotherapy has been used since 1840 to help individuals work through emotional difficulties and has recently become a popular method to use when working with children. Because classroom teachers use books throughout the day as part of their teaching and to help create a safe environment (Cartledge & Kiarie, 2001), classroom-based bibliotherapy has been recommended. According to Prater, Johnstun, Dyches, and Johnstun (2006), bibliotherapy is the "use of books to help people solve problems" (p. 6). They also state that it helps children to analyze their

thoughts and behaviors in relation to themselves and others. However, there were no studies found that used books as a therapeutic tool for working with children with an ASD.

Statement of the Problem

Although several authors and researchers discuss using literature in the classroom for teaching social skills such as friendship, problem solving, and dealing with anxiety, there was no research found that showed the effectiveness of bibliotherapy when teaching social. There was also no literature found that addressed using picture books to specifically teach emotions.

Furthermore, there were no studies found that used books as a tool for working with children with an ASD. Therefore, a gap in the literature exists regarding the use of bibliotherapy for students with an ASD to learn emotions. The lack of emotion recognition has a big impact on the ability of individuals with an ASD to socially interact with others at home and at school, so it is a crucial skill to acquire (Bauminger, 2002). Bibliotherapy has been used for a variety of issues in school and therapeutic settings, and if it can be used to help children with an ASD improve their social interactions by being able to identify emotions, it may be an easy tool for teachers to use because teachers all ready use books as a natural teaching tool throughout the school day for various subjects such as comprehension and critical thinking.

Statement of Purpose

Children with ASD have difficulty recognizing and understanding emotion. This leads to problems interacting with their peers, friends, and family. However, children with autism often have visual or spatial strengths. Therefore, it is proposed that bibliotherapy be used to teach children with ASD to recognize emotion. The purpose of this research is to investigate the effectiveness of bibliotherapy on emotion recognition in elementary students ages 6 – 10 with high functioning autism or Asperger Syndrome.

Research Questions

This research study is designed to answer the following questions:

1. Can students ages 6 – 10 with high-functioning autism or Asperger Syndrome learn to identify specific emotions as represented in picture books?
2. If students learn to identify specific emotions as represented in pictures books, can students ages 6 – 10 with high-functioning autism or Asperger Syndrome generalize identifying emotions as represented on emotion cards?
3. While using picture books to learn causation of emotions, can high-functioning students aged 6 – 10 with autism or Asperger Syndrome learn to identify the cause of an emotion displayed by a character on a scenario card?

Review of Literature

The History of Autism and Asperger Syndrome

The historical background of autism began in 1919 when Swiss psychiatrist Eugen Bleuler coined the phrase 'autism' to describe what he believed to be a form of schizophrenia (Lyons & Fitzgerald, 2007). He noted that some individuals had limited interactions with others and the environment around them. Bleuler also described "schizophrenic autistics" as displaying bizarre behaviors, being impulsive, having obsessions and often living within an imaginary world. Although some of Bleuler's characteristics of schizophrenic autism are similar to what is described as autism today, the definition of autism has greatly changed over time and is not classified with schizophrenia (Frith, 1991).

In 1943 Austrian-American psychologist Leo Kanner published a seminal paper describing 11 children with 'early infantile autism' (Frith, 1991; Lyons & Fitzgerald, 2007). He pointed out that these children had five main characteristics in common. First, there appeared to be aloofness when in contact with other people. Parents would describe their children as acting as if others were not there and happiest when alone. Second, these children seemed to have a preservation of sameness. The children would engage in repetitive activities and were resistant to changes in their routines. Third, these children had fascinations with objects. Some of the children would become obsessed over odd items such as dead holly leaves or tin lids. Kanner then observed that the children would sometimes use these items in for engaging in fine motor activities such as spinning, twisting, or lining them up in straight lines. Fourth, some of the children would appear to have mutism or use echolalia where the child would repeat back something he just heard or use bits of phrases to create a sentence. Some of the children who had a better comprehension of language displayed literal interpretation of what was said to them.

Finally, Kanner described the children's ability to perform some amazing feats such as having a remarkable memory for music or extreme accuracy when drawing, despite the fact the intelligence tests showed low scores (Kanner, 1943).

Because Kanner's work was published in English, many people were able to read his work about these children with abnormal behavior who had fascinating peculiarities. The availability of his work helped Leo Kanner to be considered as the "pioneer" of autism research. His cases became so well known that his work was compared to new cases that other doctors found (Frith, 1991).

As he continued his research, he published more papers in 1973 describing more of his work. However, these papers show that Kanner was struggling to apply his own diagnostic criteria to some of children he worked with. He described 34 children and gave them various diagnoses of early infantile autism, childhood schizophrenia, and "disorders with evidence of organicity" (Frith, 1991).

The same year when Kanner published his seminal paper, another Austrian named Hans Asperger submitted his thesis that described a disorder in four children which he called 'autistic psychopathy.' His thesis was then published 1944. However, Asperger's research was only known to the German people and did not gain notoriety until after Frith translated Asperger's work into English in 1991. Asperger did become aware of Kanner's work but Asperger felt that he was describing some very different symptoms than Kanner's "infantile autism" and acknowledged this in later research (Lyons & Fitzgerald, 2007). The children he was working with were able to talk, have some meaningful relationships, and had no communication delays. His conceptualization of this unique type of autism came to be known as Asperger Syndrome (Hippler & Klicpera, 2003).

Over the past several decades the definitions of autism and Asperger Syndrome have evolved. Before the publication of fourth edition of the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders (DSMV-IV) in 1994, there were various individuals who proposed diagnostic criteria for Asperger Syndrome. However, there were many variances in the diagnosis criteria with many overlapping of definitions with autism (Ozonoff, South, & Miller, 2000). Nevertheless, Asperger Disorder was included in the DSMV-IV as one of five pervasive developmental disorders, and a disorder separate from autism. There continues to be controversy regarding whether or not Asperger Syndrome is a subgroup of autism or if it is a separate diagnosis (Hill & Frith, 2003). According to the Diagnostic and Statistical Manual of Mental Disorders Text Revision (DSMV-IV-TR) (2000), autism is characterized by impaired social interactions, communication difficulties such as impairment in verbal and non-verbal communication, and a restricted repertoire of activities and interests (American Psychiatric Association, 2000). The clinical markers for Asperger Syndrome are described similar to autism, except there are no communication delays and no significant cognitive delay. Currently there are no criteria in the DSMV-IV that differentiate between high-functioning autism and Asperger Syndrome.

Because of the controversy surrounding the differentiation of high-functioning autism (HFA) and Asperger Syndrome (AS), researchers have tried to find the boundaries that separate the two diagnoses — if one exists. Beglinger and Smith (2001) reviewed work of various researchers who explored the idea of creating subtypes of autism based on various characteristics of social/communication, IQ, and developmental/adaptive functioning. The research reviewed differentiated between many individuals on the entire autism spectrum from those with profound intellectual disabilities to those with HFA and AS. However, the researchers found that there

was still some overlap between autism, HFA, and AS, and that defined boundaries still could not be set.

Ozonoff and colleagues (2000) investigated external variables in defining differences between HFA and AS diagnoses. The researchers used parent interviews, language tests such as the Clinical Evaluation of Language Fundamentals (CELF–III), and cognitive, intellectual and executive functions to compare to the DSMV-IV criteria to determine the diagnosis for each individual. The main differences they discovered between AS and HFA was that individuals with AS scored better on language tests and had better social skills while they were younger as compared to those with HFA. They found that those with HFA tended to function more poorly while they were younger, but when compared to those with AS during teen years, they were very similar. They also found that individuals with HFA spent more time in special education than those with AS. The researchers concluded that AS is on the same spectrum as HFA but with variance in degree of impairment. However, they suggest that more research should be continued in defining the difference between AS and HFA.

Ghaziuddin and Mountain (2004) investigated the intelligence difference between HFA and AS because some reports such as Klin (2000) indicated that individuals with AS have a distinct higher verbal IQ with a lower performance IQ while those with HFA have an opposite pattern. They compared 22 individuals who had a diagnosis of AS to 12 subjects with HFA. They matched the individuals based on age, sex and intelligence. Overall the researchers found that subjects with AS did show an overall significant verbal and performance IQ discrepancy which the HFA group overall did not have. However, this pattern was seen in a few of the HFA subjects. This indicates that comparing verbal and performance IQ may help distinguish between HFA and AS, but it is not a distinctively defining characteristic for an AS diagnosis.

More recently, Ghaziuddin (2008) explored the difference in social deficits between individuals with HFA and AS. He compared 58 subjects with AS to 39 with HFA. He classified these individuals' social interactions using a system developed by Wing and Gould in 1979, which is often used today. The system classifies social interactions into three categories: aloof, passive, and active but odd. Aloof participants were not interested others and took little or no part in the interview questions. Passive subjects would answer questions but would not ask questions or add to the conversation. Active but odd participants would initiate social interactions but showed inappropriateness in their questions or actions. Ghaziuddin discovered that most of the individuals with AS showed active but odd behaviors while those with HFA were often aloof or passive. He concluded that type of social differences may be an indicator for AS versus HFA but more research would be required.

Since the concept of autism came to light in 1919 by Bleuler and AS by Hans Asperger in 1944, much research has been conducted to delineate the difference between the two disorders. However, there has not been an agreement if AS is a subgroup of autism or a separate diagnosis. For the purpose of this research both children with HFA and AS will be used. When characteristics or specific diagnoses of AS and HFA are necessary, these terms will be used; however, when no distinction is clear, the general term of Autism Spectrum Disorder (ASD) will be used to encompass both autism and Asperger Syndrome.

Social and Emotional Dysfunction

Over the past few decades ASD has increased in prevalence. According to the Center for Disease Control and Prevention, one in 110 children has an ASD. This is an increase from before 1985 where only four to five in 10,000 were identified (Rice, 2009). As ASD has increased in prevalence, research has also increased in studying what causes ASD and its social

dysfunction. In a landmark study, Baron-Cohen et al. (1985) proposed that a child with autism struggles with theory of mind tasks. To test theory of mind, a child would be shown either a picture or doll named Sally and told a story about her. The child would be told that Sally puts her ball in a basket and then leaves the room. Another girl, Anne, then takes the ball and hides it in a box. The child would then be asked where Sally would look for the ball when Sally comes back into the room. A child with an understanding of theory of mind would be able to point to the basket because the child would take Sally's perspective and realize that she did not see the ball get moved. A child without a theory of mind would select the box because that is where the child last saw the ball. When this theory was tested on children with autism, 80% of them got the answer wrong. However, when children with Down Syndrome were tested, 86% of them answered the question correctly even though they had, on average, an IQ lower than the group of children with autism (Hill & Frith, 2003).

Along with having impairment in theory of mind tasks, individuals with ASD also struggle with identifying emotions in themselves and in others. Baron-Cohen conducted another study in 1991and found that people with autism show deficits in understanding emotions of others caused by individual beliefs. For example, the researchers would tell children with autism a story about a monkey who plays a trick on an elephant. The children are told that the elephant really loves to drink Coke and nothing else. The monkey dumps out the coke in the Coke can and replaces it with milk and hands it to the elephant. The children are asked to explain how the elephant feels when the monkey gives her the can and then how she feels after finding out it is milk. The children would have to not only understand that the elephant thought the can had Coke in it before opening it, but also understand how she would feel about having milk instead. He then predicted that the children's understanding of emotions such as surprise, embarrassment,

curiosity, or boredom, would be poor. However, no research was found to show if Baron-Cohen later researched this hypothesis.

In further testing of theory of mind understanding of belief systems, Heavey, Phillips, Baron-Cohen and Rutter (2000) developed a test called "The Awkward Moments Test″ in order to measure the social competence in individuals with an ASD. Individuals with an ASD were shown 45 – 120 second excerpts of eight films with characters in socially uncomfortable or unpleasant situations. After being shown the individual films the participants where then asked to answer questions in relation to the character's feelings. In order to answer the questions, the individual needed to process the character's belief system and understand the perspective of other characters in the film in regards to the main character's behavior as well as processing facial expressions. For example, the examiner may ask first "What was the character trying to do?" and then ask, "Was he trying to do more than this?" For two of the films the participants were asked to answer questions about the film maker's intent in the film and what he was trying to accomplish. As the participants were questioned their answers were scored with 2 being the most complete and a 0 being literal and physical based. When compared to the control group, the individuals with an ASD showed a big different in answers when they pertained to intentions. For example, a character in a film was trying to "show off." The researchers found that despite having several individuals with an ASD give very lengthy answers as to what the character was trying to do, they were not able to give this response for the character's intention. In conclusion, despite the fact that many of the individuals with an ASD that were tested had average to high IQs, they still struggled with identifying emotions and theory of mind tasks.

Emotion recognition. According to Bauminger (2002), emotion recognition is defined as an individual's "ability to distinguish the various affective expressions in facial, gestural, and

verbal displays, in one self and in others, and to understand their social-contextual meaning" (p. 284). Being able to identify emotions in others is a primary skill that children need to have to be successful in social situations (Halberstadt et al., 2001). For example, if an elementary aged girl wants to play with someone, she would have to decide who to approach. Should she walk over to the girl who is smiling at her or the one that frowned and turned her back? If approaching a group to play, how does she know when it is OK to join them if they never say, "Come play with us?" She would have to watch for the emotion responses of the individuals she approaches in order to determine if it is a social situation that she will be able to participate in successfully. According to Campos, Campos, and Barrett (1989), emotions are a significant source of information in social interactions to both the person who is interpreting the emotion and the one displaying the emotion. If a child is unable to decode the emotions of others, then there is a great chance that the child will struggle with forming friendships and act in odd ways during social encounters.

Facial processing is a critical skill for social competence and for development of theory of mind. Infants are attuned to faces (Carey, 1981; Ellis, 1990; Grossman, Klin, Carter, & Volkmar, 2000), and by the first six months of life are able to show some rapid facial processing, (Dawson, Webb, & McPartland, 2005). By mid-childhood years, children process facial emotions by paying attention to the eyes. Klin et al. (2002) conducted a study using eye tracking equipment with typically developed adults and those identified with ASD. Both groups were shown film clips where something dramatic happens such as an argument between a man and a woman. After the incident is shown, the screen is abruptly stopped when the characters in the movie are showing their reaction to the situation. The eye tracking equipment then marks crosshairs on the screen indicating where the eyes of each individual are focused. The

researchers found that a typical individual will focus on the eyes—which gives much of the information needed to understand the emotion being shown. However, they also discovered that even as adults, those with ASD tend to focus more on the mouth than the eyes, which gives very little information about what the person may be feeling. Similarly, in research by Gross (2004), children with ASD tend to focus more on the lower portion of the face (mouth) rather than the upper portion of the face where the eyes are.

In a separate research study by van der Geest et al. (2002) eye gaze was also studied. First participants were shown static photographs of human faces. They found that eye gaze of the group with an ASD was fairly similar when compared to the control group of typical developing individuals. However, once participants with autism were shown videos, there was a deviation from the typical face scanning gaze of the eyes to an increased focus of the mouth. This is interesting considering that infants as young as three months show a preference to looking at eyes (Klin et al., 2002).

If individuals with an ASD tend to look at the mouth region instead of the complex eye region, could this be part of the struggle to identify emotions? Baron-Cohen, Wheelwright, Hill, Raste, and Plumb (2001) developed the "Reading the Mind in the Eyes" test where adults are shown just the eye region and are given choices to select the emotion shown. Individuals with an ASD struggled with this task and were able to decipher only a few of the emotions shown in the eye region. The researchers mentioned the need to have experience in recognizing facial expressions from past experiences in order to be able to interpret the eye regions shown. Other researchers have also found that children and adults with an ASD also struggle to recognize emotions such as distress, fear, discomfort and sadness, which could be caused by the avoidance

of the eye region (Ashwin et al., 2007; Boraston & Blakemore, 2007; Dawson et al., 2004; Pelphrey et al., 2004; Sigman, 1992).

Other research has documented impairment of individuals with ASD in the recognition of faces. Critchley et al. (2000) proposed that this impairment was caused by changes in cerebral blood flow and Schultz, et al. (2000) researched abnormal ventral temporal cortical during face processing. Dawson et al. (2002) analyzed a variety of studies and found that even at the age of one, children who were later diagnosed with autism failed to attend to faces and scored lower than typically developing peers on identifying emotions when looking at other's faces. They also found that elementary school-age children with autism scored lower on face recognition tests than developmentally disabled children not diagnosed with ASD.

McConnell (2002) completed an empirical literature review of the effects that social impairment have on children with ASD and the effectiveness of various social skills training programs. He found that research shows that children with ASD spent less time interacting with others than their typical developing peers and the quality of their interactions was much lower. This was not always caused by a lack of attempts by the peers, but rather by the behaviors of the child with ASD. He also found research by Schleien et al. (1995) that showed that placing a child in a situation with more opportunities for interactions with typical peers such as an art class increased the amount of interactions initiated by peers, but it did not increase the frequency with which the child with an ASD imitated others or initiated social interactions. McConnell found that in order for a child to improve socially, effective social skills training is necessary, which he suggested should be a part of every educational program for children with ASD. Bauminger (2002) stated that research has shown that children with HFA or Asperger Syndrome primarily struggle with social initiation and social-emotional understanding rather than having a disinterest

in social interactions. Often these children may have feelings of loneliness and depression due to poor friendships caused by their lack of social-emotional understanding (Bauminger & Kasari, 2000; Hobson, 1993; Wing, 1992). Bauminger also found that for many years research has focused on only the peer interaction of social difficulties and found very little research that included increasing emotional understanding. If the research targeted emotional understanding, it tended to focus on simple emotions such as happy, sad or mad instead of the complex emotions such as embarrassed, jealous, surprise or loneliness.

Emotion identification training. Bauminger (2002) completed a 7 month study with 15 children with a high functioning ASD and focused on teaching emotion identification with peer social skills training. These lessons were taught in a school setting with the teacher and peers as models. The research shows that all of the participants after the study were able to identify four basic emotions and 53% were able to identify more complex emotions. The children were also more likely to initiate interactions and react more positively to peer interactions.

When investigating how to teach individuals with an ASD to identify emotions, very little research was found. Lacava et al. (2007) researched the effectiveness of a software program called "Mind Reading: The Interactive Guide to Emotions." This is a computer program that contains 400 different emotions displayed through photographs, video and audio clips. In addition, there are short videos showing a situation that ends with the emotion frozen for display. For 10-15 weeks the individuals were allowed to use the program in their home or school setting to complete daily lessons. The lessons consisted of various emotions shown in photographs, and short video and audio clips that demonstrate causational reasons for the emotion being displayed. The authors found that all the individuals tested increased in their ability to identify emotions.

Parents reported that their children began to ask "What does my face say?" and began to focus more on other's faces.

Silver and Oaks (2001) used a different computer-based program to teach prediction and recognition of emotions in others called the *Emotions Trainer*. This study was conducted in a school setting over a two-week time period with teenagers with an ASD. The program contained situations and photographs of people with four choices to choose from. The researchers found that the participants were able to improve their identification of emotions in story and cartoon situations, but not in their ability to recognize emotions in photographs of real situations.

Bishop (2003) investigated using a Portable Affect Recognition Learning Environment (PARLE) which allows a person with an ASD to learn emotions and idioms through an Internet program. This program translates common sayings into words and sayings someone with an ASD might be more likely to understand. For example, if someone said, "Cat got your tongue?" this would translate to "You appear quiet, how come?" Although this program is still being researched, Bishop found that individuals with an ASD found it helpful and enjoyed using the program.

Moore et al. (2005) researched virtual environments for teaching appropriate reactions in social situations and found some success. With the virtual environment the user would have an avatar, which is a computer version of a person that the user could control in a game style program. The avatar would then encounter social scenarios requiring analysis of facial expressions and body cues. This gave the user the opportunity to take time and study the situation before giving a response. Through the avatar the user can make mistakes but not suffer the real-world consequences. A study by Parsons et al. (2005) suggests that a computer virtual environment may not be suited for all individuals with an ASD because they do not generalize

the connection of the game environment to real life social situations. Also, their study suggests that although users enjoy using the game, they do not always interact with others within the game which then limits practicing social situations. Additional technological helps for people with an ASD are being developed such as an emotion detector prosthetic which is worn on the head which helps the individual recognize other's emotions while monitoring their own (Kaliouby, Teeters, & Picard, 2006). Although many studies involve the use of technology to teach emotion recognition, the question remains: Are there are effective approaches to teaching children with an autism spectrum disorder that teachers and parents can easily use which does not require technology?

Bibliotherapy

The people of ancient Greece showed that they valued books by inscribing a sign over their library stating that it is “The Healing Place for the Soul” (Sullivan & Strang, 2003). In Alexandria, Egypt similar words are found over their libraries to describe books: “Medicine for the Mind” (Heath et al., 2005). Since then the use of books has become an important intervention used by many clinicians to help individuals with specific problems. Literature has also become increasingly important for the classroom teacher as a tool for instruction.

Bibliotherapy’s first documented use was in 1840 to help adult medical patients deal with the emotional difficulties of their problems. In 1916 Samuel Crothers first coined the term 'bibliotherapy' when he discussed in *Atlantic Monthly* his technique of using books to help patients identify and deal with their problems (Myracle, 1995). During the late 19th century bibliotherapy expanded to many more uses including helping children (Sullivan & Strang, 2003). Bibliotherapy has been used for many children who struggle with a variety of issues. According to Prater et al. (2006), bibliotherapy is the "use of books to help people solve problems" (p. 6).

They also state that it helps children to analyze their thoughts and behaviors in relation to themselves and others. Some problems that have been addressed through bibliotherapy are teasing (Duimstra, 2003), problem solving (Forgan, 2002), anxiety (Kupshik & Fisher, 1999), and the social and emotional development of gifted students (Schlichter & Burke, 1994). Sullivan and Strang (2003) recommend bibliotherapy to help promote emotional intelligence such as empathy, optimism, the ability to handle relationships and to be able to read another's innermost feelings.

Bibliotherapy research has had mixed results. Marrs (1995) conducted a meta-analysis of 70 different research papers in order to ascertain if bibliotherapy was a successful therapy. Marrs found that bibliotherapy was effective for certain types of problems such as assertion training, sexual dysfunction, and anxiety. For other issues such as weight loss, impulse control and studying problems it was helpful, but perhaps not as effective as other treatments. Kupshik and Fisher (1999) studied 80 subjects who suffered with moderate anxiety problems and found that bibliotherapy was generally effective. If the therapy was not effective, the subject was just given the written material. They found that when there was interaction from a project worker that it greatly boosted the effectiveness of the bibliotherapy to 72%. They also found that this approach took less time than personal counseling. Heath et al. (2005) state that studies have shown that when appropriate bibliotherapy techniques are applied, improvements have been found in classroom behavior, interpersonal relationships, and the ability to recognize problem situations. However, if bibliotherapy is the only therapy used it may not be as effective for certain issues or problems.

The research literature regarding bibliotherapy will be improved when researchers investigate specific issues with careful attention to the research design, including tracking data

and noting improvements in the individual (Heath et al., 2005). Further, researchers should be consistent with their definitions of bibliotherapy (Prater et al., 2006).

Using bibliotherapy has recently become popular for helping children learn social skills within the classroom. For example, Cartledge and Kiarie (2001) explain how to use literature to teach social skills throughout the school day. They discuss the attractiveness of using a book and outline steps to help use the book to maintain the skill being taught. The first step they stress is to target a specific social skill and to make sure that the book is very clear in demonstrating that social skill. For example, *The Rainbow Fish* (Pfister, 1992) demonstrates many positive interactions, but it would be best to focus solely on the skill of sharing since the fish learns to share his fins with others. Next the authors suggest avoiding books that display violence or physical action to attain the goal. Additionally, the story should be simple enough for the child to learn the social skill and understand the main idea. The story should also be brief. Especially for younger children, books should be selected that have only a few a few sentences per page (three to four). Finally, the authors suggest that bibliotherapists consider gender issues and find stories that present males and females in nonstereotypical, empowered ways.

Morris, Taylor, and Wilson (2000) discuss how using picture books can be an easy way for teachers to create a positive atmosphere within the classroom. Because books are something that teachers naturally use in the classroom, they can use them to discuss topics such as bullying, violence and friendship skills. Children can then talk in a safe environment about behaviors that are appropriate. For example, a kindergarten teacher used the book *Amazing Grace* (Hoffman, 1991) to discuss friendships and what they mean. The children were able to connect the idea that people are people regardless of their color of skin or how they look. This helps foster in the children that they should be kind to each other within the classroom, creating a positive

atmosphere. Another example the authors give of using picture books is teaching kindness skills through the use of picture books that show various emotions. For example, *Julius, the Baby of the World* (Henkes, 1995) is about a little girl mouse named Lilly who is jealous of her baby brother. As the teacher reads, she can discuss how some of the kids may be jealous of a baby sibling in their household. Follow-through can then happen throughout the week as children interact with each other or take care of a class pet.

Maich and Kean (2004) discussed how teachers now have a therapeutic role within the classroom. Classrooms are becoming more diverse with more opportunities for inclusion. As inclusion increases, teachers are finding themselves needing to facilitate appropriate social interactions among students. One easy way to address this is through the use of bibliotherapy. The authors suggest four steps in using books for social skills training. First, make sure the story is relevant, easy to understand and that there is background knowledge for the students. Next, read the story. After reading the story the teacher then leads a discussion about the plot and specific emotions displayed within the story. Finally, use a follow-up strategy to reinforce the emotional and social issues of the story rather than the story plot. For example, the students may draw a thermometer to describe their feelings, create a bulletin board about feelings, or identify specific problem solving steps. These lessons can fit naturally into a school setting and can be done one-to-one, small group, large group, or even in a library setting.

Forgan (2002) discusses how to use literature appropriately with children who have disabilities. They can identify problems such as anger, bullying, and teasing in a picture book and then use solutions gained from reading the book to use in their own lives when they find themselves in a similar situation. He also suggests that using picture stories in a direct

instruction format with reinforcement activities greatly increases the chances of children with high-incidence disabilities becoming successful in problem solving situations.

Method

Setting

This study took place in an elementary school (grades K-6). There are 1048 students in this school, 89% of whom are Caucasian, 8% Hispanic, 1 % Asian, 1% American Indian and 1% African American. Twenty-six percent of students qualify for free or reduced lunch. This school has 35 classrooms, including three self-contained special education classrooms that support children with autism. Within these three classrooms there are 32 students with an autism spectrum disorder (ASD). However, this is the neighborhood school for only three of the students with ASD. The rest of the students are bused in from neighboring areas in the school district. The students have functioning levels ranging from severe disabilities with no verbal communication to high functioning students who are able to spend part of their day in general education classrooms.

This study took place in a one-on-one setting within the first through third grade small group autism classroom. This classroom serves 13 Caucasian students, 12males and one female. All students are identified with high-functioning autism or Asperger Syndrome. Two students spend their entire day in a general education classroom with an occasional pull-out for one-on-one instructional time, three spend half-day in general education classrooms with support, and the rest attend specialty times such as music, computers and P. E. with general education peers. Training and assessment occurred during each child's normal one-on-one rotations each day, which is when the teacher or paraeducator works with just one child to give individual attention for social skills, math, writing or reading.

Participants

Four students for the study were selected but only three were able to participate. Participants were selected from the classroom based on the following criterion:

1. Chronological age between six and ten years.
2. Have a Full Scale IQ score of 70 or higher based on an IQ score of 70 or higher as determined by an intelligence test such as the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983), Wechsler Intelligence Scale for Children-3rd Edition (WISC-III; Wechsler, 1991), the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R; Wechsler, 1989), or the Woodcock-Johnson Tests of Cognitive Ability-Revised (WJ-R; Woodcock & Johnson, 1989).
3. Have a verbal IQ score of 70 or higher based on the tests previously mentioned.
4. Have an Individual Education Program (IEP) classification of autism. This also includes children who have a medical diagnosis of Asperger Syndrome but are being served under the classification of autism for an IEP.
5. Be able to identify four or fewer emotions with 100% accuracy over four trials when shown emotion picture cards of real faces (e.g., happy, mad, sad and surprised).

To test for emotion recognition each participant was tested with the picture emotion cards from www.autisminspiration.com. Thirteen emotions (happy, sad, mad, surprised, confused, mischievous, furious, excited, worried, disappointed, bored, nervous and scared) were tested and each emotion had four examples. Testing on these emotions is part of the students' educational programming and had been done for all students in the class before initiation of the research

intervention. These data provided baseline data in order to determine which emotions needed to be taught. Those students who participated received the research intervention; the other students were taught the emotions by the speech therapist. Once participants were selected, parents were asked to fill out a questionnaire and identify which emotions their child knows and which ones they appear to struggle with in order to determine the social validity of learning to identify emotions. They were also asked to explain their perceptions of their child's emotional expression and how this social aspect impacts their child in the home environment. To protect the identity of the students, names have been changed. See Table 1 for a description of the participants.

Jake is a seven-year-old male in the first grade. He has a medical diagnosis of autism. According to Wechsler Intelligence Scale for Children-3rd Edition (WISC-III; Wechsler, 1991) his overall IQ is 95 while his verbal IQ is 73. He previously attended a small group kindergarten autism class. He attends approximately one hour a day in his general education classroom but requires an aide to assist him with engaging in appropriate behaviors and interacting with his peers. He will attempt to interact with peers but tends to grab things and become physical. He is currently on grade level in all academic subjects. His parents did not complete a parent questionnaire. When tested for emotion recognition, he was only able to name mad and bored with 100% accuracy. He identified happy and scared 50% of the time and identified sad and excited with 25% accuracy. He was unable to identify the remaining seven emotions.

Andrew is an eight-year-old male in the second grade. He has a medical diagnosis of autism. According to the Wechsler Intelligence Scale for Children-3rd Edition (WISC-III; Wechsler, 1991) he has an overall Full Scale IQ of 113 and a Verbal IQ score of 107. Andrew attended a typical general education kindergarten classroom and then was later moved to a small

group autism class. He then attended first grade in a small group autism class. He is currently at or above grade level academically but requires assistance to attend a general education classroom. He does not seek out interactions from other peers but tries to interact with adults. When frustrated he throws himself to the floor and cries. His mother completed a parent questionnaire which indicated that he can identify five emotions, but only the ones that are extreme. She reports that his lack of emotion recognition makes interactions difficult with his younger brother. When tested for emotion recognition, Andrew was able to identify happy and mad with 100% accuracy. He identified scared with 50% accuracy while he identified sad, worried, bored and scared with 25% accuracy.

Kevin is a seven-year old male in the first grade. He has a medical diagnosis of Asperger Syndrome and an educational classification of autism. According to the Wechsler Intelligence Scale for Children-3rd Edition (WISC-III; Wechsler, 1991) he has an overall Full Scale IQ of 73 and a Verbal IQ score of 72. Kevin spends his entire day in a mainstream classroom with only a few hours a week pulled out to work on social skills. The previous year he was in a self-contained classroom for children with special needs and had no mainstream opportunities. Because of this, his parents held him back a year. His parents also felt that he was very young and would still fit in with the first grade peers. Kevin seeks out attention from others in the class and likes trying to be funny. He does initiate interactions with his classmates. His mother completed a parent questionnaire. She reports that when Kevin is in a situation where he does not win or if others try to be funny to him he has a tendency to cry and have his feelings hurt. She feels that he only knows happy and mad and doesn't understand other emotions which impacts his interactions with his brother and sister at home. When tested, Kevin identified happy

and mad with 100% accuracy. He identified sad and scared with 25% accuracy. However, due to illness Kevin was withdrawn from the research.

Brian is an eight-year-old male in the second grade. He has a school diagnosis of autism. According to the Wechsler Intelligence Scale for Children-3rd Edition (WISC-III; Wechsler, 1991) he has an overall IQ of 73 and a verbal score of 74. He attended a small group classroom for children with autism during his kindergarten and first grade years. He spends an hour a day in his mainstream classroom for math. He is below grade level on the rest of his academics. He tries to interact with his peers but is not always appropriate in interactions. He cries easily and will cry and hide if anyone appears to be mad or sad. Both of his parents filled out the questionnaire. They stated that he is able to identify the following emotions: happy, surprised, excited, sad, hurt, mad, proud and scared. However, when he was tested he was only able to identify happy and mad with 100% accuracy and could identify surprised with 25% accuracy and scared at 50% accuracy. One possible explanation for this discrepancy is that parents reported that he makes comments on their emotions and so they feel he knows the emotion. For example, the mother stated that "when I show the emotion of happy or excited, my child will ask why I am so happy. When I am sad he will ask what happened." The only emotion that he is identifying by name according to the parent's narrative is happy. He may possibly be responding to a change from a happy emotion to a new emotion that he doesn't understand.

By comparing the deficits in emotion recognition of the remaining three students, the emotions chosen to work on were surprised, scared and furious. Even though some of the participants were sometimes able to identify sad or scared, these were emotions that parents indicated the participants struggled to understand consistently at home. Also, when the participants were shown these emotion pictures, they typically would describe the emotion as

"mad." Therefore, it was decided that it would be best to determine if these emotions could be identified with 100% accuracy.

Table 1

Characteristics of Participants

Participant	Gender	Age	Ethnicity	Classification	Overall IQ	Verbal IQ	Emotions Known
Jake	Male	7	Caucasian	Autism	95	73	mad, bored
Brian	Male	8	Caucasian	Autism	73	74	mad, happy
Andrew	Male	8	Caucasian	Autism	113	107	mad, happy
Kevin	Male	7	Caucasian	Asperger Syndrome	73	72	mad, happy

Materials

Emotion cards for baseline data. One set of emotion cards from www.autisminspiration.com was used to test initial emotion identification. This set is a collection of 52 color photographs of men, women, and children displaying thirteen different emotions with examples of each emotion. The cards show a photograph of a face against a white background. They are 3 ¾ x 3 ¼ in size and show one man, woman or child from the shoulders to the top of the head. These are pictures that the participants have not seen before collection of baseline data. These photographs were also used during baseline data and when testing emotion identification during training sessions. Before testing began, the name of the emotion was written on the back of each card to support the assessment efforts.

Scenario cards for instruction. Selected scenario cards from No-Glamour Story Problem Solving Cards from LinguiSystems were used to test emotion causation within the training session. The cards are color drawings that depict a character showing an emotion related

to an incident causing the emotion. For example, a card could show a boy who is surprised because his science project homework was just torn and dropped on the ground. The researcher and research assistants looked at each of the cards to determine the emotion and cause of emotion in each card to be used. Many of the cards already had an emotion listed or reasons listed on the back. Three cards were selected for each emotion (see Appendix A for list of cards used).

Novel photograph emotion cards for generalization. In order to test for generalization, color pictures were taken of individuals displaying the three targeted emotions of this study (see Appendix B). The participants were not familiar with the individuals in the photographs. For each emotion, one child and one adult were asked to pose with a white background and a photograph was taken from the shoulders up. This created two novel photographs per emotion. Then one emotion card was selected from the previously used emotion card set from www.autisminspiration.com per emotion. Then the cards were added to the novel photographed emotion cards to create a new set. This set was shown after the participants mastered all three emotions.

Novel story cards for generalization. Three color photograph novel story cards were created for each emotion (see Appendix B). The people in the novel story cards were also unknown to the participants. For sad a picture was taken of a boy whose balloon had popped. For scared a picture was taken of one boy who is going to throw a ball at another boy. For furious a boy and a girl are fighting over a TV remote.

Picture books for instruction. Various picture books that have characters showing the specific emotions being taught were also used. These books were selected by the researcher and research assistants according to an evaluation instrument (see Appendix C) of (a) the main

character is a person rather than an animal, (b) the character's face shows all primary components of a face including eyes, eyebrows, nose, and mouth, (c) the story is focused around a central character, and (d) there were two or more examples of the target emotion in the book. Three books per emotion were chosen except for the emotion furious. For scared the books chosen were *The Spooky Book* (Patschke, 1999), *Read All About It* (Bush & Bush, 2008) and *Horace P. Tuttle, Magician Extraordinaire!* (Schneider, 2001). For sad the books chosen were *Princess Peepers* (Calvert, 2008), *Purplicious* (Kann & Kann, 2006) and *I Remember Papa* (Shed, 2001). Only two books were found that met criteria on the evaluation instrument. *The Recess Queen* (O'neill, 2002) was selected to be used twice because it had one more example of furious than *The Worst Best Friend* (O'neill 2008). *The Worst Best Friend* was used twice for multiple sessions when more than three sessions of emotion training was needed since these were the only two books found for teaching the emotion furious. One participant was read both books three times for a total of six sessions because he was not mastering the emotion. After each book was selected, the researcher and assistants chose which pages to use for teaching the target emotion and pre-determined what the emotional cause was. The entire book was read to the participant and the researcher would stop on these predetermined pages to teach the emotion. A list of emotion traits for each emotion was then created (see Appendix D) and kept with the emotional cause for each book (see Appendix C).

For each emotion taught, the following list of emotion traits was used. The idea for breaking down emotions into traits was obtained from Jeanette McAfee *Navigating the Social World* (2002). She discusses teaching emotions by taking photographs of the individual and drawing lines to each part of the face and body in order to describe the emotion the individual

displayed. The researcher and the assistants discussed the emotions to be taught and all agreed upon the following traits for each emotion.

Sad – mouth down in a frown, head tilted down, eyes may be looking down or crying, eyebrows relaxed.

Scared – Big open eyes, hands close to body and may be in the air, eyebrows raised high, mouth open wide, forehead wrinkled slightly, may run.

Furious – Eyebrows down, forehead wrinkled, mouth with teeth showing or yelling, eyes looking at person, hands in a fist or pointing.

Variables

Dependent variables. The first dependent variable is designed to answer the first research question, "Can students ages 6-10 with high-functioning autism or Asperger Syndrome learn to identify specific emotions as represented in picture books?" This dependent variable is the child's verbal identification of target emotions and their accompanying traits when taught using a picture book and was measured as a frequency count and converted to a percentage of accuracy.

The second dependent variable answered the research question, "If students learn to identify specific emotions as represented in pictures books, can students ages 6-10 with high-functioning autism or Asperger Syndrome generalize identifying emotions as represented on emotion cards?" This dependent variable was the child's success in identifying what caused a target emotion on an emotion card and was measured as a frequency count and converted to a percentage of accuracy.

The third dependent variable answered the research question, "While using picture books to learn causation of emotions, can high-functioning students aged 6-10 with autism or Asperger

Syndrome learn to identify the cause of an emotion displayed by a character on a scenario card?" This dependent variable was the child's success in identifying emotions on a scenario card and was measured as a frequency count and converted to a percentage of accuracy.

Independent variable. The independent variable for this study is the systematic use of carefully-selected picture books during a one-on-one teaching session with students with an ASD.

Procedures

Consent. The researcher phoned the parents or guardians of each participant and explained the research. Consent forms (see Appendix E) were then sent home along with a parent questionnaire (see Appendix F) prior to the child's involvement in the study. All parents were very excited to have their child participate and all parents returned the consent form. All but one parent returned the parent questionnaire.

Initial screening. Initial screening data were collected before the research began for all students who were in the class, as part of the typical daily instructional activities. This included data the teacher and speech therapist had collected to determine which emotions to teach. Each child was shown four pictures each of thirteen emotions. Students who knew only four or fewer emotions and met the rest of the criteria with their age, IQ, verbal scores and IEP classification were selected to participate. Students who did not meet this qualification were not invited to participate. Following this screening, students who were not part of the research received all of their training on emotions in the speech therapist's room using traditional instructional methods, while those who were selected to participate received training and testing by the teacher and paraeducators using picture books.

Baseline data. Once research began, baseline data were collected in a one-on-one setting until the participant was given the intervention. Baseline data collection comprised of using the emotion cards from www.autisminspiration.com. Each child was tested on four examples of the target emotion interspersed with four examples each of two emotions had previously mastered with 100% accuracy prior to the beginning of the study. Data were collected in this format until each participant began the intervention phase. No instruction on emotions was given during the baseline.

Intervention. The intervention stage of this study comprised of three phases. The first phase was the teaching of the emotion using picture books. The second phase was the testing of the emotion using emotion and scenario cards. These two phases comprised one training session. The final phase comprised of testing for generalization using novel photographs. Once a participant was able to master the three target emotions, he was then tested with novel photograph emotion and novel story cards as a final phase. Each phase is described below in Table 2. Refer to the following chart for clarification. (See Appendix G for same chart with data procedures included).

Table 2

Instructional and Testing Procedures

What the teacher does:	What the student does:
1. Read xxx book, stopping at page xx. Break down the emotion traits by pointing to various facial characteristics. Say, "xxx is feeling xxx." "How does he feel?" "How do you know his face is (emotion)?"	Verbally states the emotion within 10 seconds without prompt. States the different traits of the emotion.
2. Using the character on the same page of the book, explain to the child why the character is feeling that emotion. Say, "He is feeling xxx because xxx." Then ask, "Why does he feel (emotion)?"	Verbally states the cause of the emotion within 10 seconds without prompt.
3. Read xxx book, stopping at a new page showing the same emotion xx and ask, “How does he feel?”	Verbally states the emotion within 10 seconds with no prompts.
4. Show the emotion card (xxx) that corresponds to the emotion in the book and asks, “How does he feel?”	Verbally states the emotion within 10 seconds with no prompts.
5. Show a scenario card of a character expressing an emotion xxx and asks “How does he feel?” "Why does he feel (emotion)?"	Verbally states the emotion within 10 seconds with no prompts. Verbally states the cause of the emotion within 10 seconds with no prompts.

Teach. Each instructional session comprised of a training phase and then was followed with a testing phase. The participant was invited by the researcher to come listen to a story. The researcher read the story and then paused on a selected page where a character was demonstrating the target emotion. The researcher then taught the emotion by pointing out the various emotion traits. Then the researcher would say, "xxx is feeling (emotion). How does xxx feel?" The participant was expected to state the emotion correctly within 10 seconds. Once the emotion was stated correctly, the researcher would ask, "How do you know?" and the participant would be expected to state at least three emotion traits within ten seconds. If the participant was not able to answer correctly or gave no answer, then the researcher reviewed the emotion and traits again. As the research progressed, it was found that the participants would get confused and try to state the causation of the emotion. The question was changed to "How do you know his face is (emotion)?" and this seemed to fix the confusion. Once the participant was able to state the emotion and its traits, then the researcher would explain to the child why the character is feeling that particular emotion and then ask, "Why does xxx feel (emotion)?" If the participant verbally stated the cause of the emotion within ten seconds, then the researcher would continue on with the story. If not, then the researcher would review the causation again and if needed, draw attention to where the character's eyes were looking as a clue for causation. Sometimes the text would then be read again and reviewed with the child to find the clues for the causation of the emotion. This would continue throughout the rest of the book. During the second and third sessions (or more if the participant needed more sessions to master the emotion) of the same target emotion, the researcher would give the child a chance to state the emotion, traits and causation when coming to the first example of the emotion in the book. This was done to see what the participant remembered from the previous session. The researcher then would review

the emotion, traits and causation with the child as an error correction procedure as needed and would continue with the rest of the book.

Test. After the researcher had finished reading and using the story to teach the target emotion, each child was then tested by the research assistants using emotion cards to check for emotion recognition. A set of 12 emotion cards were prepared ahead of time for each child – 4 cards of one previously mastered emotion, 4 cards of another previously mastered emotion, and 4 cards from the www.autisminspiration.com emotion card set of the new target emotion (total of 12 cards). For example, one child may have been tested with 4 examples of happy, 4 examples of mad, and 4 examples of scared.

Since Andrew and Brian knew happy and mad, the emotion card set contained four cards showing examples of happy and four cards showing examples of mad. Four cards for the target emotion were then included into the set. Jake did not know happy but did know bored so his set comprised of happy, bored and then the target emotion. The cards were then mixed up and the assistant would ask, "How does xxx feel?" The participant was expected to answer within ten seconds and was given no prompts. Even if the participant gave a wrong answer or no response, the assistant would not correct or state the correct answer. After all emotion cards were shown, the assistant would then show a scenario card and ask, "How does xxx feel? Why does he feel (emotion)?" The research assistant would write down the child's response and compare it to the predetermined answer. The participant was expected to state the correct emotion and give a correct causation within ten seconds. As before, if the child gave no answer or an incorrect answer, it was recorded but not corrected since this was the test to see if the teaching using a picture book was successful. The only time correction happened was during the reading of the picture books which was part of the teaching phase.

For each training session a new picture book was used if possible as well as a new scenario card. One child needed more than three sessions to master the emotion frustrated. In this case the same books and scenario cards were reused as needed, even if the child had mastered the scenario cards and not the emotion cards with 100% accuracy. This was done in order to maintain a routine for the child so that he knew what to expect during each session. An emotion was considered mastered when a child was able to identify the target emotion with 100% accuracy when shown the emotion cards.

Final test. Once each participant mastered all three target emotions, the child was shown a set of novel photo emotion cards that contained all three of the new target emotions. Only three examples of each emotion were shown. Two examples from each emotion were novel photos of individuals with whom the participants were not familiar. One card for each emotion was selected out from the emotion card set that had been previously used for testing. This created a set of nine photo cards. Each participant was tested to see if emotion recognition for the target emotion generalized to faces not tested before. After being tested with the novel photo emotion cards, the participant was shown the novel photographed story cards and asked to identify the emotion and the causation. As with the previous data collected for the emotion cards, no prompts were allowed during this testing session of novel photograph emotion cards.

Experimental Design

A multiple baseline design was chosen for this study in order to show the effectiveness of the treatment by staggering when the treatment begins for each child. Withholding emotion identification training was not detrimental to any of the children. In addition, once emotion identification has been learned, it cannot be taken away to show reversal. Because of these considerations, a multiple baseline design is an appropriate option.

A multiple baseline across subjects was used for each emotion taught. Frequency data were points were converted to percentage of correct answers when shown emotion cards. Percentage was calculated by dividing the correct responses by the number of opportunities for responses, which was four. Data were plotted daily in an effort to show a direct correspondence to using a picture book for training and the ability to identify the target emotion. Jake had three sessions of baseline data before he started intervention. Andrew began three sessions after Jake and then Brian began three sessions after Andrew began his intervention.

Data collected for percentage of correct answers when identifying the emotion, traits and causation of emotions were put in a table format. Data collected for correct emotion and causation responses for scenario cards were also put in a table format.

Data collection procedures. To guide each instructional and testing session, a plan was given to the researcher and the assistants that detailed the words to say (see Appendix G) and how the data were to be marked on the data sheets (see Appendix H). Only the researcher completed the teaching phase of the intervention while the assistants administered baseline testing and testing of emotions after the participant were taught the target emotion. When the child was able to identify the correct emotion, state three or more emotion traits or causation of an emotion within ten seconds a + was recorded. If the child stated an incorrect response then a – was marked. This also included partially correct answers such as only stating two traits of the target emotion. If the participant was unable to state the emotion, trait or causation within ten seconds, then a 0 was recorded. This was the case even if the child gave a correct answer after ten seconds. These data were collected and put into a table format.

Data collected during the picture book training phase (i.e., identification of the emotion, stating the traits, and stating causation) were put into table format. Baseline data, intervention

data gathered from the emotion cards and data from novel photograph emotion cards were put into a multiple baseline graph with data points indicating the percentage of correct answers.

Observer training. The researcher and the assistants acted as observers when teaching and testing the individual children. Observers were given a list of the emotion traits for the targeted emotions. They were also given guidelines of what to say and how to record data. During several training sessions they practiced role play situations and followed the guidelines while testing each other with the emotion and scenario cards. The researcher and assistants also practiced showing the cards and then laying them down so that the name of the emotion that was written on the back of the card was never shown to the participant. The researcher also stressed the importance of giving no prompts to the participants. Practicing role-play situations continued until there were no errors during practice sessions and observers obtained 100% accuracy in recording data.

Interobserver agreement. Inter-observer agreement was collected by having a second observer videotape 30% of the picture book training and the emotion/scenario cards data collection sessions. Data were collected during intervention phases, not during baseline. The tapes were then watched by the researcher and assistants and data collected were compared to what each other scored. Over the course of various session recordings there were 117 opportunities for responses by the participants. There were only two cases of disagreements and 115 agreements (98% interobserver agreement). One disagreement was over a response that a child gave for a scenario card. Another disagreement was the length of time of one of the responses given for stating the traits of an emotion. This was reached by calculating the number of agreements divided by the number of potential coding opportunities multiplied by 100.

Treatment Fidelity

When selecting picture books for training, the researcher and assistants selected possible books and compared them to an evaluation instrument for selecting picture books (see Appendix C) and decided if the book fit the requirements. If the book fit the requirements, then selected pages showing specific emotions were determined for use when training. For each page selected, causation for the emotion was agreed upon by the researcher and assistants and written down. This information was then kept by the researcher when reading the stories to the participants. The participants' answers were then compared to the pre-determined answers that were written down in order to determine if it was correct or not. The same sequence and format were used to select the scenario cards to use with the participants.

Throughout the training with the picture books and testing with the cards, the researcher and assistants had the instructional and testing procedures and data collection sheet (see Appendix F) of procedures to follow. Data sheets (see Appendix G) with specific instructions were used. During the training session with the book, if the child was unable to answer the questions or answered incorrectly, the researcher referred to the emotion traits sheet (see Appendix H) in order to teach the emotion traits. The assistants who tested with the emotion and scenario cards also followed the rubric and referred to the scenario card causation answers (see Appendix H). When the videos were created to ensure interobserver agreement, they were also checked to ensure that proper protocols were being followed.

Social Validity

In order for children with ASD to be able to interact socially with others, they need to be able to interpret emotions and the causes for the emotions. If they become more successful with this then they may be able to interact more with peers and begin to gain and strengthen

friendships. It is important that the children be able to generalize understanding emotions to real people. In addition, social interaction is also important when interacting with parents and siblings. Sibling interactions can be a big concern for parents. In order to check for social validity in the home, a parent questionnaire was given before the research began.

Results

The following section outlines the results for the participants' ability to identify the emotions on picture cards or scenario cards after each book was read. It also shows the results of the participants' ability to give causation of emotions. The following includes specific information based upon the three target emotions of Scared, Sad and Furious.

Training and Testing the Emotion Scared

Three books were used to teach the emotion of scared. After the initial training page, each child was able to identify the emotion scared for each page. Jake and Andrew needed re-teaching of traits once and then were able to identify the traits for the rest of the book. Brian needed re-teaching on all the pages except for the last one. However, for the next two sessions Brian was able to identify the emotion and the traits without any re-teaching. Andrew needed re-teaching of traits on the first page of the book in the second session but then was able to identify the traits independently in the third book.

When tested with the emotion cards after each story was read, all three participants were able to identify the emotion scared with 100% accuracy (see Table 3). When shown the scenario cards all three participants were able to quickly identify the emotion displayed. Jake and Brian each had a scenario card that they were not able to give a correct causation for the emotion. Their incorrect response was on different scenario cards (see Table 4).

Table 3

Book Training Results by Percentage of Correct Answers for *Scared*

Participant		Identify Emotion	Emotion Traits	Cause
Jake	Book 1	100%	83%	87%
	Book 2	100%	100%	100%
	Book 3	66%	66%	100%
Andrew	Book 1	100%	83%	71%
	Book 2	100%	50%	100%
	Book 3	100%	100%	100%
Brian	Book 1	100%	57%	85%
	Book 2	100%	100%	100%
	Book 3	100%	100%	100%

Table 4

Testing With Scenario Cards for *Scared*

Participant	Story 1		Story 2		Story 3	
	Emotion	Cause	Emotion	Cause	Emotion	Cause
Jake	Yes	Yes	Yes	No	Yes	Yes
Andrew	Yes	Yes	Yes	Yes	Yes	Yes
Brian	Yes	Yes	Yes	Yes	Yes	No

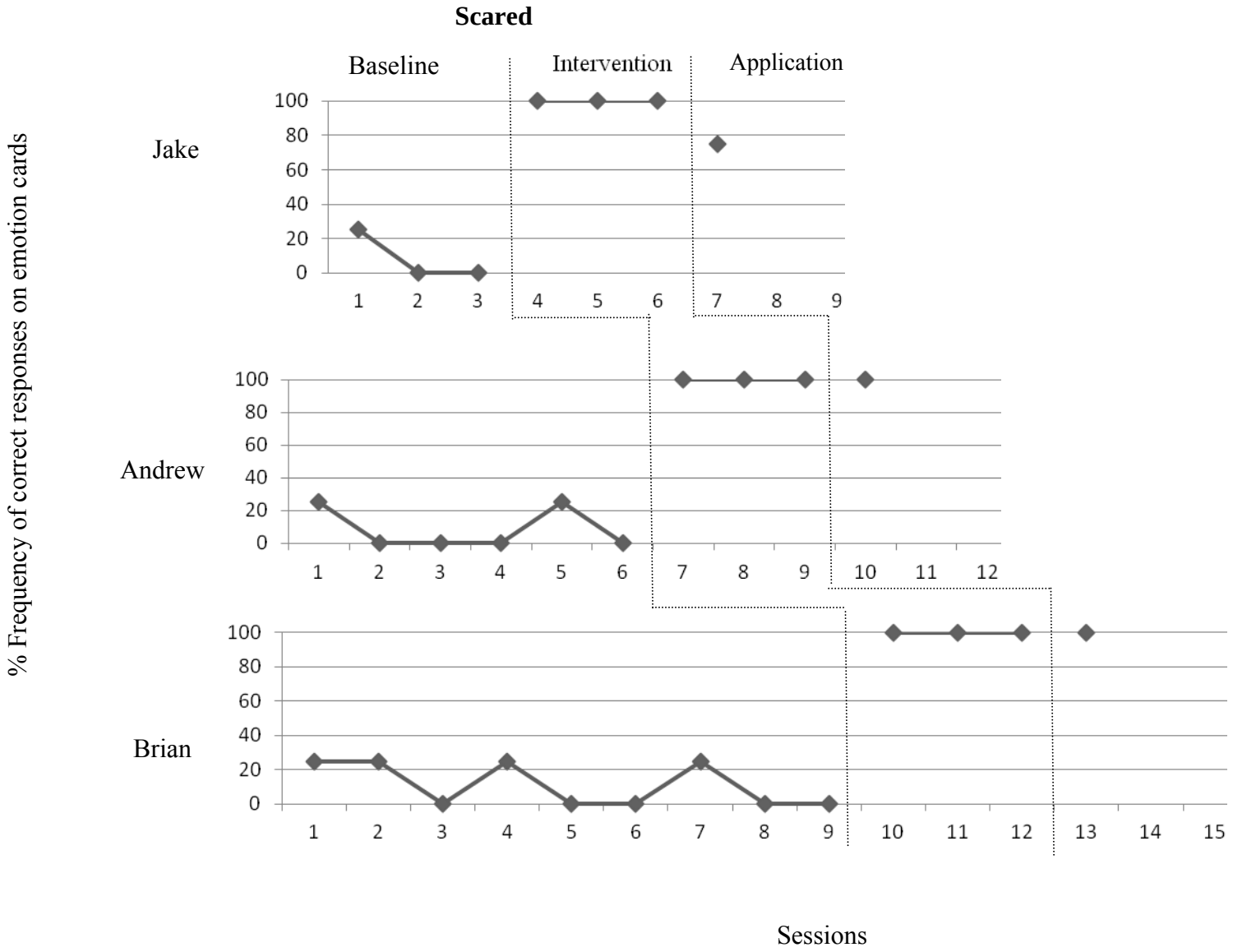

Figure 1. Data for emotion *scared*

Training and Testing the Emotion Sad

Three books were used to teach sad. All three participants were able to identify the emotion sad after the initial training with the first book. Andrew and Brian were then able to identify sad in the rest of the books and required no re-teaching. Jake needed re-training during the second session. Andrew was able to state the traits of the emotion sad accurately during the remaining two sessions. Jake and Brian needed re-teaching during the second session but they performed accurately during the third session.

Stating the cause of the emotion sad within the books appeared to be more difficult for Jake and he needed multiple re-teaching moments before giving a correct answer. Brian and Andrew were able to give causation of the emotion sad for the second book but not for the third book. However, the third book had one example of sad that was harder to determine from the picture and required the participants to listen to the story which appeared to make it more difficult for them to give a correct answer.

After reading each story, when tested with the emotion cards, Andrew and Brian were able to identify the emotion sad with 100% accuracy for three sessions. For Jake's first testing he only identified sad with 50% and so he needed another training session. The first book was used again for re-teaching for a fourth training session. He then showed 100% accuracy after this session (see Table 5). All three participants were also able to identify the emotion sad and give the causation when shown the scenario cards (see Table 6).

Table 5

Book Training Results by Percentage of Correct Answers for *Sad*

Participant		Identify Emotion	Emotion Traits	Cause
Jake	Book 1	100%	66%	66%
	Book 2	75%	60%	43%
	Book 3	100%	100%	50%
	Book 1	100%	100%	66%
Andrew	Book 1	100%	50%	50%
	Book 2	100%	100%	100%
	Book 3	100%	100%	66%
Brian	Book 1	100%	50%	66%
	Book 2	100%	75%	100%
	Book 3	100%	100%	66%

Table 6

Testing With Scenario Cards for *Sad*

Participant	Story 1		Story 2		Story 3	
	Emotion	Cause	Emotion	Cause	Emotion	Cause
Jake	Yes	Yes	Yes	Yes	Yes	Yes
Andrew	Yes	Yes	Yes	Yes	Yes	Yes
Brian	Yes	Yes	Yes	Yes	Yes	Yes

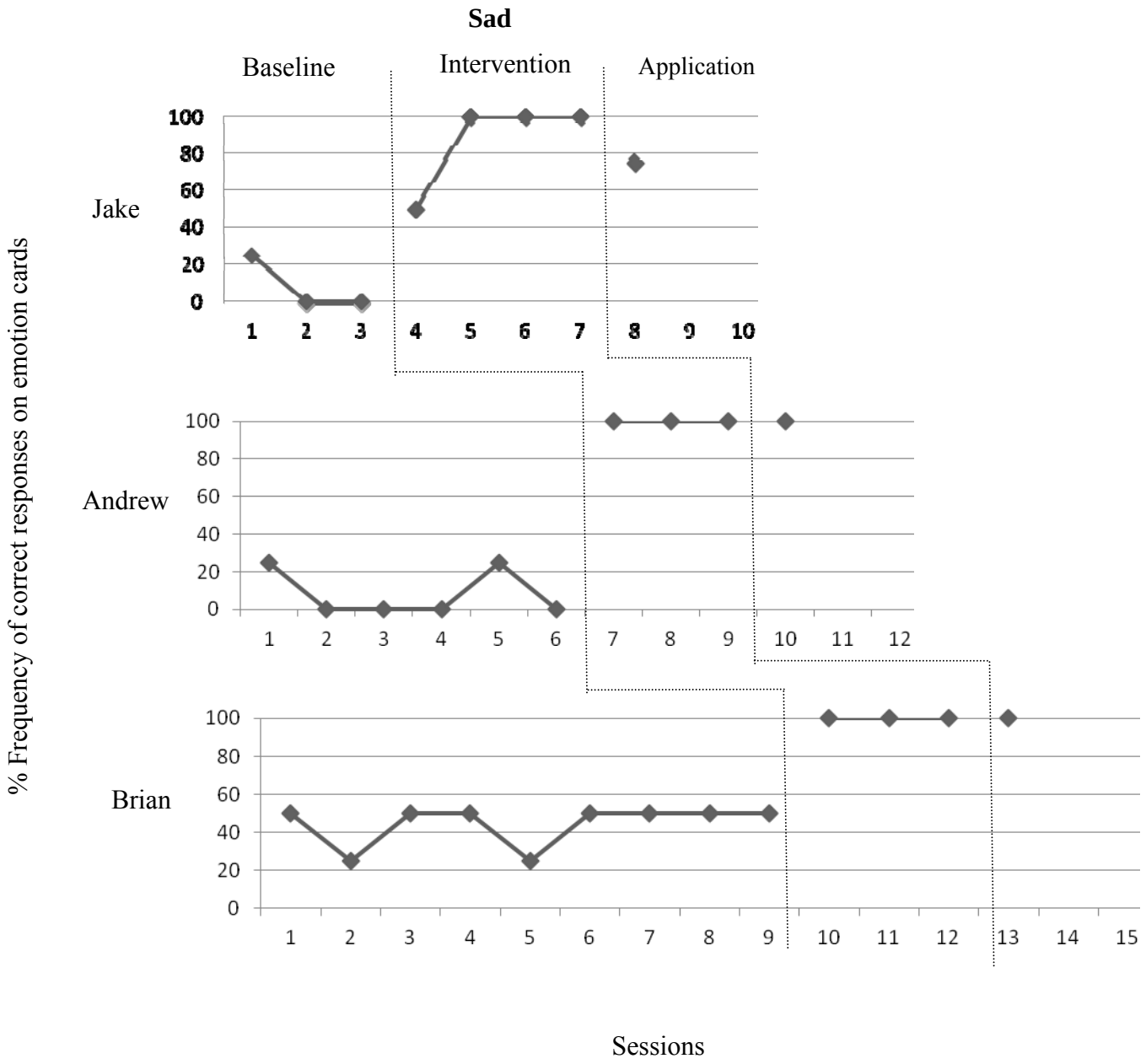

Figure 2. Data for emotion *sad*

Training and Testing the Emotion Furious

Only two books were found to teach the emotion furious. The participants had a hard time differentiating between furious and mad during the first session. When shown the emotion on the page they wanted to call the emotion mad. However, after the first session Brian and Andrew were able to state the emotion and give the traits with accuracy. Jake required multiple of extra sessions to help him identify the emotion and the traits.

When tested with the emotion cards after each story was read, all Andrew was able to identify the emotion furious with 100% accuracy. Brian needed one additional session in order to master the emotion. Jake needed three additional sessions. Book one and two were used alternately until each child mastered the emotion furious (see Tables 7 and 8).

Final Test of Target Emotions

Once all three emotions were mastered, each participant was tested with the set of cards that contained the photographs of individuals unknown to the participants. Andrew and Brian identified all three emotions with 100% accuracy. Jake identified furious with 100% accuracy and scared and sad with 75% accuracy (see Table 9).

When shown novel story cards of the three emotions, Andrew and Brian were both able to identify the emotion and the cause of the emotion. Jake was able to identify all three emotions but was unable to give correct causation for any of the stories (see Table 10).

Table 7

Book Training Results by Percentage of Correct Answers for *Furious*

Participant		Identify Emotion	Emotion Traits	Cause
Jake	Book 1	40%	33%	50%
	Book 2	100%	100%	50%
	Book 1	100%	50%	50%
	Book 2	100%	100%	66%
	Book 1	100%	66%	100%
	Book 2	100%	100%	100%
Andrew	Book 1	100%	100%	100%
	Book 2	100%	100%	75%
	Book 3	100%	100%	100%
Brian	Book 1	75%	75%	50%
	Book 2	100%	100%	100%
	Book 1	100%	100%	100%
	Book 2	100%	100%	100%

Table 8

Testing With Scenario Cards for *Furious*

Participant	Session 1		Session 2		Session 3		Session 4		Session 5		Session 6	
	Emotion	Cause	Emotion	Cause	Emotion	Cause	Emotion	Cause	Emotion	Cause	Emotion	Cause
Jake	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Andrew	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	-	-	-
Brian	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	-

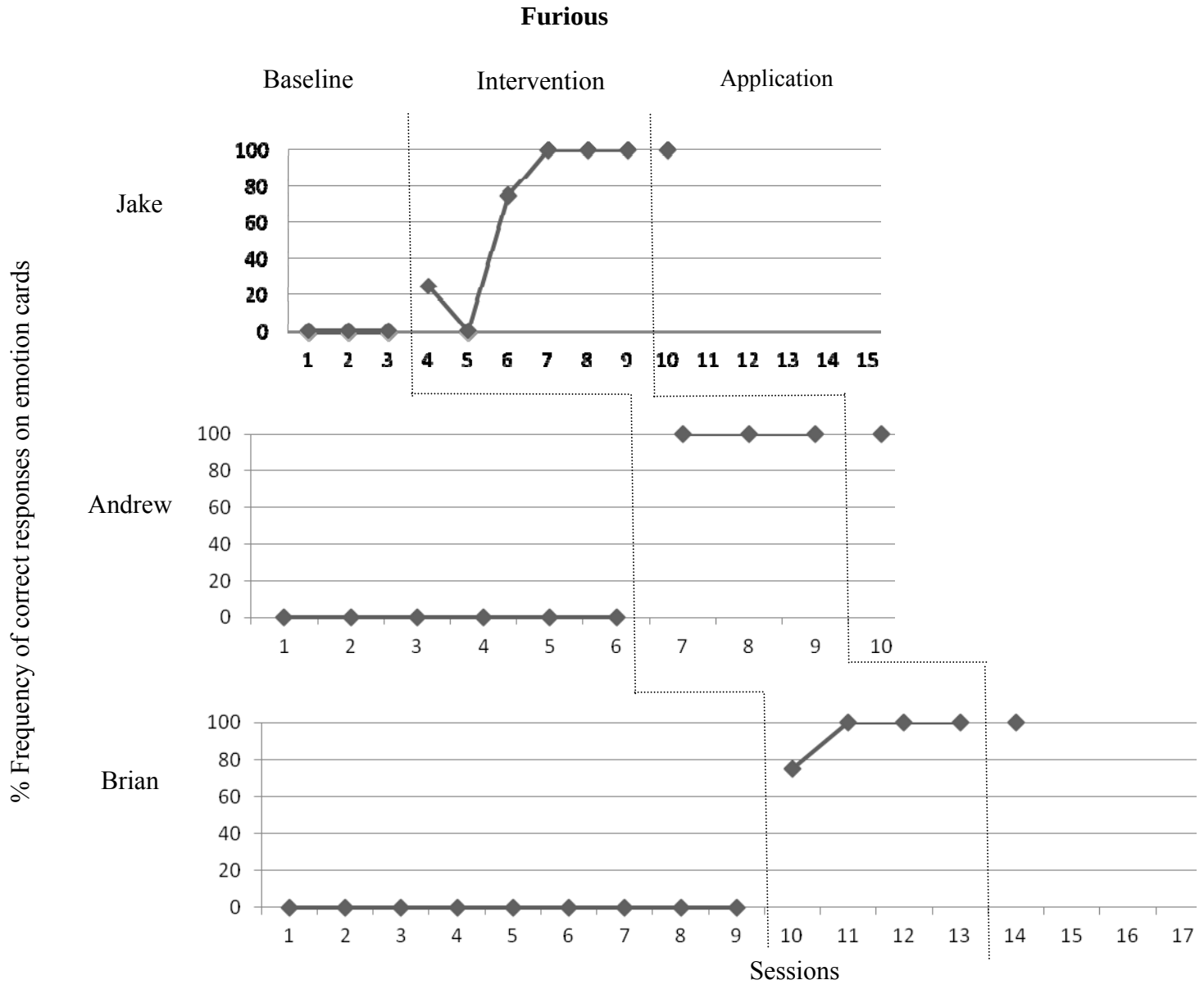

Figure 3.Data for emotion *furious*

Table 9

Final Testing of Three Emotions on Photo Cards

Participant	Scared	Sad	Furious
Jake	75%	75%	100%
Andrew	100%	100%	100%
Brian	100%	100%	100%

Table 10

Final Test of Story Cards

Participant	Scared		Sad		Furious	
	Emotion	Cause	Emotion	Cause	Emotion	Cause
Jake	Yes	No	Yes	No	Yes	No
Andrew	Yes	Yes	Yes	Yes	Yes	Yes
Brian	Yes	Yes	Yes	Yes	Yes	Yes

Discussion

This study examined the effectiveness of using picture books as a tool to teach children with ASD learn to identify three emotions and the cause of each emotion. Additionally, the researcher sought to determine if the participants would generalize emotion recognition and causation across novel photographs. The effectiveness of this study was studied across three participants between the ages of seven and eight. The three emotions that were targeted were scared, sad and furious.

The baseline data indicated that the entire class showed very little or no recognition of emotions. Happy and mad were common emotions that the participants did know. About half of the students in the class were not consistent in identifying these two emotions. Before looking at the baseline data, it was assumed that most of the students would already know happy, sad and mad. It was a surprise to learn that even those students who were older (nine to ten years old) struggled with correctly identifying these three basic emotions. Trouble with emotion recognition is consistent with Baron-Cohen's research (1991). He also proposed that the more complex emotions would be harder for individuals with ASD to learn. This held true as furious appeared to be the hardest of the three target emotions for the participants to learn. The participants struggled differentiating between mad and furious.

The difficulty in recognizing sadness may be related to the avoidance of the eye region by individuals with an ASD as proposed by some researchers. This avoidance may make it harder for them to recognize emotions such as distress, fear, discomfort and sadness which could be caused by the avoidance of the eye region (Ashwin et al., 2007; Boraston et al., 2007; Dawson et al., 2004; Pelphrey et al., 2004; Sigman, 1992). Klin et al. (2002) discovered that individuals with an ASD pay more attention to the mouth. Because happy and mad can easily be recognized

by the big variance of the mouth shape, perhaps this was why the participants had happy and mad mastered but none of the other emotions.

The results of this study indicate that the participants learned to identify emotions through the use of picture books and generalized this skill to identifying emotions in novel photos. Even though one participant was not able to show mastery of emotion recognition when shown novel faces, he demonstrated an increase in his skill. He also showed identification of the emotions in the final novel story cards. This same participant struggled during some training sessions in learning to identify emotions and needed extra sessions to master target emotions, especially furious. This improvement in emotion recognition is similar to Lacava et al. (2007) who researched the effectiveness of the "Mind Reading: The Interactive Guide to Emotions" software program. The authors found that all the individuals tested increased their ability to identify emotions. They also said that parents reported that their children began to ask "What does my face say?" and began to focus more on other's faces. However, the use of books may be more accessible to teachers and parents than a software program. Although not all classrooms and homes have access to a computer, books are easily accessible in the school or community library. Books are also part of the natural environment in the classroom and students typically read or are read to each day.

Andrew and Brian both showed generalization of the ability to identify causation of an emotion when shown photographed novel story cards instead of the No-Glamour scenario cards. Jake did not show generalization of identifying emotion causation in the novel story card photographs. This was the same participant who struggled more than the other two in learning to identify and state traits of emotions as well as state emotion causation during training sessions. As the participants focused on looking at the face to determine emotions and causation, two of

the participants began paying more attention to the eyes and looking where the character in the book was looking in order to determine the causation of the emotion displayed. For example, Brian began taking his finger and running it from the character's eyes to the item or person the character was looking at. In one instance, the character was looking at a door and so the Brian drew his finger from the character's eyes to the door and excitedly said, "He's looking at the door! He is scared because someone is knocking on the door!" He continued to do this for the rest of the picture books and scenario cards. Andrew and Brian were both able to give correct causation answers for all of the scenario cards they were tested with.

Jake consistently struggled with identifying causation of an emotion. He did not focus on the eyes as the other two participants did. Most of his answers tended to be related to himself rather than the character. For example, Jake was shown one of the No-Glamour scenario cards that showed a boy scared while he was in a pool. He said "the boy is scared because he doesn't like water." Jake does not like to be wet and so he doesn't like water. He did not understand the character's belief system (Baron-Cohen, 1991), that the boy was scared because he might drown. One of the novel photographed story cards shows a boy who is sad because his balloon has popped. Jake's response was that "The boy is sad because he is bored with the balloon." This struggle does not appear to be related to IQ as one of the other participant's IQ scores for overall and verbal were lower than Jake’s.

Furious was the hardest emotion to master. The participants struggled with differentiation between mad and furious which is a subset of mad. For most of the incorrect answers the participants tended to say that the character or person on the emotion card was mad. It took extra training time per book to help the participants master the emotion. Breaking down the emotion by traits appeared to be a big help. Jake struggled with learning the emotion traits

for frustrated. When Jake finally began to recognize furious he said, "Oh, I get it! It's a big mad! The mouth gets bigger. The hands get bigger!"

When comparing the parent questionnaire to what the participants knew, it was interesting to note that Andrew's mother's marking of emotions that her child knew and didn't know were very similar to what the researcher discovered when reviewing baseline data of emotion recognition. She noted that he has a very difficult time picking up on emotions unless they are extreme. When he has hurt his brother, she has to point out the brother's emotions and explain that what he did made him feel sad. It would be interesting to see what Andrew's mom would report on his emotion recognition and causation in the home.

Brian's parents differed greatly from what they thought he knew compared to what he knew according to baseline data. They reported that when they show the emotion of happy or excitement, he would ask, "Why are you so happy?" However, when they were sad or scared he would respond to their emotions by saying, "What's wrong?" which lead them to believe that he knew the emotion sad and scared rather than possibly responding to a change of emotion from happy. Brian did indentify sad and scared during baseline trials but his responses were inconsistent.

Unfortunately the school year ended and none of the parents sent in their follow-up questionnaire. It would have been interesting to see if there was a change in perception of emotion identification and responses about their children. However, each of these parents were dealing with busy and stressful situations at home related to having a child with special needs. Filling out a questionnaire may be last on their priorities which made getting feedback difficult.

Limitations of Research

One major limitation of this research was trying to complete research before the school year ended. This required multiple sessions to be completed each day which allowed the research to be concluded quickly. This did not allow time to see if the participants retained what they learned over a longer time period or allow time to gather the parent questionnaires at the end of the study due to the school year ending. Additionally, because of multiple sessions in one day, some of the participants began to get restless and did not appear to be paying as much attention as they would during the first session of the day. In addition, interobserver agreement was not collected during baseline data due to time constraints.

Also, finding picture books that portrayed emotions on human faces was a more daunting task than was originally thought. Many of the human faces were blurred, did not contain all facial characteristics such as eyebrows or only showed s small portion of the face. Furious was especially hard to find applicable picture books for and so only two were used.

A final compounding variable in this study is the participant selection. Out of thirteen possible candidates, only six had an IQ test that had been completed at some point in their education. One candidate did not meet the verbal IQ requirement and another did not meet either the verbal or the overall requirement. However, his testing had been completed while he was in preschool and did not appear to match where the child was currently performing. He was above grade level academically and very verbal. If this study were conducted again, it would be best to give an IQ test at the beginning of the research in order to determine that one has been completed and that it is current. This would also help to ensure a larger pool to pull from to ensure both high-functioning autism and Asperger Syndrome are represented. The one participant with Asperger Syndrome had to drop out of the study due to illness.

Implications for Future Research

Future research should include more participants with both HFA and AS in order to ensure that using picture books is an effective tool for teaching emotions. It should also be conducted over a longer time period where only one session per day is required. This would also allow for interobserver agreement to be collected during baseline. The use of multiple probe design may also be beneficial if done over a longer time period so that testing would not have to be done daily and the participants would not get as tired of the testing phase.

Also, it would be interesting to see if picture books using animals or non-living things that have human facial characteristics would still be successful. Many children with an ASD tend to enjoy stories about animals such as dinosaurs or non-living things such as trains. Also, many of the popular children's picture books that teachers use have animals as a main character such as a mice or pigeons. Would the participants be able to still generalize the emotion traits and recognition when shown photographs of other people? If picture books of animals were still successful, then it would be easier for teachers to find books for teaching emotions.

Finally, it would be important to find out of the generalization of emotion recognition can be taken one step farther to showing participants short movies of individuals displaying emotions and have them still recognize the emotion. When van der Geest et al. (2002) studied eye gaze and found that individuals with an ASD would look at a photo of a person similarly to a control group of typical developing individuals but would change when shown a video, they did not indicate what caused this difference other than the individuals with an ASD focused on the mouth. Is it possible that by using a picture book to teach emotions by focusing on the various facial traits that the individual would eventually change their eye gaze to the eyes more when shown a video or watching real people?

Conclusion

In conclusion, this study showed that three children with ASD diagnosis aged seven through eight increased their ability to identify others' emotions of sad, scared, and furious. This increased ability to identify emotions was subsequent to teaching emotions with children's picture books. Representing skill generalization, two out of the three participants were also able to identify the cause of emotions on novel photographed story cards.

The use of bibliotherapy has recently become a popular technique for helping children learn social skills within the classroom (Cartledge & Kiarie, 2001) and to create a positive environment in the classroom (Morris et al., 2000). Children with an ASD tend to struggle in being able to identify emotions in others which impacts their ability to appropriately interact socially with others (Halberstadt et al., 2001). McConnell (2002) suggests that in order for a child to improve social impairments there needs to be effective social skills training. Using picture books to improve emotion recognition is an easy, inexpensive way for teachers to incorporate in the classroom. Researchers should continue to examine the use of picture books in order to teach emotions to individuals with an ASD.

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Appendix A

Cards used from the No-Glamour Problem Solving Cards

Sad

Level 1, number 1 The girl is sad because her glasses are broken.

Level 1, number 44 The boy is sad because he lost his balloon.

Level 1, number 54 The boy is sad because his cookies are burnt.

Scared

Level 1, number 9 The girl is scared because of the snake (or the snake might get her).

Level 1, number 20 The boy is scared because it is the first day of school.

Level 1, number 57 The boy is scared because he doesn't know how to swim (or he might drown).

Furious

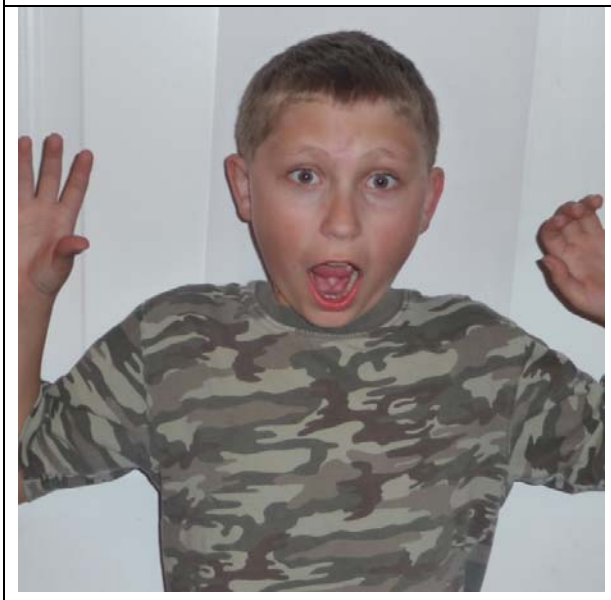
Level 1, number 55 The mom is furious because the dog is chewing the baby's sock.

Level 2, number 14 The parents are furious because they are arguing (there isn't a clear cause of the argument).

Level 2, number 41 The mom is furious because the boy is playing the drum while she is on the phone.

Appendix B

Novel Photograph Emotion Cards

	
Sad	Sad
	
Scared	Scared

Furious

Furious

Sad because his balloon has popped (or broken).

The boy is scared because the boy is about to hit him with a ball.

The girl is furious because the boy won't give her the remote (or the boy is taking the remote from her.

Appendix C

Evaluation Instrument Findings for Selected Picture Books

The Spooky Book by Steve Patschke.

1. The pictures are full color.
2. There are 1-2 sentences per page.
3. The main character is a boy and is focused around him reading a spooky book that a girl is reading.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are five examples of scared.

Read All About It by Laura Bush and Jenna Bush

1. The pictures are full color.
2. There are 1-3 sentences per page.
3. The main character is a boy and is focused around him learning to enjoy reading books.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are three examples of scared.

Horace P. Tuttle, Magician Extraordinaire! by Christine M. Schneider

1. The pictures are full color.
2. There are 1-3 sentences per page.
3. The main character is a magician whose assistants become frustrated with him.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are two examples of scared.

Princess Peepers by Pam Calvert

1. The pictures are full color.
2. There are 1-2 sentences per page.
3. The main character is a girl who wears glasses but is teased about it.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are three examples of sad.

Purplicious by Victoria Kann and Elizabeth Kann

1. The pictures are full color.
2. There are 1-2 sentences per page.
3. The main character is a girl who is teased about liking pink. She feels as if nobody else likes pink and so she shouldn't either.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are two examples of sad.

I Remember Papa by Greg Shed

1. The pictures are full color.
2. There are 3-5 sentences per page. Illustrations are on one page while the writing is on the other.
3. The main character is a boy who wants to buy a baseball glove but loses his money.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are two examples of sad.

The Recess Queen by Alexis O'neill

1. The pictures are full color.
2. There are 2-3 sentences per page.
3. The main character is a girl who likes to be first at everything at the playground. She is a bully to other kids.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are three examples of furious.

The Worst Best Friend by Alexis O'neill

1. The pictures are full color.
2. There are 2-3 sentences per page.
3. The main character is a boy who loses his best friend to a new kid at school.
4. The characters in the book show all parts of a face and include a mouth, nose, eyes and eyebrows.
5. There are two examples of furious.

Selected Books Used for Training

Scared

The Spooky Book by Steve Patschke.

Pg 6 – the wind sounds like a ghost.

Pg 12 – he is afraid of goblins.

Pg 22 – there was a knock on the door.

Pg 24 and 25 they are scared of each other (he is afraid of her, she is afraid of him)

Read All About It by Laura Bush and Jenna Bush

Pg. 10 – the boy sees a ghost (you can also use page 11 for the same cause).

Pg. 15 – the boy and girl see a dragon.

Pg. 18 – the pig was gone.

Horace P. Tuttle, Magician Extraordinaire! by Christine M. Schneider

Pg. 19 – the woman is scared of the lizard on her head.

Pg. 27 – the woman is scared of the tiger.

Sad

Princess Peepers by Pam Calvert

Pg 4 – the other princesses are teasing her.

Pg 6 – the other princesses are teasing her or they are being mean to her.

Pg 8 – she has to put her glasses away or she doesn't want to be different

Purplicious by Victoria Kann and Elizabeth Kann

Pg 8 – she only has pink things

Pg 22 – she thinks that she is the only one who likes pink or nobody else likes pink

I Remember Papa by Greg Shed

Pg 19 – he lost his money.

Pg 20- the lady didn't have his money or his money is still lost.

Furious

The Recess Queen by Alexis O'Neill

Pg. 3 – she wanted to be first.

Pg. 13 – Katie Sue doesn't know her rules.

Pg 16 – Katie Sue ran away from her

The Worst Best Friend by Alexis O'Neill

Pg 12 - his best friend isn't spending time with him.

Pg 14 - Victor took Mike's friend or he called to be captain first.

Appendix D

Emotion Traits for Target Emotions

Sad

1. mouth down in a frown
2. head tilted down
3. eyes may be looking down or crying
4. eyebrows relaxed.

Scared

1. big open eyes
2. hands close to body and may be in the air
3. eyebrows raised high
4. mouth open wide
5. forehead wrinkled slightly, may run

Furious

1. eyebrows down
2. forehead wrinkled
3. mouth with teeth showing or yelling
4. eyes looking at person
5. hands in a fist or pointing

Appendix E

Informed Consent - Research Participation and Parental Permission Form

Background: Research has shown that children with autism or Asperger Syndrome often struggle with social situations. One aspect of their social struggle is their ability to identify emotions in others. I, Jennifer M. Fletcher, am conducting a research study to determine if the use of picture books can be a useful tool in teaching children emotion identification in others. The benefit of this research is that it may provide an inexpensive and fun way to teach emotion identification which may then help improve students 'success in social interactions.

I am requesting that your child be allowed to take part in this research study. The following information is provided so that you can decide if you wish to allow your child to take part. You should be aware that even if you give consent, your child may choose to withdraw at any time without penalty. In addition, you may withdraw him/her at any time.

Study Procedure: Emotion identification baseline data will have been collected prior to the initiation of this study as part of the classroom social curriculum. This baseline data will be used to determine who in the classroom needs to work on emotion identification skills. Also, before beginning the study, your child's special education records will be accessed by the researcher (Jennifer M. Fletcher) to check for your child's IQ and educational classification. At the beginning of the study you will also be asked to fill out a checklist and answer a few questions before the study and after the study. Each questionnaire should only take about 15 minutes of your time.

Your child will be engaged in a series of tasks, including:

Teach:

1. Picture book – teach the new emotion from the book, then the child identifies the emotion and cause of the emotion

Test:

1. Picture card – identify the new emotion found on a picture card
2. Scenario card – identify the new emotion AND cause of the emotion

After 3 emotions are mastered, generalize:

3. Photograph – identify the new emotions found on picture cards
4. Photograph of novel story cards - identify the new emotions AND cause of the emotions

This study will happen in the classroom during normal 1-1 rotation work time for your child in order to minimize any disruptions to your child's daily routine. This study will take place over a two week time period. In addition, your child may be videotaped solely for the purpose to ensure fidelity of data being taken. After the research has been completed, the video will be destroyed and it will not be used for any other purpose.

Confidentiality: Additionally, please be assured that all research materials will be confidential. Names will be removed from research materials to make it impossible for anyone to associate questionnaire or research results with you or your child. Neither your name nor your

child's name will ever be used in connection with any presentation of this research. At the conclusion of this study, I will be happy to discuss the results with you.

Risks: There are minimal risks associated with the study. Your child may not learn the emotions that are being taught. No time will be taken away from your child's education as this research will take place during their normal social skills instructional period.

Voluntary Participation: Participation is voluntary and you may withdraw at any time without penalty or loss of benefits. Withdrawal or refusal to participate will not affect your child's standing in the classroom or at school. If you give permission to include your child in the study, he/she will also be asked if he/she would like to participate. Copies of all questionnaires and tests to be used are on file at your child's school for your review.

Benefits: There are no direct benefits. However, it is possible that participation in this study will result in an increase of emotion recognition skills.

Contact Persons: If you have any questions regarding this project please contact Jennifer M. Fletcher at Hidden Hollow Elementary (801) 789-7804. You may also contact Tina Dyches at the BYU Counseling Psychology and Special Education department (801) 422-5045

Institutional Review Board: If you have questions about your rights as participants in the study you may call the Brigham Young University Institutional Review Board at (801) 422-3841. You may also write the Institutional Review Board at Brigham Young University, A-285 ASB Provo, Utah 84602. In addition you may email irb@byu.edu.

Authorization: If you will allow your child to participate in this research, please sign this letter and return it to school in your child's backpack. A copy of this letter will be given to you for your records. Your cooperation is appreciated.

I have read the above and understand the inconveniences, risks, and possible benefits of the study. I agree to the participation of myself and my child. I also understand that my signature provides consent for the following items:

- I understand that baseline data for emotion recognition that has been previously obtained within the classroom will be used for the study.
- I also give permission to release my child's educational records which include IQ scores and educational classification to the researcher. These scores will only be used to determine qualification for the study and will not be published with my child's name or other identifying information.
- I consent to fill out the questionnaires that will be given to me at the beginning and the end of the research.
- I consent to have my child participate in the emotion recognition training.

I agree to the participation of me and my child listed below:

_____ Date_____
Signature of Parent or Guardian

_____ Date_____
Signature of Parent or Guardian

_____ Date of Birth _____
Name of Child

Informed Consent- Photography for Emotions

Research has shown that children with autism or Asperger Syndrome often struggle with social situations. One aspect of their social struggle is their ability to identify emotions in others. I am conducting a study to determine if the use of picture books can be a useful tool in teaching children emotion identification in others.

One aspect of learning is to make sure that the skill is generalized to new situations. As a part of this study photographs are required to present novel situations to assess generalization of emotions learned. I am requesting that your child _____ be photographed to create emotion and scenario cards. Your child's name will not be used or mentioned in any way. Your child's picture may be used for presentation use (PowerPoint presentation for master's thesis defense). If you do not want this, then please indicate below.

If you will allow your child to be photographed, please sign this letter and return it to your child's teacher, the front office or to me in room 220 of Hidden Hollow Elementary School. A copy of this letter will be given to you for your records. Your cooperation is appreciated.

If you have any questions concerning the study, please contact me at Hidden Hollow Elementary School (801) 789-7804 or Tina Dyches at BYU Counseling Psychology and Special Education department (801)-422-5045.

Sincerely,

Jennifer M. Fletcher.

I give my permission for _____'s photograph to be taken. I also understand that all personal information will be kept confidential and that my child's name will not be associated with the picture.

_____ _____

Signature of parent or guardian Date

☐ I give permission for my child's photograph to be used for presentation use.

☐ I do NOT give permission for my child's photograph to be used for presentation use.

Appendix F

Parent Questionnaire of Emotions – Before the Study

Thank you for your cooperation with this study. Please take a few minutes and fill this out. Then send it back to school in your child's backpack.

Gender: M ____ F ____ Age: ____ Race: ____ What county do you live in? _____

Please mark the emotions that you feel your child can recognize in others.

_____ happy	_____ sad	_____ mad	_____ scared
_____ shocked	_____ bored	_____ frustrated	_____ jealous
_____ surprised	_____ lonely	_____ terrified	_____ furious
_____ excited	_____ nervous	_____ proud	_____ worried
_____ confused	_____ tired	_____ mischievous	_____ anxious
_____ disgusted	_____ hurt	_____ thinking	

Please mark how often the lack of emotion identification in others is an issue for your child.

____ never ____ rarely ____ occasionally ____ fairly often ____ regularly

Please explain how the lack of emotion identification impacts your child's life. Please give a specific example if possible.

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Parent Questionnaire of Emotions - After the Study

Thank you for your cooperation with this study. Please take a few minutes and fill this out. Then send it back to school in your child's backpack.

Gender: M ____ F ____ Age: ____ Race: ____ What county do you live in? _____

Please mark the emotions that you feel your child can recognize in others.

_____ happy	_____ sad	_____ mad	_____ scared
_____ shocked	_____ bored	_____ frustrated	_____ jealous
_____ surprised	_____ lonely	_____ terrified	_____ furious
_____ excited	_____ nervous	_____ proud	_____ worried
_____ confused	_____ tired	_____ mischievous	_____ anxious
_____ disgusted	_____ hurt	_____ thinking	

Please mark how often the lack of emotion identification in others is an issue for your child.

____ never ____ rarely ____ occasionally ____ fairly often ____ regularly

Have you noticed any changes in your child's ability to recognize emotions in others?

_____ yes _____ no

If you have, what changes have you noticed? Please give examples if possible.

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Appendix G

Instructional and Testing Procedures and Data Collection

Teacher does:	Student does:	Data collected:
1. Read xxx book, stopping at page xx. Break down the emotion traits by pointing to various facial characteristics. Say, "xxx is feeling xxx." "How does he feel?" "How do you know his face is (emotion)?"	Verbally states the emotion within 10 seconds without prompt. States the different traits of the emotion.	+ = States the emotion and the traits of the emotion correctly within 10 seconds. Move on to step two. - = States an incorrect answer. Review and ask the question again. 0 = Does not state emotion within 10 seconds. Review and ask again.
2. Using the character on the same page of the book, explain to the child why the character is feeling that emotion. Say, "He is feeling xxx because xxx." Then ask, "Why does he feel (emotion)?"	Verbally states the cause of the emotion within 10 seconds without prompt.	+ = States the cause of the emotion correctly within 10 seconds. Move on to step three. - = States an incorrect answer. Review and ask the question again. 0 = Does not state the cause of the emotion within 10 seconds. Review and ask again.
3. Read xxx book, stopping at a new page showing the same emotion xx and ask, “How does he feel?”	Verbally states the emotion within 10 seconds with no prompts.	+ = States the correct emotion within 10 seconds. - = States an incorrect emotion. Review. 0 = Does not state an emotion within 10 seconds. Review.
4. Show the emotion card (xxx) that corresponds to the emotion in the book and asks, “How does he feel?”	Verbally states the emotion within 10 seconds with no prompts.	+ = States the correct emotion within 10 seconds. - = States an incorrect emotion 0 = Does not state an emotion within 10 seconds.
5. Show a scenario card of a character expressing an emotion xxx and asks “How does he feel?” "Why does he feel (emotion)?"	Verbally states the emotion within 10 seconds with no prompts. Verbally states the cause of the emotion within 10 seconds with no prompts.	+ = States the correct emotion and cause within 10 seconds. - = States an incorrect emotion or cause 0 = Does not state an emotion or cause within 10 seconds.

Appendix H

Data Collection for Emotions Taught From Books

Name: __________________________ Target emotion: ___________________

Book: ______________________________________

Date: _______________

Names emotion

States traits of the emotion

Gives cause of emotion

Date: _______________

Names emotion

States traits of the emotion

Gives cause of emotion

Date: _______________

Names emotion

States traits of the emotion

Gives cause of emotion

Record the trials according to the rubric below. When moving on to a new page, draw a line between the boxes of the old page and the new page.

+ = states the name, traits or cause of emotion correctly within 10 seconds. - = states an incorrect answer
0 = does not state an answer

Data Collection Identifying Emotions from Picture and Scenario Cards

Name: __________________ Target emotion: _______________

Emotions	Date			

Scenario card

Emotion				
Cause				

Emotions	Date			

Scenario card

Emotion				
Cause				

Emotions	Date			

Scenario card

Emotion				
Cause				

Emotions	Date			

Scenario card

Emotion				
Cause				

Emotions	Date			

Scenario card

Emotion				
Cause				

Emotions	Date			

Scenario card

Emotion				
Cause				

Write the date and mix the target emotion card up with the other pre-determined cards for this student. Show each card one at a time and ask, "How is this person feeling?" Record the response according to the rubric below. If the student does not give a response or gives an incorrect response, then state the emotion and state the traits for the student by following the emotion traits paper. Do not test again but move on to the scenario cards. Show the scenario card and ask, "How is (name) feeling?" Record the response. Ask, "Why is (name) feeling (emotion)?" and record the response on a separate piece of paper. Compare the child's answer to the rubric for the scenario card and then score.

\+ = States emotion or cause within 10 sec. - = Incorrect response 0 = No response in 10 sec.

Data Collection Identifying Emotions and Causes from Novel Photo Emotion and Story Cards

Name: __________________ Target emotion: _______________

Emotions	Date			

Emotions	Date			

Scenario card

Emotion				
Cause				

Scenario card

Emotion				
Cause				

Emotions	Date			

Emotions	Date			

Scenario card

Emotion				
Cause				

Scenario card

Emotion				
Cause				

Emotions	Date			

Emotions	Date			

Scenario card

Emotion				
Cause				

Scenario card

Emotion				
Cause				

Write the date and mix the target emotion card up with the other pre-determined cards for this student. Show each card one at a time and ask, "How is this person feeling?" Record the response according to the rubric below. If the student does not give a response or gives an incorrect response, then state the emotion and state the traits for the student by following the emotion traits paper. Do not test again but move on to the story cards. Show the story card and ask, "How is (name) feeling?" Record the response. Ask, "Why is (name) feeling (emotion)?" and record the response on a separate piece of paper. Compare the child's answer to the rubric for the story card and then score.

+ = States emotion or cause within 10 sec. - = Incorrect response 0 = No response in 10 sec.

Data Collection Weekly Probe and Final Pictures

Name: _____

Weekly probe of emotions

	Date									
Emotions										

Each week show pictures in random order of emotions child already knows with new ones the child has learned. Use the code below to record responses.

+ = States emotion or cause within 10 sec. - = Incorrect response 0 = No response in 10 sec.