THE EFFECT OF LANGUAGE ABILITY OF INTERNALIZING STUDENTS ON IMPROVEMENT IN STRONG KIDS: A SOCIAL AND EMOTIONAL LEARNING CURRICULUM FOR STUDENTS IN GRADES 4-8

by

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ABSTRACT

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Abstract

This study assessed the influence of language on the ability of children identified as being at risk for internalizing behavior disorders to successfully participate in a social skills intervention program. Fourth and fifth grade students participated in *Strong Kids: A Social and Emotional Learning Curriculum in Grades 4-8*, a program which promotes emotional resiliency. The *Clinical Evaluation of Language Fundamentals-Fourth Edition* (CELF-4) and *Children's Communication Checklist-Second Edition* (CCC-2) were both completed to obtain a global language score and pragmatic language score. The *Teacher's Report Form* (TRF), a shortened 10-item version of the *Internalizing Student Symptom Scale* (ISSC), and a 20-item knowledge based assessment relating to the *Strong Kids* curriculum were completed prior to and after the intervention. These behavioral

assessments were administered in order to determine improvement in academic performance, adaptive functioning, and behavioral/emotional problems with relation to language functioning. It was found that children with higher general language abilities made significantly positive improvements with regard to withdrawal than children with lower general language abilities on measures taken prior to and directly after the *Strong Kids* curriculum. Additionally, the ISSC revealed that children with lower general language abilities rated themselves as having significantly more positive changes in behavior than children with higher general language abilities on measures taken prior to and six weeks following the *Strong Kids* curriculum. Pragmatic functioning, determined by the CCC-2, was not associated with significant behavioral improvements between children with high and low pragmatic language skills.

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Introduction

Emotional and behavioral disorders (EBDs) in children are a serious problem in elementary schools. For example, Wagner (1995) found students with serious emotional disturbance to be at risk for a number of negative outcomes including poor academic performance, school dropout, unemployment, absenteeism, and poor social integration. Numerous studies have also shown negative outcomes similar to Wagner's findings within this population (Davis & Vander Stoep, 1997; Kazdin, 1993; Marder & D'Amico, 1992; Wagner, 1991). In response to these negative outcomes, various intervention programs have been implemented. Many of these programs include preventative measures focused on children at risk for serious emotional disturbance (Forness, Kavale, MacMillan, Asarnow, & Duncan, 1996; Hocutt, McKinney, & Montague, 2002).

Research focused on children with internalizing behavior disorders, a subtype of EBD, has shown that receiving psychosocial treatment benefits this population. Psychosocial treatment programs have helped to reduce the symptoms of childhood internalizing behavior disorders. Sustained improvements lasting for a considerable period of time have also been documented (Compton, Burns, Egger, & Robertson, 2002). However, many of these treatment programs are heavily language based (Fujiki, Brinton, Morgan, & Hart, 1999). This is a potentially serious problem in that children with socioemotional problems in general (and internalizing behavior disorders in particular) often have undiagnosed language problems.

For example, Cohen, Barwick, Horodezky, Vallance, and Im (1998) studied the language, achievement, and cognitive processing of psychiatrically disturbed children. Children were referred based on externalizing behavior problems, emotional problems, and family dysfunction. Approximately 40% of the children in the study exhibited a

language impairment (LI) that had not been suspected prior to the assessment. Nelson, Benner, and Cheney (2005) estimated that two-thirds of students with EBD exhibit clinically significant expressive and receptive language deficits. Based on the work of Cohen et al. and Nelson et al., it is possible that some children with internalizing problems would have difficulty in psychosocial intervention due to the language demands that are required in their treatment programs.

In considering the relationship of socioemotional problems and language ability, it is also important to note that many children formally diagnosed with LI also have internalizing problems. For example, Fujiki, Brinton, Morgan, et al. (1999) studied withdrawal and sociability of children with LI. Children with LI were found to be significantly more reticent than their typically developing peers. Teachers perceived these children with LI to be too anxious, fearful, or inept to enter and stay in interactions with their peers.

The overlap of EBD and LI makes it important to consider whether the language requirements of scripted treatment programs are too demanding for children who have both emotional behavior problems and language difficulties. Children with LI may not respond appropriately to treatment if they are unable to adequately understand program content. The current study examined the language skills of students at risk for internalizing behavior disorders and their ability to progress in the emotional resiliency training program *Strong Kids: A Social and Emotional Learning Curriculum for Students in Grades 4–8* (Merrell, Carrizales, & Feuerborn, 2004). The following research questions were asked:

1. Are the child's language production and comprehension (as measured by the *Clinical Evaluation of Language Fundamentals, Fourth Edition* [CELF-4; Semel, Wiig, & Secord, 2003]) and/or pragmatic language skills (as measured by the *Children's Communication Checklist, Second Edition* [CCC-2; Bishop, 2003]) related to the student's emotional/behavioral knowledge improvement based on a 20-item knowledge-based test administered prior to and following the *Strong Kids* curriculum?
2. Are the child's language production and comprehension (as measured by the CELF-4) and/or pragmatic language (as measured by the CCC-2) related to internalizing behavioral improvements reported by the *Teacher's Report Form* (TRF; Achenbach, 2001) and the 10-item *Internalizing Student Symptom Scale* (ISSC; Merrell & Walters, 1998) measured prior to and following the *Strong Kids* curriculum?

Review of Literature

Many studies show a link between language competence and emotion/behavior. The first topic that will be discussed in the review of literature is EBD and, in particular, internalizing behavior disorders. Following this, research revealing overlaps between EBD and LI will be discussed. Pragmatics, a major topic relating to the behavioral use of language in social contexts, will then be addressed. Subsequently, the emotional understanding and regulation of children with LI will be discussed. The connection between LI and withdrawal will then be examined in greater detail. Next, research examining the causes of the language/behavior overlap will be presented. Finally, concerns addressing the ability of children with language and internalizing behavior problems to make behavioral progress in a scripted emotional resiliency treatment program will be discussed.

Emotional Behavioral Disorders

EBD is a classification for children who experience behavioral problems. One way to classify children with EBD is to make a distinction between those who exhibit either externalizing or internalizing behavioral disorders. Achenbach (1997) distinguishes these groups by indicating that children with externalizing behaviors have conflicts with others while children with internalizing behaviors have disorders involving internal distress. The focus of the current study is the latter group, those children with internalizing problems. Children with internalizing problems may exhibit anxious/depressed behavior, withdrawal, or somatic complaints (Achenbach, 1997).

Internalizing behavior disorders are often more difficult to detect than externalizing behavior disorders because they are less observable. Because they are

directed inward, they may not demand the attention that more disruptive behaviors require. Although internalizing behaviors may be more difficult to detect, they are just as important to address. For this reason, it is important that children with internalizing behaviors not be overlooked. However, internalizing problems may have serious consequences. One illustration of this is the work of Finn, Pannozzo, and Voelkl (1995), who found that fourth graders who are withdrawn exhibit decreased academic performance that is similar to, or exceeding that, of children with disruptive behaviors.

The diagnosis for EBD is a lengthy and often difficult process. The diagnostic process generally includes behavioral observation techniques; parent, teacher, and student interviews; formal assessments of intelligence and academic achievement; and both formal and informal assessments of social and emotional functioning (Costenbader & Buntaine, 1999). Parent, teacher, and self-rating scales have also been used as preliminary screening instruments to identify students at risk for EBD (Nelson, Rutherford, Center, & Walker, 1991).

Merrell (2001) describes four types of specific disorders that generally comprise internalizing disorders: depression, anxiety, social withdrawal, and somatic or physical problems. Each of these problems is briefly discussed below.

Depression. The main characteristics of depression in children and youth include depressed mood or excessive sadness, loss of interest in activities, failure to make expected weight gains, sleep problems, psychomotor retardation, fatigue or lack of energy, feelings of worthlessness or excessive guilt, difficulty thinking or making decisions, preoccupation with death, irritability, and physical/somatic complaints (Merrell, 2001). Based on a review of the literature, Merrell (1999) concluded that 4–6%

of children suffer from depression serious enough to be considered a syndrome or disorder.

Anxiety. The major characteristics of anxiety include negative and unrealistic thoughts, misinterpretation of symptoms and events, panic attacks, obsessions and/or compulsive behaviors, physiological arousal, hypersensitivity to physical cues, fears and anxieties regarding specific situations or events, and excessive worries in general (Merrell, 2001). Achenbach (1997) observed that symptoms of depression and anxiety are often difficult to distinguish diagnostically due to the major overlap of both problems.

Social withdrawal. Social withdrawal is usually not a specific component of internalizing disorders but more of a byproduct that commonly accompanies anxiety, depression, and other internalizing behaviors (Merrell, 2001). Because of the wide variety of behaviors grouped under the heading of withdrawal, it is helpful to consider subtypes of withdrawn behavior. Three major divisions of solitary play discussed in the social psychology literature are *solitary-active withdrawal*, *solitary-passive withdrawal*, and *reticence* (Coplan & Rubin, 1998; Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Fujiki, Brinton, Morgan, et al., 1999; Lloyd & Howe, 2003; Nelson, Rubin, & Fox, 2005). These divisions are discussed briefly below. The topic of withdrawal will also be addressed in more detail later.

Solitary-passive behavior is defined as the “quiescent exploration of objects and/or constructive activity while playing alone” (Coplan et al., 1994, p. 130). It has been found that individuals exhibiting solitary-passive behavior experience some positive outcomes from this behavior. These individuals show competence in problem solving alone or with peers, task persistence, perform well with object-oriented tasks, and exhibit

good emotion regulation (Coplan et al., 1994; Coplan & Rubin 1998; Rubin, Chen, McDougall, Bowker, & McKinnon,1995; Rubin, Coplan, Fox & Calkins, 1995). However, it has been found that solitary-passive behavior has also been linked to peer rejection in later childhood (Coplan et al., 1994).

Solitary-active behavior is characterized by the production of "repeated sensorimotor actions with or without objects and/or by solitary dramatizing" while the child is in a social group (Coplan et al., 1994, p. 130). These children are actively isolated by their peers in social situations. The isolation caused by this behavior may result from the child's social anxiety and perceptions of social inefficacy, or "because of behavior that is noxious to the peer group" (Younger & Daniels, 1992, p. 958).

Reticent behavior is "typified by children who would like to interact with others but are fearful of doing so" (Fujiki, Brinton, Morgan, et al., 1999, p. 185). It is characterized by onlooking behaviors or appearing to be unoccupied (Coplan et al., 1994). Fear and anxiety in social contexts are thought to be a cause of reticence (Nelson, et al., 2005). Fujiki, Spackman, Brinton, and Hall (2004) suggested that children who exhibit solitary-passive and reticent behavior might become less skilled at joining and interacting within group social activities because over time they consistently choose solitary behavior over group interaction.

Lloyd and Howe (2003) studied multiple forms of solitary play and their relation to convergent and divergent thinking in children. Reticence, as compared with solitary-passive and solitary-active play, was found to have the greatest negative association with the child's divergent and convergent thinking skills and abilities. Additionally, reticent

children may be particularly at risk for developing social and social-cognitive problems later in life (Coplan et al., 1994).

Somatic or physical problems. Somatic problems in children and youth are often a key component of depression and anxiety disorders. These problems may involve oversensitivity to physiological cues. Common complaints in children include stomachache or nausea, headache, pain in eyes, pain in limbs or joints, or tingling sensations or numbness (Merrell 2001). Although these problems may not have a known medical or physical basis, the discomfort can be very real to the person experiencing the problem.

Language Impairment and Emotional Behavioral Disorders

The literature examining the overlap between language and behavior problems is extensive, and only a small sampling is presented here. Despite the use of a variety of methods, findings have been generally consistent. There is a higher than expected co-occurrence of language and behavior problems. Illustrative of this finding is Nelson et al. (2005). They estimated that two-thirds of students with EBD have overall or clinically significant expressive and receptive language deficits. Based on a review of literature, Redmond and Rice (1998) reported that a co-occurrence rate of LI and EBD of approximately 50–70% is commonly found. Cohen et al. (1998) studied the language, achievement, and cognitive processing of children with psychiatric problems and found that approximately 40% of the children in the study exhibited LI that had not been suspected prior to the assessment. Additionally, those children who had unsuspected LI were at risk for poorer academic achievement than their normally developing peers.

Benner, Nelson, and Epstein (2002) conducted a review of the literature available on LI and EBD. The articles that were reviewed identified LI using three classifications: receptive language disorders, expressive language disorders, and pragmatic language disorders. The children were diagnosed based on scores of one to two standard deviations or more below the mean on at least one language test or subtest. Among the children with an initial diagnosis of EBD, on average 71% experienced pragmatic deficits, 64% experienced expressive deficits, and 56% experienced receptive deficits. On average, 57% of children initially diagnosed with language deficits were identified as also having an EBD. In reviewing longitudinal studies, Benner et al. found that the rate of comorbidity between language deficits and EBD tended to either remain stable or increase over time.

Willinger et al. (2003) examined the behavior of children with developmental language disorders. The researchers studied children with LI between the ages of four and six years old. Using the *Child Behavior Checklist* (CBCL, Achenbach, 1991), the researchers found that 34% of children with LI exhibited behavior problems, while only 6% of the control subjects without LI exhibited behavior problems. The behaviors found most frequently to be a problem for the children with LI included withdrawal, somatic complaints, social problems, thought problems, anxiety/depression, attention problems, and aggressive behavior. Many of these problems found in the participants with LI are similar to the characteristics used to diagnose children with internalizing behavior disorders (e.g., withdrawal, somatic complaints, anxiety, and depression).

Qi and Kaiser (2004) studied the relationship between behavior and language in preschoolers enrolled in a Head Start program. The authors reported that preschoolers

with primarily expressive language disorders were more likely to exhibit internalizing behaviors, whereas children with receptive language disorders presented with more externalizing behavior. Conti-Ramsden and Botting (2004) studied children in middle school with specific language impairment (SLI). The results showed that the children with SLI experienced more internalizing behaviors than externalizing behaviors. In particular, the children were found to be more withdrawn and have less interacting time, lower popularity, and fewer friendships.

Children with a language deficit are more likely to be at risk for antisocial behaviors than children with speech or speech/language disorders. Language disorders and delays are psychiatric risk factors and children with receptive language deficits are more at risk for psychiatric disturbance (e.g., Cohen, Davine, Horodezky, Lipsett, & Isaacson, 1993; Toppelberg & Shapiro, 2000). In describing areas of language that children with LI often have difficulties with, pragmatics is essential to consider because of its relation to interpersonal competence (Bishop, Chan, Adams, Hartley, & Weir, 2000; Conti-Ramsden & Botting, 2004; Sanger, Maag, & Shapera, 1994). In order for individuals to form important social relationships, it is imperative that the needed language competency and social communication skills be in place. For these reasons, the area of pragmatic language is described in more detail below.

Pragmatic Language Impairment

Pragmatics specifically refers to the use of language in social contexts (Berko, 2005). Pragmatic language may be described from either a traditional or functional perspective. The traditional perspective divides language into three major components: linguistic form, content, and pragmatics. In the functionalist view, however, pragmatics is

the organizational structure in which both form and content are expressed (Fujiki & Brinton, in press). Pragmatic language deficits describe impairment in using appropriate language in varied social contexts. As such, these problems frequently constitute behavior problems, or make an important contribution to behavior problems (e.g., ignoring the questions of others, making off-topic comments). These deficits have also been observed in children with a traditional diagnosis of SLI (e.g., Brinton, Fujiki, & Powell, 1997). Some authors have considered pragmatic impairment (in the face of relative good structural language skills) to be a separate disorder, labeled as pragmatic language impairment (Bishop et al, 2000; Conti-Ramsden, Crutchley, & Botting, 2000).

Pragmatic skills of children with LI. There is an extensive literature examining the pragmatic skills of children with LI. Researchers have studied behaviors ranging from speech acts, to narrative production, to conversational skills (Bishop, Hartley, & Weir, 1994; Fujiki & Brinton, in press). One example is a study by Bishop et al. (2000), who examined the conversational responsiveness of children with SLI. Bishop et al. found that the children with SLI showed significantly less responsiveness in conversation. At the same time, it was also found that these children were less likely to use appropriate nonverbal gestures than their normally developing peers. That is, children with SLI were found to reply verbally before using more appropriate nonverbal communication. This finding is of particular interest because it runs contrary to the notion that a child with SLI would respond appropriately if he or she had the verbal and grammatical capacities to do so (Miller, 1991). Instead, it suggests that some individuals with LI may have a pragmatic language disorder independent of deficits in other language modalities.

Botting and Conti-Ramsden (2000) studied the behavioral and social difficulties of children with LI. Measures on peer competence, behavior, and cognition were taken twice, one year apart. The researchers found that the children with pragmatic language impairments exhibited marked peer competence difficulties. As well as having challenges regarding their ability to appropriately use language, children with pragmatic language impairments also suffer from social communication difficulties. Social communication is actually a broader concept, which pragmatics fits under (Fujiki & Brinton, in press). Because of this, there is a need to be more inclusive of a wider range of skills. These are described below.

Social communication. Adams (2005) argues that although social communication and pragmatics are often used interchangeably, a distinction is warranted. In fact, Adams suggests that pragmatics is one of four components that comprise social communication. The other three components include the following: social interaction, social cognition, and language processing (receptive and expressive). Fujiki and Brinton (in press) suggest that this view of social communication takes the focus off of specific speech and language behaviors and instead places the emphasis on the actual social interaction. Several studies have been conducted in order to look at these specific social interactions and the communication that takes place within them.

Hadley and Rice (1991) studied the conversational responsiveness of children with LI. They noted two findings with important social consequences. First, the children with LI were ignored by peers more often than their typically developing peers. Second, children with LI were more likely to ignore the initiation attempts of other children trying to converse with them. Hadley and Rice suggest that children with LI may be more likely

to be ignored because their typically developing peers may be unable to understand their language production. Additionally, children with LI may not respond appropriately to a conversational turn because they are unable to fully understand what their typical peers are saying to them due to their impairment. Rice, Sell, and Hadley (1991) also studied social interactions of preschool children with LI. They found that these children, even at an early age, made adaptations in their social communication. The children with LI were more likely to shorten their responses or use nonverbal responses. They also were more likely to initiate and engage in conversation with adults rather than their peers.

Craig and Washington (1993) studied children with SLI with regard to their ability to gain access to ongoing social situations. Typically developing children served as language-age and chronological-age matches for the children with SLI. For the study, two typical children were involved in a cooperative play interaction (building blocks) when a third child was brought into the room. The third child was introduced but not told what their role was in the interaction. The researchers found that all the typical children were able to gain access to the interaction. However, during the 20-minute interaction, three out of the five children with SLI did not gain access. The two children with SLI that did gain access did so through nonverbal strategies. These findings have been replicated by Brinton, Fujiki, Spencer, and Robinson (1997) and Liiva and Cleave (2004).

Marton et al. (2005) also investigated the social communication and structural skills of children with SLI. These researchers focused on negotiation, conflict resolution, and gaining access to ongoing interactions with peers. Children with SLI performed more poorly than their typically developing peers on both pragmatic and syntactic measures. Children with SLI used nonverbal strategies, rather than more appropriate verbal

strategies, during initiation and participation in social situations. The types of nonverbal interactional strategies used included both physically aggressive behaviors as well as withdrawn behaviors. For example, when in a situation requiring negotiation skills, the children with SLI would often defer to their partner or leave the situation before the conflict was resolved in order to avoid the negotiation process. These findings again demonstrate the overlap of socially withdrawn behaviors in children with SLI and provide additional validation of previous research (Brinton, Fujiki, & McKee, 1998; Craig & Washington, 1993; Rice et al., 1991).

Additionally, Marton et al. (2005) found that the children with SLI produced more inappropriate comments or questions in social situations than their typically developing peers. The children with SLI also had difficulty understanding their partner's perspective, as was evidenced by their failure to explain to their social partner reasoning for their choices or behavior. This ability to take the perspective of another person is a higher level task that requires intact skilled executive functioning abilities. Although the children with SLI used simple, grammatically correct expressions, they often used them inappropriately in varied social contexts.

McCabe and Meller (2004) studied preschoolers with and without SLI. They found that children with SLI were at risk for a number of negative social outcomes. Their study concluded that children with SLI had social skills that were generally less developed than children without SLI. The group with SLI was rated lower on assertiveness, but not on cooperativeness or self-control. Additionally the children with SLI were delayed in self-control, emotional knowledge understanding, and semantic processing of contextually meaningful information. The researchers concluded that the

speech/language-impaired children might be at a disadvantage for learning and cultivating socially competent behaviors required for successful peer interactions.

These studies indicate that children with SLI have difficulty interacting with their peers through both verbal and nonverbal communicative behaviors. It is likely that these social communication problems may result in problematic social outcomes. A variety of researchers have demonstrated that children with SLI experience such difficulties. For example, Fujiki, Brinton, and Todd (1996) administered the *Social Skills Rating System-Teacher Form* (Gresham & Elliott, 1990) to 19 participants with SLI and 19 peers with typically developing language. Children with SLI were less socially skilled than their typical peers. The children with SLI also had fewer social contacts and were lonelier than their typically developing peers. Fujiki, Brinton, Hart, and Fitzgerald (1999) also found that children with LI had fewer reciprocal friendships and were less accepted socially than their typical peers. This replicates the findings of Gertner, Hadley, and Rice (1994) that children with SLI are less well accepted.

Fujiki et al. (1996) study also demonstrated more problem behaviors than the typical children. Although the children with SLI were not previously identified as having emotional or behavioral problems, they were rated less favorably on these items than their typically developing peers. These findings indicate that individuals with SLI experience negative social outcomes in the form of problematic social outcomes. However, children with SLI are at risk for additional problems in related aspects of development. One such area is emotional competence. A number of research findings regarding emotional functioning of children with LI are discussed below.

Emotional Understanding and Regulation of Children with LI

Emotional functioning is a key aspect of human development. While language is an obvious source of social difficulties for these children, there is evidence that children with LI have difficulty with understanding and regulating emotion. This idea runs contrary to the traditional notion of SLI, which indicates that these children exhibit typical emotional development. The following studies have examined various aspects of emotional competence in children with SLI.

Ford and Milosky (2003) studied the ability of kindergartners with LI to infer emotional reactions from stories. The children identified the emotions that a character might experience given hypothetical situations that would result in the experience of four different emotions: happy, sad, angry, and surprised. The children with LI performed significantly more poorly than a group of typically developing language similar peers. All of the children were able to identify the emotions from line-drawn figures. However, when the emotions were placed in the context of an actual event, children with LI performed significantly poorer. Additionally, children in the group with LI were more likely to substitute emotions of a different valence (e.g., happy for mad) while children in the typically developing group were more likely to substitute emotions from a more similar valence (e.g., mad for sad).

Spackman, Fujiki, Brinton, Nelson, and Allen (2005) studied the ability of children with LI to recognize emotion conveyed by facial expression and music. Spackman et al. found that children with LI performed at the same accuracy as typical children in identifying facial expressions of happiness, sadness, anger, and fear. However, the children with LI performed significantly worse on identifying surprise and

disgust. Also, the children with LI performed more poorly than typical children in identifying emotion expressed in music excerpts.

Spackman, Fujiki, and Brinton (2006) replicated the Ford and Milosky study using children with LI between the ages of five to eight and 9 to 12 years of age. The researchers found that as a group, the children with SLI did not make valence errors that were observed in the younger children studied by Ford and Milosky. Older children were better able to infer the emotion experienced than younger children; however, children with SLI performed significantly more poorly than their peers with typically developing language.

The participants in the study were asked additional questions relating to the emotion being discussed, such as ‘How does it feel inside to be mad?’ The responses given by children with SLI were less complex in nature than the typically developing children. For example, children with SLI often gave responses that were inappropriate, restated the story event, or repeated the emotion. Spackman et al. (2006) point out that if children with SLI respond in this manner because of an inability to comprehend emotions in context that it could have a profound impact on their ability to interact appropriately in everyday social situations. It could affect their ability to empathize with their peers and to form close, positive relationships with others.

Fujiki, Brinton, and Clarke (2002) studied children with SLI and their typical peers between the ages of 6 and 10 years in order to determine if emotion regulation could play a role in the social outcomes in children with SLI. The researchers found that children with SLI were rated lower by their teachers on emotion regulation subscales than

were typically developing children. Specifically, the subscales rated lower for children with SLI were associated with withdrawn or internalizing social behaviors.

Fujiki et al. (2004) conducted another study to further the implications of the previous research. The researchers studied the relationship of language and emotion regulation skills to reticence in children with SLI. In particular, the researchers were interested in determining to what extent emotion regulation and language level could explain reticence in children with SLI. Teachers were asked to complete both the *Emotion Regulation Checklist* (ERC; Shields & Cicchetti, 1997, 1998) and the *Teacher Behavior Rating Scale* (TBRS; Hart & Robinson, 1996) in order to rate both emotion regulation and reticence. The results showed that the children with SLI were rated significantly lower in relation to both emotion regulation and reticent behavior. It was also found that language ability, coupled with emotion regulation skills, was a strong predictor of reticence. Emotion regulation and language explained 43% of the variance in reticence scores.

Boucher, Lewis, and Collis (2000) conducted a study in order to investigate the ability of children with autism and SLI to process familiar voices/sounds presented to them. The findings of the study were of particular interest because they were contrary to the researchers' original hypothesis. The researchers expected that the children with autism would experience difficulty distinguishing the emotion conveyed by a voice and matching the voice with pictures related to the emotion. The results indicated that the children with autism were not impaired relative to control groups. Furthermore, the performance of the children with autism was superior to the children with SLI. The children with SLI were found to be impaired on the tests that required them to match the

sound of emotion in a person's voice (e.g., happy, sad) to a picture depicting that emotion.

Although not all of the literature on emotional regulation and understanding has been discussed, these studies give a brief overview of the current research regarding this topic. These studies raise some interesting notions to consider regarding the emotional functioning of children with LI. It may be the case that children with LI have fewer opportunities to talk and learn about emotions and their functions due to lower language abilities. This may lead children with SLI to form ineffective interactional strategies (Rice, 1993). One of the strategies alluded to earlier that is commonly found in children with LI is withdrawal. Of particular interest is the overlap between the withdrawal found in children with LI and that of children who exhibit internalizing behavioral disorders.

Language Impairment and Withdrawal

There is reason to believe that children with internalizing behavior disorders may also have undiagnosed language problems because of the documented co-occurrence of these two problems (Cohen et al., 1998; Hart, Fujiki, Brinton, & Hart, 2004; Marton et al. 2005; Redmond & Rice, 1998). A particular kind of withdrawal, known as reticence, seems to be highly prevalent in children with LI (Fujiki, Brinton, Morgan, et al., 1999; Fujiki et al. 2004; Hart et al., 2004). This is troubling considering that reticence has few, if any, positive outcomes (Nelson, et al., 2005).

Fujiki, Brinton, Morgan, et al. (1999) assessed the withdrawn behavior of children with LI using the TBRS. Children with LI were found to be more withdrawn than their typical peers. Thirty-two of the 41 children with SLI demonstrated reticent behavior, thus making it the most frequently observed type of withdrawn behavior. The teachers

reported that children with LI wanted to interact and participate with their peers, but that they were too anxious, fearful, or inept to enter and stay in the interaction.

Conti-Ramsden and Botting (2004) looked at the social outcomes for children with SLI. Follow-up data were taken on the participants four years after initial data were collected. The children showed more withdrawn behaviors, less interaction time, lower popularity, and fewer friendships. The findings of this study support findings of other research (Brinton & Fujiki, 1999; Fujiki et al.,1999; Hart et al., 2004; Redmond & Rice, 1998).

Fujiki et al. (2002) studied the emotional regulation of children with SLI in order to determine its specific relationship to language competence. Children with SLI along with peer-matched individuals were rated by their teachers using the ERC. The researchers found that children with SLI were rated as having more difficulty in regulating their emotions than their peers with typical language. The children with LI had particular trouble in gearing up their emotions.

Hart et al. (2004) studied the relationship between social behavior and language ability in children with SLI. The participants were separated into groups according to the severity of their LI. An important finding of this research is that the degree of LI did not impact the amount of reticent behavior observed. Reticence was the most common type of withdrawal found in children with LI.

This finding suggests that reticence in children with SLI is not simply the result of poor language skills. It is likely that there are other behavioral limitations that are interfering with the child's ability to engage in successful interactions. Fujiki et al. (2004) proposed that reticence "more likely represents a fearful, anxious behavior that results

from the intertwining of language and emotional factors" (p. 644). This holds important implications for individuals with SLI because it gives evidence that SLI cannot be understood independent of emotional and social behavior. There are many other factors that need to be taken into account when considering the relationship between withdrawal and language.

Theoretical Frameworks of EBD and LI Overlap

As suggested by the discussion of withdrawal, it is difficult to determine the cause of the interaction between EBD and LI and to what degree each deficit influences the severity of the other. Several hypotheses have been proposed to explain the relationship between social behavior and language competence (Bishop, 1997). Some of these focus on problems that arise from processing. Others believe the problem stems from inadequate opportunities for social learning or the child's adjustment to the fact that the child cannot communicate effectively. Finally, it has been proposed that these problems stem from an impairment of social cognition.

Impairments in processing. One theory that accounts for the social/behavioral difficulties children with LI have may be due to overall cognitive limitations with regard to working memory and processing capacity (Bishop, 1997). Bishop points out that research has shown that children with LI have difficulty in integrating meaning from a series of sentences to build a coherent narrative. If the child has these types of problems, then it shows that they will have difficulty in processing all the needed information in order to conduct a successful social interaction with others. Additionally, recent research has shown that children with LI have difficulty with working memory. Javid (2006) found that working memory was shown to a significant factor for predicting reticence,

likeability, and prosocial behaviors. As the participants' working memory increased, reticence decreased, with likeability and prosocial behaviors increasing as well. This indicates that the processing abilities and working memory of children with LI may be responsible for the deficits that cause both the language and social/behavioral problems they experience.

Inadequate opportunity for social learning. Rice (1993) theorized that children with poor language skills are often socially rejected by peers. This leads to limited opportunities for the child to interact with their peers. In turn, this may result in the child failing to develop mature social cognition. As this cycle continues, it perpetuates the child's lack of opportunities to practice social, behavioral, and language skills, which leads the child to fall developmentally further behind his/her peers.

Social adaptation to poor communication skills. Redmond and Rice (1998) suggested that the social problems experienced by children with LI may be the result of these children's adaptation to poor communication skills. The Social Adaptive Model (SAM) suggests that the differences in behavior between children with SLI and their normally developing peers are caused by the "interaction between the children's primary language limitations, social context, and the biases people associate with limited verbal proficiency" (p. 689). This theory proposes that children with SLI develop compensatory behaviors as a result of limitations caused by language deficits. There are three main components of the child's social situation: the communicative demands of the situation, the child's verbal limitations, and the biases and behaviors of people within the child's environment. These components are filtered through the intact psychosocial system of the

child. This results in the child making social adjustments that continue to progress to actual social differences and limitations.

Deficits in social cognition. A third theory proposes that children with LI have language problems secondary to immature social cognition. This results in poor communication skills and social rejection by their peers (Bishop, 1993). Poor social cognition is a primary concern with children with autism. However, poor social cognition has also been found in children without autism. Conti-Ramsden and Botting (2007) studied the language skills, social cognition, and social outcomes of children with SLI. They found that there were clear associations between language and social cognition. This is important because an implication behind this relationship is that social problems may stem from deficits in social cognition.

Although it may not be possible to fully understand the exact relationship between behavior and language competence, it is important to attempt to understand the nature of the disorders in order to properly treat them. As more is learned about the nature and connection of language and behavior, professionals working with children with LI will have better resources of knowledge to draw upon when treating them.

Treatment Concerns for Children with EBD and LI

Fujiki, Brinton, Morgan, et al. (1999) point out that many interventions for children with social deficits are heavily language-based. As discussed previously, children with EBD are especially at risk for language problems. If the participants of the treatment program have weak language abilities, the treatment program may be ineffective. Benner et al. (2002) advocate that children receiving services for EBD should also be screened for language deficits. They also suggest that speech-language pathologists should be involved in designing effective interventions for these students.

Sanger et al. (1994) advocated that when special educators are involved in providing services for children with concomitant EBD and LI that speech-language pathologists should be included in the collaboration and development of the services. As both children with EBD and SLI are shown to have difficulty regarding academic achievement, it is especially pertinent that these children be given the most appropriate assistance possible in order to enable them to succeed. The current study took place in the context of an intervention study for children identified as being at risk for internalizing behavior disorders.

Method

The purpose of this study was to assess the language abilities of children enrolled in an emotional resiliency training program designed for children with internalizing behaviors. All of the participants were enrolled in *Strong Kids: A Social and Emotional Learning Curriculum for Students in Grades 4–8* (Merrell, Carrizales, & Feuerborn, 2004). The *Strong Kids* curriculum was employed as the social treatment. Although social skills intervention was not the specific focus, it was a critical component of the study.

The *Strong Kids* class is an educational curriculum specifically designed for individuals with EBD. It focuses on teaching children emotional resiliency and pro-social skills as well as promoting healthy social-emotional behavior (Merrell, 2004). This curriculum has been used in school-based settings in two pilot studies (Merrell, Juskelis, & Tran, in press). The first pilot study was conducted with students in a general education setting. The second pilot study was conducted with students who had been diagnosed with emotional disabilities. In both pilot studies, it was found that the students demonstrated an increased knowledge of healthy social-emotional behavior and decreased self-reported internalizing symptoms.

The students in this study participated in the *Strong Kids* curriculum for 50 minutes, twice a week, for six weeks. Participants were pulled out of classes during the intervention and taught as a group with individuals also identified as being at risk for internalizing behavior problems. The curriculum was taught by both elementary school and university staff. In order to measure the students' behavioral and knowledge-based

improvements as a result of the curriculum, the TRF, 10-item ISSC, and 20-item knowledge test, which will be discussed in more depth, were administered as a part of the *Strong Kids* study. For the purposes of the present study, successful improvements in these areas were examined with respect to the language ability of the participant.

Setting

This study was conducted at three elementary schools in two school districts in central Utah. The first school had a population of 695 students. Of these students, 86% were Caucasian, 12% Hispanic, and 2% were from other ethnic groups. The student to teacher ratio was 1:18. This school made adequate yearly academic progress as measured by federal requirements and with a national percentile of 50, scored in the 66th percentile for reading and the 71st percentile for math, as measured by the Stanford Achievement Test Series, 9th edition (SAT9). About 75 students were served for social and emotional needs during the 2005-2006 school year. These services were delivered by the school psychologist and were usually administered in small group or individual counseling sessions. As a preventative measure, the school psychologist presented four lessons targeting bullying and emotions in each classroom.

The second school had a population of 524 students. Of these students, 79% were Caucasian, 18% Hispanic, and 3% were from other ethnic groups. The student to teacher ratio was 1:21. This school also made adequate yearly academic progress as measured by federal requirements and scored in the 57th percentile for reading and the 65th for math, as measured by the SAT9. During the 2005-2006 school year, about 10 students received either small group or individual counseling. The school psychologist and classroom

teachers worked together to develop behavior plans and monitor the progress of each student.

The third school had a population of 613 students. Of these students, approximately 88% were Caucasian, 9% Hispanic, and 3% were from other ethnic groups. This school also made adequate yearly academic progress as measured by federal requirements and scored in the 40th percentile for reading and the 45th percentile for math as measured by the SAT9. During the 2005-2006 school year, six students at this school received psychological services as part of their individual education plans. About 25 other students were referred for small group counseling or parent consultation with the school psychologist. Teachers of an additional 35 students consulted with the school psychologist. Additionally, the school psychologist presented one lesson each month, in every class, to promote pro-social behavior.

A fourth school was initially included in the study. However, directly prior to the intervention beginning, the school unexpectedly withdrew from the study. This limited the number of participants the researchers were able to obtain. Due to the short notice of the school's withdrawal from the study, a replacement school was unable to be found that would fit within the timeframe of the study.

In this study, students participated in *Strong Kids* instruction in small group settings consisting of five to 10 members. The instructors at the first and third schools held the *Strong Kids* class in a conference room around an oval table. The students sat around the table while the instructors stood at the head of the table and used a white board mounted on the wall. The instructors did not use the overhead projector but students were seated close enough to look at handouts without projecting them. At the

second school, the instruction took place in an empty kindergarten classroom. Participants sat around a kidney table for the lessons.

Participants

The sample consisted of 15 fourth and fifth grade students. Of the participants, there were nine females and six males *(M* = 10;5, *SD* = 0;7). The chronological age of the participants was calculated at the time of language testing. The students came from the three schools in the Provo and Nebo school districts described previously. All of the participants were at risk for internalizing behavior disorders and were enrolled in *Strong Kids: A Social and Emotional Learning Curriculum for Students in Grades 4–8* (Merrell, Carrizales, & Feuerborn, 2004).

Instruments

The following assessments were administered to each participant:

1. *Systematic Screening for Behavioral Disorders* (SSBD; Walker & Severson, 1992).
2. *Clinical Evaluation of Language Fundamentals, Fourth Edition* (CELF-4; Semel, Wiig, & Secord, 2003).
3. *Children's Communication Checklist, Second Edition* (CCC-2; Bishop, 2003).
4. *Teacher's Report Form* (TRF; Achenbach, 2001) prior to and following the intervention.
5. A 20-item knowledge assessment relating to the *Strong Kids* curriculum prior to and following the intervention (Merrell, Carrizales, & Feuerborn, 2004).
6. A 10-item *Internalizing Student Symptom Scale* (ISSC; Merrell & Walters, 1998).

Each of these measures is described in detail below.

*Systematic Screening for Behavioral Disorders (Walker & Severson, 1992).*The SSBD is an assessment that is completed in three stages in order to screen students for either internalizing or externalizing behavioral disorders. In the first stage, teachers nominate groups of children whose characteristic behavior patterns most closely resemble profiles of behavior disorders occurring in the school setting. The teachers then rank these students according to their concern for the individual student's behavior. The second stage is a screening of students in terms of behavioral severity. The behavioral problems are defined using a series of ratings items. The third stage is a systematic observation of students in classroom and nonclassroom settings (Walker & Severson, 1992). However, the third stage of the SSBD was not conducted in this study due to a lower than anticipated number of students identified by this screening. Students were also included in this study at the recommendation of the school's behavior team. This was done in order to increase the amount of participants included in the study.

Clinical Evaluation of Language Fundamentals, Fourth Edition (Semel, Wiig, & Secord, 2003). The CELF-4 is a global assessment designed to identify, diagnose, and provide follow-up evaluation of language and communication disorders in students from 5 to 21 years of age. The CELF-4 contains 18 subtests that provide information on the following four levels of the assessment: identifying whether or not there is a language disorder, describing the nature of the disorder, evaluating underlying clinical behaviors, and evaluating language and communication in context. Four subtests were administered to the participants. The subtests administered included the following: Concepts and Following Directions, Recalling Sentences, Formulated Sentences, and Word Classes.

The sum of these subtests gave a Core Language Score for each participant. Additional information regarding reliability and validity of this measure can be found in the administration manual (Semel, Wiig, & Secord, 2003).

Children's Communication Checklist, Second Edition, (Bishop, 2003). The CCC-2 was developed to describe communication strengths and weaknesses in children within everyday settings, with a primary focus on pragmatic behaviors. The CCC-2 is a screening instrument for children ages 4 to 16 years who are likely to have LI. It employs a behavior rating scale format. The CCC-2 includes scales focused on speech, syntax, semantics, coherence, inappropriate initiation, stereotyped language, use of context, nonverbal communication, social relations, and interests. The checklist gives information regarding how the child behaves in actual settings and situations. The principal score for this measure is the general communication composite score. Additional information regarding reliability and validity of this measure can be found in the administration manual (Bishop, 2003).

Teacher's Report Form (Achenbach, 2001). The TRF is a teacher completed checklist, and is included in the BASC-2. The teacher ratings are used to evaluate the behavior of children and young adults age 2 to 25 (Reynolds & Kamphaus, 2004). Teachers rate their students on academic performance, adaptive functioning, and behavioral/emotional problems using a five point scale (with one being the lowest and five being the highest). This measure also gives additional information regarding internalizing, externalizing, and total problems.

20-item knowledge test (Merrell, Carrizales, & Feuerborn, 2004). This test is part of the *Strong Kids* curriculum. It was designed to be a pre- and post- measure to assess

the students' knowledge of healthy social-emotional behavior. The test contains five true and false questions and 15 multiple choice questions. This assessment has been found to be a sensitive measure in determining students' progress in the *Strong Kids* curriculum (Merrell, Carrizales, & Feuerborn, 2004).

10-item Internalizing Student Symptom Scale (Merrell & Walters, 1998). The ISSC is a 48-item self-report measure of depression, anxiety, and related affective and cognitive symptoms. It is normed for students in grades three to six. After an extensive literature review, the developers of the ISSC worked to compile possible items on the checklist according to content, readability, and redundancy. The ISSC addresses four general domains of internalizing disorders: depression, anxiety, somatic complaints, and social withdrawal (Merrell & Walters, 1998). For this study, the 10 item version of the ISSC was used.

Procedures

The first assessment completed was the SSBD. The first stage of the SSBD was completed by the teachers during a lunch meeting. Protocols were given to the teachers and returned to the researchers prior to the teachers leaving the meeting. Students at risk for internalizing behavior disorders were selected using either the SSBD or a recommendation from the school's behavior team. The behavior team included the principal, school psychologist, and teachers appointed by the principal. The students that qualified as being at risk for internalizing behavior disorders, as determined by the assessment of the behavior team, were included in the *Strong Kids* class.

During the first *Strong Kids* class session, the students completed both the 20-item knowledge assessment relating to the *Strong Kids* curriculum and the 10-item ISSC.

Both the TRF and the caregiver form of the CCC-2 were given to teachers and protocols of both measures were picked up from the teachers upon completion.

The CELF-4 was also administered to the participating children by one of five graduate and undergraduate Speech-language Pathology students. Once the students were selected to participate and their parental consent forms were returned, they were taken to a separate quiet room in the school that was away from other children for the administration of the CELF-4. Before the measure was administered, the tester provided the following instructions: “Today I have a test for you to take. It’s okay if you don’t know all of the answers, we just want you to do the best you can. Would that be okay?” Once the student gave the tester permission to proceed, the test was administered. The student sat at a desk opposite of the tester during the testing. If students were unwilling to participate, they were dismissed from the study. No students were unwilling to participate during the administration of the CELF-4.

During the final session of the *Strong Kids* class, the students completed the 20-item knowledge-based assessment as well as the 10-item ISSC again. Upon the ending of the *Strong Kids* class, the teachers completed the TRF for a second time. The TRF, ISSC, and the knowledge assessment were completed a third time six weeks following the completion of the *Strong Kids* class.

Data Analysis

Language Ability Groupings

Participants were divided according to overall performance on the CELF-4 and CCC-2. The scores on both tests can be found in Table 1. Both of the groups were divided using a split median. The lower scoring individuals were placed in the low-language group and the higher scoring individuals were placed in the high-language group. As determined by the CELF-4, there were eight participants in the low general language group and seven participants in the high general language group. The cutoff score for the low-language group was a standard score of 96. There were also eight participants in the low pragmatic language group and seven participants in the high pragmatic language group, as determined by the CCC-2. The participants with a standard score of 83 or below were considered to be in the low pragmatic language group. Six of the participants in this low group were at least one standard deviation below the mean. Two other participants in the low group were more than two standard deviations below the mean. Participants with a score of 89 or above were included in the high pragmatic language group. These groups were then compared, using the various measures of social and behavior performance. An independent-samples one-tailed *t*-Test was performed to determine the degree to which these language abilities were related to behavioral improvements.

Table 1

Clinical Evaluation of Language Fundamentals-Fourth Edition (CELF-4) Core Language and Children's Communication Checklist- Second Edition (CCC-2) General Communication Composite Standard Scores

Median Split Score for CELF-4		Median Split Score for CCC-2	
Participant	Standard Score	Participant	Standard Score
16	85	2	36
12	88	15	68
2	91	12	73
10	91	16	76
13	93	13	79
5	94	6	80
6	96	8	83
8	96	19	83
15	99	18	89
23	99	23	89
19	102	11	91
14	104	14	93
18	104	5	96
4	108	10	112
11	126	4	115
M	98		85
SD	10		19

Behavioral Measurements

The TRF total problem behavior scores, as well as the withdrawal/depression, social, and internalizing subtest scores, were analyzed for this study. ISSC and *Strong Kids* Knowledge Test scores were also included in the data analysis. The pre-and post-scores, shown in Table 2, were calculated according to behavioral changes the participants made prior to participation in the *Strong Kids* curriculum and immediately after the program concluded. The pre- and follow-up scores, shown in Table 3, were calculated according to changes made prior to the *Strong Kids* class and six weeks following the conclusion of the program. A negative change score on the TRF and ISSC indicated fewer negative behaviors. A positive change score on the *Strong Kids* Knowledge Test indicated improvement in knowledge of curriculum content.

Table 2

Differences Between Pre- and Immediate Post- Means on Measures of Social Behavior and Knowledge for Low- and High- Global Language Groups

Test	Low Language	High Language
TRF	Mean (SD)	Mean (SD)
Withdrawal	3.38 (8.42)	-5.57 (8.72)
Social	-1.63 (7.29)	-2.00 (4.12)
Internalizing	1.00 (7.09)	-4.29 (6.58)
Total Problems	.38 (5.78)	-3.57 (2.64)
ISSC	-1.06 (2.40)	-3.07 (4.49)
Strong Kids Knowledge Test	1.50 (5.21)	1.00 (3.74)

Note. TRF = Teacher's Report Form; ISSC = Internalizing Student Symptom Scale. For the TRF and ISSC, a negative mean score indicates behavioral improvement and a positive mean score indicates lower behavioral performance. For the Strong Kids Knowledge Test, a positive mean score indicates progress.

Table 3

Differences Between Pre- and Follow-up Means on Measures of Social Behavior and Knowledge for Low- and High- Global Language Groups

Test	Low Language	High Language
TRF	Mean (SD)	Mean (SD)
Withdrawal	-5.29 (6.37)	-6.50 (6.86)
Social	-4.14 (5.21)	-6.17 (3.87)
Internalizing	-6.14 (3.98)	-6.33 (2.73)
Total Problems	-4.71 (4.46)	-5.67 (4.55)
ISSC	-4.50 (2.99)	-0.50 (3.74)
Strong Kids Knowledge Test	2.14 (7.38)	1.20 (2.17)

Note.TRF = Teacher's Report Form; ISSC = Internalizing Student Symptom Scale. For the TRF and ISSC, a negative mean score indicates behavioral improvement and a positive mean score indicates lower behavioral performance. For the Strong Kids Knowledge Test, a positive mean score indicates progress.

Results

The means and standard deviations for the assessments that were used as dependent variables are presented in Table 2 and Table 3. Table 2 highlights the pre- and post-score differences of the participants according to language groupings determined by the CELF-4. Table 3 highlights the changes in score between the pre-and follow-up data collected according to language groupings also determined by the CELF-4. Comparisons of the high- and low-language groups, on the various social measures administered, will be discussed further.

Comparisons of the CCC-2 Language Grouping

The CCC-2 was administered to the participants to look at their general pragmatic functioning. Comparisons of the high- and low-language groups revealed that none of the differences produced by the various dependent variables were significant. Thus, the findings for the CCC-2 will not be discussed further.

Behavioral Improvements Reported by Teachers

The high- and low-language groups (based on the CELF-4 scores) were compared on each of the following measures: the TRF total, the TRF withdrawal subtest, the TRF internalizing subtest, and the TRF social subtest.

TRF total problem behavior scores. Although the high-language group produced greater gains than the low-language group, statistical comparisons were not significant. The data gathered prior to and directly after the treatment between the low- and high-language groups, $t(13) = 1.66$, $p = .061$, revealed a trend. The data taken prior to and six weeks following the treatment did not show a significant difference between the low- and high-language groups, $t(11) = .380$, $p = .355$.

TRF withdrawal subtest. The statistical comparison between the high- and low-language groups indicated that the high-language group performed significantly better than the low-language group based on data collected prior to and directly after the treatment t (13) = 2.020, p = .032. The data taken prior to and six weeks following the treatment did not show a statistically significant difference between the low- and high-language groups t (11) = .331, p = .374.

TRF social subtest. The data gathered prior to and directly after the treatment did not show a difference between the low- and high-language groups, t (13) = .120, p = .453. Additionally, the data collected prior to and six weeks following the treatment did not show a significant difference between the low- and high-language groups t (11) = .783, p = .225.

TRF internalizing subtest. The difference between the high- and low-language groups resulted in a notable trend, t (13) = 1.49, p = .080. The overall mean for internalizing behaviors of the low-language group showed less improvement than the high-language group. The data gathered prior to and six weeks following the treatment did not show a significant difference between the low- and high-language groups, t (11) = .099, p = .462. The internalizing behavioral improvements made by both groups during the second measure taken were comparable to each other.

Behavioral Improvements Reported by Student Participants

The ISSC results were taken into account during the data analysis in order to determine the participants' view of their own progress with regard to depression, anxiety, and related affective and cognitive symptoms. The high- and low-language groups did not produce a significant difference in treatment scores taken prior to and directly after

the treatment, t (13) = 1.102, p = .145. However, a significant difference between the low- and high-language groups was noted in the treatment scores taken prior to and six weeks following the treatment, t (11) = -1.862, p = .032. Contrary to expectations, this finding indicated that the low-language group had greater self-reported improvements than the high-language group.

Strong Kids Knowledge Results

The *Strong Kids* knowledge scores were included in the data analysis in order to determine if the language level was related to the participants' overall knowledge of the curriculum content. The high- and low-language groups did not produce a significant difference in knowledge test scores taken prior to and directly after the treatment, t (13) = .210, p = .418. However, the overall means between the two groups indicated that the low-language group had greater improvements than the high-language group. Similarly, knowledge test scores of the low- and high-language groups taken prior to and six weeks following the treatment were not significantly different, t (11) = -.007, p = .395.

Influence of Selection on Participant Performance

As mentioned previously, the students who were selected to participate in the *Strong Kids* curriculum were chosen by one of two criteria: a qualifying score on the SSBD or at the recommendation of the school's behavior team. A study conducted concurrently with this study found that the participants chosen on the basis of a qualifying score on the SSBD made significantly more behavioral improvements than participants selected solely on the recommendation of the school's behavior team. In the pragmatic language grouping, four of the eight participants in the low-language group

were selected by the behavior team. Three of the seven participants in the high-language group were selected by the behavior team. In the general language grouping, three of the eight participants in the low-language group were selected by the behavior team. Four of the seven participants in the high-language group were selected by the behavior team. No predictable pattern of performance was observed based on the selection.

Low Performing Students

A few participants performed very poorly on the CCC-2 pragmatic language measure. Participants 2, 15, 12, and 16 received standard scores on this measure of 36, 68, 73, and 76 respectively. Due to their poor performance on this measure, additional information regarding these participants is included below.

Participant 2. This participant received a standard score of 36 on the CCC-2 and a standard score of 91 on the CELF-4 and was included in both the low pragmatic and overall language groupings. Additionally, this participant was selected for participation in the study at the recommendation of the school's behavior team. With regard to withdrawal, the teacher reported no change in behavior when an immediate post- score was taken. When the TRF was administered six weeks after the treatment, the teacher reported that more withdrawal was observed. With regard to social behaviors, the teacher observed that the participant initially experienced fewer problematic social behaviors. However, when a six-week follow-up social score was taken, no change in social behaviors was noted, indicating that the participant was observed to have the same problematic social behaviors as noted prior to the treatment. With regard to internalizing behaviors, the participant was initially observed to have fewer internalizing behaviors than prior to the treatment. At the time of the six-week follow-up measure, the teacher

observed even fewer internalizing behaviors than at the time the initial post-score was taken. With regard to total problem behaviors, the teacher observed that the participant had fewer problem behaviors at the time the initial and six-week follow-up measures were taken. The student initially reported more problem behaviors, but reported less at the time of the six-week follow-up measurement.

Participant 15. This participant received a standard score of 68 on the CCC-2 and standard score of 99 on the CELF-4 and was included in the low pragmatic and high overall language grouping. Additionally, this participant was selected for participation in this study because of a qualifying score on the SSBD. At the time of the initial post-measurements, the teacher observed that the participant experienced fewer problems with withdrawal, social behaviors, internalizing, and total problem behaviors. However, at the time the six-week follow-up measure was taken, the teacher reported that while the child still had fewer behavior problems with regard to social, internalizing, and total problem behaviors, that these problems had increased since the time the initial post measure was taken. The teacher reported that the participant's withdrawal had increased and was higher than prior to the treatment. The student initially reported fewer problem behaviors, but reported more at the time of the six-week follow-up measurement.

Participant 12. This participant received a standard score of 73 on the CCC-2 and a standard score of 88 on the CELF-4 and was included in both low pragmatic and overall language groupings. Additionally, this participant was selected for participation in this study because of a qualifying score on the SSBD. At the initial post measurement, the teacher reported that this participant had fewer social and internalizing behaviors, a large increase in withdrawal, and no change in overall total problem behaviors. At the time of

the six-week follow-up measurement, the teacher reported that the participant exhibited fewer problems in withdrawal, social behaviors, internalizing, and total problem behaviors than prior to the treatment. The participant self reported fewer problem behaviors at the initial and six-week follow-up post measurements.

Participant 16. This participant received a standard score of 76 on the CCC-2 and a standard score of 85 on the CELF-4 and was included in both low pragmatic and overall language groupings. Additionally, this participant was selected for participation in this study at the recommendation of the school's behavior team. For the initial post measurement, the teacher reported that this student had fewer social problems, but increased withdrawal and internalizing problems, and no change in overall total problem behaviors. At the time of the six-week follow-up scores, the teacher reported that the student had made no improvements in withdrawal, social problems, and overall total problem behaviors from prior to the treatment. The teacher did report a slight improvement in internalizing behaviors from prior to the treatment to when the six-week follow-up measure was administered. The participant self-reported no change in problem behaviors at the times the initial and six-week follow-up measurements were taken.

Discussion

The purpose of this study was to determine the influence of the students' language abilities on their capacity to make behavioral and social/emotional gains as a result of the *Strong Kids* intervention. Many of the statistical analyses completed did not reveal significant findings. However, there were some significant differences and trends in the data. These results are discussed further as it addresses the impact of the participant's language abilities on their improvements made in the curriculum.

TRF Findings

The TRF is a behavioral assessment that taps into overall problem behaviors as well as individual categories of behavior that specifically address withdrawal, social problems, and internalizing problems. The findings of interest regarding this measure are discussed below.

Total problem behavior findings. A comparison of the total problem behavior score of the low and high-language groups, determined by CELF-4 scores, indicated a notable trend, with the difference between the groups nearing statistical significance, $t(13) = 1.66$, $p = .061$. The overall mean of scores between the two groups, as reported in Table 2, showed that the lower language group made fewer behavioral improvements than the higher language group. Additionally, the means of these two groups indicated that the participants in the lower language group had more overall problem behaviors while the higher language group experienced fewer overall problem behaviors following completion of the *Strong Kids* curriculum.

This finding suggests that children with lower language abilities may have a more difficult time in understanding and processing curriculum content in order to make

adequate behavioral improvements. These findings support the concerns expressed by many researchers regarding the ability of children with varying levels of linguistic competence to take advantage of social skill instruction (Fujiki, Brinton, Morgan, et al., 1999). However, as shown in Table 2, there was a high level of variability within the data, as indicated by the standard deviations for the total problem behaviors of the TRF as well as its subtests. This may suggest that the participants need to be examined on an individual basis in order to fully determine their level of improvement, rather than being placed within groups.

Withdrawal findings. The resulting improvement scores of the participants for the first pre- and post-tests showed significantly different scores between the higher and lower language groups. As was found in looking at the total problem behavior means of the participants, the higher language group experienced less withdrawal while the lower language group experienced higher rates of withdrawal behaviors following the *Strong Kids* curriculum. This finding is of particular concern because it shows that the children who are already at a greater risk for withdrawal, because of their language difficulties, actually experienced negative progress that was significantly different from the higher language group. These findings are preliminary, but suggest that attention may need to be focused on helping students with language limitations to fully understand what is expected of them and how they can accomplish the curriculum goals.

Internalizing findings. The findings of the first pre- and post-scores of the internalizing subtest of the TRF were similar to the first pre- and post-scores of the total problem behaviors. Although the differences between the higher and lower language groups were not found to be significant, the resulting difference suggested a trend,

$t(13) = 1.49$, $p = .080$. Additionally, the means of both groups showed that the higher language group had fewer internalizing behaviors reported while the lower language group actually had increased internalizing behaviors following the treatment. Similar to the withdrawal subtest findings, it is of particular concern that children with language difficulties who are already at risk for internalizing behaviors experienced an increase in these problem behaviors following the treatment.

ISSC Findings

The ISSC used in this study was completed by students based on their perception of their progress from the *Strong Kids* curriculum. There was not a significant difference between the higher and lower language groups on the first pre- and post scores. A significant difference was found between the pre- scores and the scores obtained six weeks following the conclusion of the treatment, however. It was interesting that, contrary to expectations, the students in the lower language group reported more improvement than students in the higher language group. This difference should be considered with respect to the fact that the mean scores of the TRF indicated that the participants in the lower language group actually experienced less improvement than the higher language group. One explanation for the observed differences between the self and teacher reported measure may be found in the difficulty that children with poor language skills have in reporting their own progress. It may be the case that the children with poorer language skills had a difficult time accurately assessing their own level of competence (see Jerome, Fujiki, Brinton, & James, 2002, for discussion).

Low Performing Students Findings

The examination of the low performing students' behavioral improvements, as measured by the TRF and ISSC, was inconclusive due to the great amount of variability found within the four subjects' scores.

Pragmatic Language Group Findings

The total pragmatic scores obtained from the CCC-2 revealed notable variability between participants (see Table 1). However, the data analysis did not reveal any significant differences between the students in the low and high pragmatic language groupings. It may be the case that pragmatic problems do not impact the treatments. It is also possible that the analysis of the pragmatic problems was not accurate. It is of importance to note, though, that seven of the fifteen participants (47%) exhibited pragmatic difficulties at least one standard deviation or greater from the mean. So although there were no statistical differences determined by behavioral performance between the higher and lower pragmatic language group, there were significant differences in these participants' pragmatic functioning from that of their peers. This finding is consistent with previous research indicating that children with a previous diagnosis or risk of behavioral problems are also at risk for pragmatic language deficits (Benner, Nelson, & Epstein, 2002).

Suggestions for Future Research

The findings of this study are only preliminary. Many aspects of the impact of language skills on social skills training remain to be studied. One suggestion for future research would be to conduct further studies on this population with a larger number of participants. The small number of children studied limited the statistical power and may

have contributed to the non-significant findings. A second limitation of the current study was the lack of a control group. The initial design of the study included control participants. The decision by one of the participating schools to withdraw from the study made it impossible to replace these children in a timely manner.

A third limitation was the limited amount of time available to collect data on the participants. It would be helpful to collect more observational data that could have been used in conjunction with the formalized testing in order to increase the reliability of measurement.

Another area that would be of interest to study could be to reverse the method of selection used in this study. Instead of looking for students at risk for EBD, students could be selected based on their language ability. Emotional/behavioral testing could then be conducted to determine if they would qualify and could benefit from such social treatments as *Strong Kids* as an aspect of their comprehensive treatment programs. Hopefully with continued research, children that have LI or EBD will continue to receive better, more researched-based services that will help them to make the necessary improvements that are vital to their academic as well as social success.

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Appendix A

Informed Consent

Dear Parent,

This letter is to inform you that your child has been identified as a potential participant in collecting comparative information for a study that is taking place in child's school _____. This study is to investigate how the responsive language skills of children within a classroom compare to each other.

If you consent to your child's participation, your child will complete a formal language assessment and a 20-minute interview with an adult who will ask 10 simple and 10 more complex questions during the conversation. These conversations will be recorded using an audio recorder to ensure accuracy when looking at the answers the student gives. The recording will be kept strictly confidential and will only be available to individuals directly involved in analyzing the information.

The only possible risks to subjects is that of being absent from the general education classroom for approximately 1 ½ hours for the initial assessments and for 20 minutes after the curriculum has ended. This may cause missing out on activities and learning with their general education peers. The possible benefits include adding to a base of research that can help teachers learn about possible risk factors that contribute to language skills.

Any information on your child will be kept completely confidential. Only researchers will have access to your child's scores and outcomes. All comparisons and data analysis will be done using a number assigned to your student. No identifying information will be available as a result of this study.

If you have any questions please contact the researcher, Shelby Hansen. shelbyck@gmail.com (801) 310-7431.

_ _

Date_____

I _____ give permission for _____

(Name, please print) (Child, please print)

to participate in the research study outlined above. I have read and understand the possible risks and benefits to my child. I, the undersigned am

____Parent _____Legal guardian for the above named student.

I give consent to have my child's responses during the 20-minute conversations audio recorded: _____ Yes _____ No

Signature_____