Emotion Regulation Theory and Interventions for School-Aged Children with Autism Spectrum Disorder

Kara Dalena

A Thesis

in

The Department

of

Education

Presented in Partial Fulfillment of the Requirements

for the Degree of Masters of Arts (Child Study) at

Concordia University

Montreal, Quebec, Canada

July 2016

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

By: Kara Dalena

Entitled: Emotion Regulation Theory and Interventions for School-Aged Children with Autism Spectrum Disorder and submitted in partial fulfillment of the requirements for the degree of

Master of Arts (Child Studies)

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the final examining committee:

Ailie Clegorn Chair

Elsa Lo Examiner

Miranda D'Amico Examiner

Hariclia Petrakos Supervisor

Approved by Richard Schmid

Chair of Department

André Roy

Dean of Faculty

Date July 27, 2016

ABSTRACT

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Kara Dalena

As seen in previous literature, children with Autism Spectrum Disorder often struggle with regulating their emotions and prosocial coping strategies (Beeger et al., 2008; Beidas et al., 2010; Domitrovich et al., 2007; Erbas et al., 2013; Gould et al., 2011…Yeo & Choi, 2011). The inability to regulate emotions and apply prosocial coping strategies often result in problem behaviors in the classroom and among peers. Understanding and examining how students with Autism Spectrum Disorder (ASD) perceive their emotions as well as others' emotions can help us understand what intervention is necessary to improve their emotion regulation. In particular, teaching these students about theory of mind, emotion differentiation, and perspective may help them improve their emotion regulation (Gould et al., 2011; Hammond et al., 2009). Teaching these children prosocial coping strategies may ultimately decrease problem behaviors in the classroom (Jahromi et al, 2013).

This research study aimed to explore how children with ASD perceive their emotions, as well as others' emotions. Additionally, this research focused on children's emotion regulation and provided them to practice prosocial coping strategies. In collaboration with Sunshine School, the school staff, an intervention centered around emotional awareness was put in to place. Four students between the ages of 8 and 10 years old, with Autism Spectrum Disorder participated in this intervention. These participants were interviewed in order to understand how these children perceive their emotions and then completed the emotion regulation intervention created by the

researcher. Each participant also completed a Video-Self Model (VSM) to implement prosocial coping strategies. The classroom teachers were asked to complete a rating scale in order to measure social skills and problem behaviors.

This qualitative analysis used grounded theory to explore themes related to emotion regulation as well as emerging themes from the interviews, drawings, observation and field notes. Findings were consistent with previous research; children with ASD struggle with emotion regulation and lack the possession of prosocial coping strategies (Jahromi et al., 2012; Jahromi et al., 2013; Landy & Bradley, 2014). More importantly, these children have difficulty differentiating between emotions, understanding the perspective of others, and often struggle with coping with emotional conflicts. Findings showed a positive change in each participant's emotion regulation after participating in the intervention. Additionally, children showed a positive change in understanding prosocial coping strategies.

Acknowledgments

This rewarding and inspirational journey has come to an end and I couldn't have completed my thesis without the help of several people. I would like to express my full gratitude to everyone who provided support and guidance throughout this process. Most importantly, to my thesis supervisor, Dr. Harriet Petrakos, who provided with me with constant inspiration, guidance, support, expertise, and empathy throughout this journey. Dr. Petrakos provided endless encouragement, patience, and support. Her caring and supportive character made this journey pleasant and enjoyable. It was an honor to have her as my thesis supervisor. I am also very much obliged to my thesis committee members, Dr. Miranda D'Amico and Dr. Elsa Lo, who provided me with insight, useful comments and feedback, and valued suggestions. Dr. Petrakos, Dr. Lo, and Dr. D'Amico, I have always valued and respected you as educators and mentors and I am very grateful and honored to have you on my committee and to share this experience with me.

A special thank you to my internship student and partner Sara Parisse, I couldn't imagine working with anyone else by my side, we made a great team and you provided me with constant emotional support. I would also like to thank the families and participants who agreed to participate in this intervention, as well as the staff at Sunshine School. Without your commitment and support, this thesis would have never been completed. Thank you for sharing your time and creating this experience with me.

Last but certainly not least, I would like to thank my family and my friends. To my parents, John and Kim Dalena, for your constant encouragement, always believing in me, and always being supportive of my dreams. To my friends and coworkers for their support, encouragement, patience, and helping me stay focused, I am more than appreciative.

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Introduction and Problem Statement

Emotions are critical to development and can influence a child's internal and external behavior. The ability to regulate our emotions is an important component of adapting prosocial behaviors. Emotion regulation (ER) refers to a set of developmental skills to support an individual to manage emotions during various social situations (Landy & Bradley, 2014). ER creates understanding and allows the ability to label feelings and manage expression of emotion (Landy &Bradley, 2014). Additionally, ER affects the way in which a person expresses their own emotions, as well as how often she/he is aware of these emotions (Hammond, Westhues & Hanbridge, 2009). There are three processes of emotion regulation: emotional awareness, emotional coping and expression management (Hammond et al., 2009). Cognitive deficits are known to limit a child's ability to regulate emotions as well as control certain anger and frustrations that he/she experience (Johnson et al., 2012). Therefore, children who display cognitive deficits and developmental disorders such as Autism Spectrum Disorder (ASD) can display the same deficits in their peer interactions and relationships (Lynn, Carroll, Houghton, & Cobham, 2013).

ASD is a neurodevelopment disorder which consists of a group of developmental disorders expressing symptoms that range from mild to severe (Lauritsen, 2013). According to the fifth edition Diagnostic Statistical Manual (DSM-5) criteria for ASD, children with ASD display deficits in various areas of development such as social communication, social-emotional reciprocity (the ability to engage and interact with others and share beliefs and feelings), and social interaction across multiple contexts and environments. Difficulties in these given areas explain why children with ASD would have difficulties with emotion regulation. The inability to identify, to differentiate, and to perceive emotions can hinder a child's social development.

These difficulties are often seen in the classroom which is a context that requires a high level of emotion regulation (Lynn et al., 2013). Subsequently, it is important to recognize that children with ASD who display symptoms on that the spectrum, show individual strengths and weaknesses in these social communication areas. These individual differences become important in the implementation of an intervention. Therefore, it is important that the intervention would be individualized because of these differences.

As previously mentioned, children with ASD are on a spectrum, with a wide variation of symptoms of communication; therefore, some children with ASD function at a higher level. It is important to note that the intervention required for the current study requires more language and higher intelligence in order to benefit from the intervention. Therefore, research studies which include children with high functioning ASD will be examined.

Review of the Literature

Research shows that all children including those with ASD can in fact learn how to control their emotions (Hammond, et al., 2009). It is important for children to develop positive emotion regulation strategies in order to enhance their social functioning as well as their academic achievement (Hammond et al., 2009). Evidence related to the short term effectiveness of the interventions that are being implemented in order to enhance a child's emotional functioning as well as ultimately reducing the amount of problem behaviors displayed in the classroom is growing - (Hammond et al., 2009). However, there is still a significant demand for implementing evidence-based preventive interventions with children who display emotional and behavioral difficulties such as children with developmental disorders (such as ASD) in order to reduce the risk of these children developing maladaptive behaviors and to enhance their overall

social and emotional competence (Kam, Greenberg & Kusché, 2004). Effective emotional regulation is critical to a children's development. Developing skills in labeling emotions, understanding feelings, emotion awareness, and managing emotions is not always easy for many children (Landy & Bradley, 2014). Therefore, it is important to continue to research which interventions will best promote these skills in order to support the children's development, especially in children with ASD.

The present review will explore the different interventions and strategies used to promote emotional regulation among children who display social, emotional and behavioral difficulties and more specifically children with high functioning ASD. The goal of this study will be to examine these interventions and strategies in order to design an intervention that is most beneficial for these children. Additionally, these interventions may facilitate the promotion of emotional awareness as well as provide beneficial coping strategies to ultimately improve the child's social and emotional experience in the classroom.

The specific emotional regulation themes that will be examined are: identifying emotions, theory of mind (TOM), emotion differentiation, perspective taking, responding to emotions, and finally, coping strategies. Direct instruction and video modeling will be the focus of these interventions. Finally, this review will discuss emotional-awareness and, more specifically, how responding to emotions is critical to the development of emotional cognition. The best practices and interventions will be discussed, ideas for future research will be stated, and finally, the study will explore the impact of an intervention for children with high functioning ASD.

Understanding Emotions

Identifying emotions (theory of mind). The ability to label and identify emotions is a key component in understanding emotions. Labelling emotions requires a combination of introspective information, the child's own behavioral observation, and verbal information that is provided by others (Rieffe, Meerum-Terwogt, & Kotronopoulou, 2007). Children with ASD often display difficulties understanding the emotional and mental states of others (Golan, Ashwin, Granader, McClintck, Day, Leggett, & Baron-Cohen, 2010). Without a fully functional theory of mind (TOM) it is questionable whether children with ASD are able to develop at the same rate as typically developing children (Rieffe et al., 2007). Additionally, ASD has been associated with impairments of processing one's own emotions as well as others' emotion (Erbas, Ceulemans, Boonen, & Noens, 2013). Specially regarding theory of mind, children with ASD display impairments in connecting mental states such as intentions and others beliefs (Erbas et al., 2013). Additionally, children with ASD are known to neglect others' emotional expressions (Rieffe et al., 2007).

Theory of mind is an aspect of social cognition in which children typically develop between the ages of 2- and 4-years old (Landy & Bradley, 2014). When a child has developed TOM, he/she understand that other people possess different thoughts, beliefs and feelings that might differ from their own (Landy & Bradley, 2014). TOM is critical to a child's development, social interaction, and building relationships (Landy & Bradley, 2014). Without TOM, children with ASD are more likely unable to create self-evaluations (Rieffe et al., 2007). In a study conducted by Peterson, Slaughter and Paynter (2007) it was suggested that impairments in TOM were a result of poor social maturity. Therefore, if a child displays the ability to understand TOM then he/she is more likely to display social maturity (Peterson et al., 2007).

Additionally, children with ASD display impairments in inferring and differentiating others' emotional states from their facial expressions, body language, and tone of voice (Erbas et al., 2013). Children with ASD process faces differently than typically developing children, which results in reduced attention towards faces and facial expressions (Golan et al., 2010). This could be the result of the emotional information that is often portrayed through human eyes as well as their facial expression, which is difficult for children with ASD to read (Golan et al., 2010). Another reason why children with ASD struggle with facial expressions is that they may not find others facial expression intrinsically rewarding; therefore their lack of interest in a person's facial expression results in not developing into a *face expert* like typically developing children (Golan et al., 2010). Additionally, children with ASD tend to focus more on a person's mouth than the eyes during social interactions, mainly because they are trying to obtain verbal information and the fact that children with ASD are more feature-based and have a preference for mouths (Golan et al., 2010).

Theory of mind is not only the ability to decipher facial expressions, but also body language, prosody, and verbal expression. Linder and Rosen (2006) examined the ability of decoding emotions among children with ASD. This study showed that children with ASD displayed difficulties identifying emotions from facial expression as well as prosody (Linder & Rosen, 2006). This study also suggested that children with ASD can be dependent on verbal content in order to decode emotions (Linder & Rosen, 2006). Furthermore, suggesting the importance of teaching identification of facial expression along with prosody in order to understand emotions. Additionally, educating children with ASD on how to interpret different behaviors through body language, prosody, and verbal expression can benefit generalization of these skills. Children with ASD often struggle with generalization; therefore increasing the

amount of strategies applied during a particular intervention can better predict that children with ASD will better apply skills they have been taught not only in the classroom but also at home and other various social situations.

It is important to remember that children with ASD are on a spectrum, therefore levels of emotion cognition and language skills will vary among each child and require different levels of instruction. According to the study conducted by Rieffe et al. (2007) children with ASD display impairments in identifying their own emotions but also display impairment in the ability to differentiating emotions in others. Therefore, teaching emotion differentiation becomes a critical component to emotion cognition.

Emotion differentiation. Emotion differentiation is the ability to understand or possess knowledge of one's own emotions and the ability to differentiate between different emotional states (Erbas et al., 2013). Emotion differentiation is the ability to describe how one is feeling and the knowledge of specific antecedents and consequences related to one's emotions (Erbas et al., 2013). Children with ASD are often characterized as displaying lower levels of emotion differentiation, meaning that they have less knowledge of their own emotions (Erbas et al., 2013). Additionally, emotion differentiation prepares children to differentiate one emotional state to another and display appropriate emotion regulation. Part of being able to differentiate between emotions is the ability to recognize internal cues such as, sweating palms or a racing heart. The understanding of these internal bodily cues will promote generalization of their emotions.

Erbas et al., (2013) examined how much knowledge children with ASD had about their own emotions by investigating their ability to differentiate between emotions. Results indicated that children with ASD differentiated less than typically developing children (Erbas et al., 2013).

In addition, Brown, Morris, Nida, and Baker-Ward (2012) conducted a study that examined autobiographical memory in children with ASD. Results of this study indicate that children with ASD included fewer emotional, cognitive, and perceptual terms compared to typically developing children among their personal narratives (Brown et al., 2012). Goldman (2008) also conducted a study in which examined personal narratives and children with ASD. Findings from this study revealed that children with ASD used factual information in their personal narrative in that lacked interpretations or understanding of their emotions (Goldman, 2008). Finally, results from these studies suggest that since children with ASD display difficulties in emotion differentiation and identifying emotions from within they are therefore unable to obtain proper self-awareness, TOM, and perspective taking.

Perspective taking. Perspective taking is a complex set of cognitive processes which creates the ability to infer the mental states of others (Gould et al., 2011). Similar to TOM, perspective taking is an important social capacity that allows a person to listen and understand points of view (Landy & Bradley, 2014). Additionally**,** perspective taking is the ability to take the perspective of another person and relate it to one's current social situation in order to create a successful social situation with successful skills (Gould, Tarbox, O'Hora, Noone, & Bergstrom, 2011). It is important to understand that perspective taking is an important skill for successful social situations and is the process of inferring another person's beliefs and wants in order to interpret that persons behavior and predict what they will do next (Gould et al., 2011).

As mentioned, children with ASD display impairments in their ability to understand other's emotions and mental states and how they are related to their explicit behaviors (Gould et al., 2011). Deficits in perspective-taking are the core deficit of social communication and imaginative impairments displayed in children with ASD (Gould et al., 2011). The ability to take

turns, to share, and to show empathy is all part of perspective taking (LeBlanc et al., 2003). Perspective taking is the process of first observing other's behaviors in any given situation, followed by predicting that individual's subsequent behaviors or responding with appropriate private thoughts or emotions that an individual might typically experience (LeBlanc et al., 2003). Children with ASD often display impairments with false-belief tasks and often do not develop the appropriate social behaviors such as sharing, turn taking, or showing empathy (LeBlanc et al., 2003). Additionally, perspective-taking has received little research attention in comparison to TOM (Gould et al., 2011). Since perspective-taking is a deficit in which children with ASD present, there should be more research conducted.

Charlop-Christy and Daneshvar (2013) conducted a study that examined the effectiveness of implementing video modeling in order to teach perspective taking-tasks to children with ASD. Video-modeling is a process that records the child maximizing a targeted behavior; the video is then edited to eliminate any unwanted behaviors in order to provide a video of desired behaviors (Schmidt & Bonds-Raacke, 2013). The child then watches the video in order to model the desired behavior (Schmidt & Bonds-Raacke, 2013). In this study, video modeling was a fast and effective technique for teaching perspective taking and many generalizations were observed (Charlop-Christy & Daneshvar, 2013). Additionally, LeBlanc et al., 2003 also conducted a study that examined the effectiveness of video modeling in teaching perspective taking among children with ASD. The results of this study also indicated the effectiveness in video modeling on perspective taking and as long as researchers continue to develop these strategies generalization of these skills will improve (LeBlanc et al., 2003).

Responding to Emotions

Coping strategies. A detrimental aspect of emotional cognition is how one responds or copes with an emotional experience. Coping is how one responds appropriately to emotion. A child who is not able to regulate his/her emotions tends to display internalizing and externalizing behaviors as a result of poor coping strategies (Landy & Bradley, 2014). In the study conducted by Jahromi Meek, & Ober-Reynolds (2012) the various coping strategies used for emotion regulation are discussed; these strategies include constructive strategies (goal-directed actions and social support), venting strategies (vocal, physical and self-talk), and avoidance strategies (avoidance, distraction). This study, which examined ER when faced with frustration, children with high functioning ASD displayed more venting and avoidance strategies and fewer constructive or instrumental strategies when coping compared to typically developing children (Jahromi et al., 2012). The study suggested that children with high functioning ASD were not successful in regulating their frustration, therefore displaying inadequate coping strategies, and suggesting the inability to cope across various emotional contexts (Jahromi et al., 2012).

As previously mentioned, children with ASD often display poor social maturity (Peterson et al., 2007) which results in problematic behaviors presented in the classroom and among peers which is why teaching prosocial coping skills along with emotion cognition is necessary. Children with ASD are more emotionally immature which inhibits their ability to create appropriate coping strategies which results in poor internalizing and externalizing behaviors. Therefore, future studies should not only examine emotional regulation, but also appropriate coping strategies in order to diminish these behaviors. Additionally, teaching prosocial skills will help eliminate these immature and impulsive social responses. Prosocial behaviors are seen through displaying various caring behaviors and empathy such as, helping others, sharing, comforting, feeling concern or distress for others, as well as cooperating with others (Landy &

Bradley, 2014; Jahromi, Bryce, & Swanson, 2013). Prosocial behaviors are important in classroom adaptation and in creating supportive peer relationships with classmates (Jahromi et al., 2013). Children with ASD typically display fewer positive peer relationships within the classroom which is why the understanding of the role that self-regulation plays in encouraging prosocial behaviors is critical in improving their peer relationships (Jahromi et al., 2013). It is important to note that these children must first learn how to identify emotions through TOM, emotion expression and perspective-taking in order to adapt appropriate coping strategies.

Emotion Regulation Interventions and Themes

Promoting Alternative Thinking Strategies (PATHS)

The focus of the Promoting Alternative Thinking Strategies (PATHS) program is on expression, understanding, as well as the regulation of a broader range of emotions during early childhood (Bidgood et al., 2010). The goal of PATHS is to develop social problem solving through the use of self-control and emotional awareness (Bidgood et al., 2010). PATHS has been found to increase children's ability to discuss their emotions as well as their self-efficacy in displaying their emotions (Bidgood et al., 2010). Additionally, the main focus of the PATHS intervention is to increase emotional awareness and emotion regulation skills during early childhood, as well as integrating skills in self-control with social problem-solving skills in a classroom setting (Domitrovich, Cortes & Greenberg, 2007; Kam et al., 2004). PATH facilitates the creation of a positive change in the classroom by increasing empathy as well as openness in supporting the emotional needs of a child (Kam et al., 2004). PATHS is a universal prevention program that has typically been geared towards children in grades one to five, and consists of a comprehensive treatment for social awareness, social problem solving as well as interaction

skills and the decreasing of problem behaviors (Van Schoiack-Edstrom et al., 2002). Although PATHS has not been used exclusively with children with ASD, it is often implemented with children with a variety of special needs, including, behavioral and emotional problems, and language difficulties (Kam et al., 2004; Kelly, Longbottom, Potts & Williamson, 2004).

PATHS was originally created to target children in grades one to five that were typically-developing and the program was implemented with an entire classroom. It is taught throughout the school year and is mainly conducted by the classroom teachers (Bidgood et al., 2010). Activities commonly seen in the PATHS intervention are *feeling faces* and the *control signals poster* (Bidgood et al., 2010). *Feeling faces* allow children to communicate how they are feeling by being able to display different facial expressions; the *control signals poster* uses a stoplight design in order to walk the child through problem solving steps (Bidgood et al., 2010). Over the years, PATHS has been adapted for children with special needs (Kam at el., 2004; Kelly et al., 2004)

Kam et al. (2004) implemented a PATHS curriculum model consisting of 60 lessons for children with special needs in second and third grade; [units included self-control, emotions, and problem solving. This study implemented the Affective Behavioral Cognitive Dynamic (ABCD) model of PATHS was used. This model is a preventive intervention which focuses on developmental integration of affect, behavior, and cognitive understanding (Kam et al., 2004) The lessons were modified to focus on teachings and the reinforcement of behavioral self-control, rather than the more advanced steps such as problem solving (Kam et al., 2004). The study conducted by Kam et al. (2009) did not specifically target children with ASD; however, it was used as a school-wide intervention at a school for children with special needs. The participants for this study displayed learning disabilities, mild mental retardation, emotional and

behavioral disabilities, physical disabilities, multiple handicaps, and Attention-Deficit Hyperactivity Disorder (Kam et al., 2009).

The self-control unit in the study conducted by Kam et al. (2004) used the *turtle technique* which is a metaphorical story about a turtle who displays interpersonal and academic difficulties because he does not 'stop to think' (Kam et al., 2004). During the *turtle technique* children practice 'doing turtle' by following three steps for calming down, which is then followed by a discussion with their teacher where they discuss the problem and their feelings; the goal of this exercise is to increase the child's self-control, improve the group process and increase the child's attention (Kam et al., 2004). *Turtle stamps* are given as reinforcements when the child does 'the turtle' properly when he/she are faced with a problem during the day; the *turtle stamps* reward system is eventually faded out and replaced with participation in a lottery as a back-up reinforce program (Kam et al., 2004).

The feelings unit seen in the study conducted by Kam et al. (2004) contains 35 lessons that teaches emotional and interpersonal understanding in a developmental hierarchy which begins with the basic emotions such as happy, sad and angry, then later more complex emotions such as jealousy, guilt and pride (Kam et al., 2004). The feelings unit uses an emotional socialization model that teaches children that it is okay to experience all emotions, even some that make them feel uncomfortable; however, it teaches them that all behaviors associated with these emotions are not okay (Kam et al., 2004). The two techniques used for generalization in the feelings unit are *feeling faces* and *feeling boxes*; after each emotion is introduced children make a feeling face and that feeling face is placed in the feeling boxes, which they keep at their desks and use throughout the day to express their emotions (Kam et al., 2004). The *Control Signals Poster* (CSP) is used to develop self-control, communication and the beginning stages of

problem-solving skills during the feelings unit; The CSP has a red (‘stop-calm down’) light, a yellow (‘go low-think’) light and a green (‘go-try my plan’) light and at the bottom of the traffic signal reads the words ‘evaluate-how did my plan work?’ (Kam et al., 2004).

In the problem-solving unit, seen in the Kam et al. (2004) study the focus is on identifying problems and feelings, creating alternative solutions, evaluating consequences and finally, selecting the most effective plan for that child; this was implemented by using the CSP throughout the school day, also by using the *problem box* or *mailbox* technique. Whenever a children experiences a problem during the day, they write down the problem and place it in the problem box which is located on the teachers desk, once or twice per week the teacher use these problems during problem-solving meetings (Kam et al., 2004).

Results from this study showed that the intervention reduced the amount of externalizing as well as internalizing behaviors; however the participating students reported depressive symptoms (Kam et al., 2004).. The study highlights the importance of creating social-emotional learning programs among the special needs population (Kam et al., 2004).

Kelly et al. (2004) conducted a qualitative study on the PATHS curriculum with the goal to promote emotional competence in children. Kelly et al. (2004) chose the PATH curriculum because of its clear conceptualization of emotion and its focus on cognitive and developmental aspects. The PATHS curriculum was implemented in one classroom that consisted of 25 students that were 9- and 10- years of age and the children were followed by a multidisciplinary team; the students in this study displayed emotional immaturity, poor impulse control and poor emotion regulation (Kelly et al., 2004).

The curriculum contains six volumes which cover four units; readiness and self-control (one volume), feelings and relationships (three volumes), problem-solving (one volume), and one supplementary lesson (Kelly et al., 2004). Each volume include scripts and lessons for the teachers as well as pictures, photographs, work sheets for activities, activities to do in the home, letters for the parents, along with other supplementary ideas; Each unit is integrated and builds onto the lesson taught before it (Kelly et al., 2004). In the study conducted by Kelly et al. (2004), the students learned through a multi-modal approach that used a combination of visual, verbal and kinesthetic cues.

Kelly et al. (2004) used an approach to the PATHS curriculum that applied the concept of 'emotional intelligence'. Seven of the students were selected for a more detailed assessment and observation since they presented similar emotional and behavioral difficulties. These seven children presented emotional and behavioral difficulties such as impulsivity and opposition in unstructured environments (Kelly et al., 2004). All seven children in this qualitative study were rated as having made progress in at least one area of difficulty. *Personal profiles* were used in order to identify the emotional and behavioral difficulties these students possessed; The *Kusche Affective Interview* was also used to assess the students understanding of emotions in different situations; to assess the emotional competence of the classroom the teachers completed the *Taxonomy of Problematic Situations* (Kelly et al., 2004). The teachers involved in this study found the PATHS curriculum effective in promoting increases in children learning to manage and understand emotions displayed in the classroom; they found their students' written work to include more descriptive and richer content; cooperation and conflict resolution was more apparent among their students; finally, they found the curriculum to be original, valuable,

positive, and enjoyable (Kelly et al., 2004). The ability to understand emotions will increase classroom behaviors, relationships, and teaching skills (Kelly et al., 2004).

Video Modeling (VM) and Self-Video Modeling (SVM)

The concept of modeling or observational learning as a form of intervention strategy was introduced over 40 years ago by Albert Bandura as part of the social learning theory (Schmidt & Bonds-Raacke, 2013). Through the social learning theory it was demonstrated that modeling has a great impact on children's development and that these children will imitate behaviors without the use of reinforcement (Schmidt & Bonds-Raacke, 2013). Video-modeling is effective in capturing the attention of child; however, it minimizes the amount of attention and language requirements needed for processing (Schmidt & Bonds-Raacke, 2013); therefore children with limited verbal skills as well as attention span will be able to benefit from this intervention. As previously mentioned, VM and VSM records a targeted behavior displayed by the child, the video is then edited in order to highlight the desired behavior so that the child can watch him or herself displaying this positive targeted behavior.

Video self-monitoring (VSM) has been an effective intervention for children with ASD by improving social skills (Gelbar, Anderson, & McCarthy, 2012). VSM highlights positive targeted behaviors and provides alternative replacement negative behaviors (Gelbar et al., 2012). When the video is viewed by the children, watching themselves performing the target behavior at a mastery level helps to increase the children's sense of self-efficacy (Gelbar et al., 2012). VSM is preferred in most cases over VM since individuals tend to learn better from models that resemble themselves (Gelbar et al., 2012). The model in VSM is the participant, which makes VSM more appealing to watch. VSM is considered an effective evidence-based intervention for

children with ASD; increasing skills in language and communication, social skills, behavior, and task instruction (Gelbar et al., 2012).

Akmanoglu (2015) conducted a study that examined whether video modeling is effective for teaching naming emotional facial expression in children with Autism Spectrum Disorder. In this study, the dependent variable was the naming of eight emotional facial expressions and the independent variable was video modeling (Akmanoglu, 2015). The results of this study demonstrated that video modeling was in fact a successful intervention for naming facial expression among children with ASD. The study also showed that video modeling allowed the participants to maintain the skills they learned even after the intervention (Akmanoglu, 2015). The participants were also able to generalize different expression of emotions post intervention (Akmanoglu, 2015). According to Akmanoglu (2015), there are only two other studies in the current literature in which examine video modeling and naming facial expression. Results from Akmanoglu's (2015) study were consistent to those two other studies. These results demonstrated that all participants' maintained emotional facial expressions that were taught through the videos and all subjects generalized the skills obtained to various situations (Akamanoglu, 2015).

Schmidt & Bonds-Raacke (2013) conducted a study which examined the effects of VSM among children with ASD in a classroom setting in order to improve the children's on-task behaviors and appropriate behaviors during transition periods. Schmidt & Bonds-Raacke (2013) used an alternating treatment design with comparison and withdrawal conditions which consisted of a random order of 10 days of VSM, followed by 10 control days where no VSM was used. Results of this study showed that out of the two participants, one participant showed an increase in on task-behaviors and second participant's behaviors improved during transitions (Schmidt &

Bonds-Raacke, 2013). In the study conducted by Schmidt & Bonds-Raacke (2013), teachers' ratings were also administered for pre- and post-test and indicated improvements among both participants.

Cognitive Behavioral Therapy

Cognitive Behavioral Therapy (CBT) is an approach that links cognitions to feelings as well as behaviors (Squires & Caddick, 2012). Research has shown that CBT can alter behavior cognitively and behaviorally (Yeo & Choi, 2011). CBT is known to be the most effective intervention for children with internalizing disorders (Trosper et al., 2009). Additionally, the main goal of CBT is to help children develop awareness of their emotions, for example, when they become upset, as well as become aware of what triggers these emotions (Williams et al., 2004). Additionally, many of the techniques seen in CBT are also incorporated in PATHS such as, self-control, emotional awareness, and problem-solving.

PEER Method. There has been limited research on implementing CBT as an intervention for children with ASD; however, past research focuses on using CBT to treat symptoms of anxiety in children with ASD. In a study conducted by Laugeson and Park (2014) CBT was used to teach social skills to adolescents with ASD using the *PEER Method*. The *PEER Method* uses psychoeducation, role-playing, cognitive strategies, behavioral rehearsal exercises, performance feedback, homework, and parental involvement (Laugeson & Park, 2014). Findings of this study showed that CBT was practical, accessible, and beneficial for children with ASD when adaptations to the CBT program were introduced (Laugeson & Park, 2014). Van Steensel and Bogels (2015) also found CBT to be highly effective among children with high functioning ASD

after implementing a CBT program called *Discussing + Doing = Daring* which used structured workbooks and visual cues.

STAR. Cognitive restructuring, self-talk, and problem solving skills are common techniques used throughout the CBT intervention (Yeo & Choi, 2011). More recently CBT has involved techniques such as role-playing in order to improve perspective-taking, self-monitoring in order to bring awareness and the ability to recognize states of arousal, self-instruction to initiate inhibitory self-directives, and finally social problem solving to gain a broader array of possible solutions to situations that are problematic (Yeo & Choi, 2011).

Yeo and Choi (2011) conducted a group-based psychoeducational program that used enactive components of the CBT program which included, skills training in self-instruction as well as problem-solving in order to observe and analyze inappropriate classroom behaviors. Treatment gains were evaluated after one month of receiving the intervention; participants ranged from age eight to twelve years old; the participants displayed disruptive behaviors in the classroom, average cognitive and academic functioning, the ability the speak English, and finally children with special needs were excluded (Yeo & Choi, 2011). The intervention consisted of ten, one hour long sessions, that took place twice per week, over three months and also included two booster sessions one month post-intervention (Yeo & Choi, 2011). Sessions one and two were part of 'Stage 1' where the focus is on 'affective education' and children learned about emotions and their connections between feelings, thoughts, and behaviors (Yeo & Choi, 2011). The goal of 'Stage 2' (sessions 3-6) was to focus on cognitive restricting in order to raise awareness of the child's automatic thoughts and their cognitive distortions, and change their thought process by using 'thinking errors' and 'FROST' (Yeo & Choi, 2011). Sessions seven to ten ('Stage 3') focuses on self-management, self-instruction, and problem-solving where children

observed their behaviors and therapists modeled self-instruction and encouraged self-talk (Yeo & Choi, 2011). In Stage 3 techniques such as *Stop, Plan, Go* and STAR were used. *Stop, Plan, Go* is a stop light system that allows children to create a mental shortcut in order to plan appropriate choices; STAR stands for Stop, Think, Act, and Results which also promotes thinking about consequences and making appropriate behavioral choices (Yeo & Choi, 2011). Students were given workbooks that contained strategies as well as a report-card that allowed them to self-monitor their efforts and progress; areas used for self-monitoring are, punctuality, attendance, homework completion, participation, and good listening; stars and prizes were used to reward positive behaviors (Yeo & Choi, 2011).

The study conducted by Yeo and Choi (2011) also included a control group in which the focus was mainly on the importance of obeying the rules in order to stay out of trouble. The students in the control group examined causes of possible misbehaviors in the classroom. The students developed classroom rules that served as their guides in order to obtain positive behavior, and they participated in group discussions to discuss ways in which they could follow the rules (Yeo & Choi, 2011). Students in the control group participated in role-plays, quizzes and discussions that focused on the topic of appropriate behaviors and following the rules (Yeo & Choi, 2011). The discussions were facilitated by *situation cards*, students were given workbooks on the group rules, and they kept a report card in order to monitor their behaviors similar to the intervention group, stars and token rewards were also used to reinforce positive behavior and participation (Yeo & Choi, 2011). Results of this study showed significant improvement in self-control, classroom behavior, school behavior, social skills, and self-esteem (Yeo & Choi, 2011). The Stop-Plan-Go strategy, role-playing and group discussion are useful elements to incorporate into the current study. Even though this study excluded children with

special needs, the results are still applicable to the ASD population, since children with ASD often struggle with self-control and display behaviors in the classroom as a result.

Temper taming. Temper Taming is an 8-week CBT program where the goal is to reduce the level of children's temper (Williams et al., 2004). Williams et al. (2004) used a program called the *kNOw Problem Solving Pathway* which was designed to help children manage their tempers in order for them to take charge of their own selves. The participants of this study all expressed aggressive behaviors and were seeking treatment at an outpatient facility for their aggression. The first step to the *kNOw Problem Solving Pathway* program is to increase awareness of their tempers in hopes that they can 'catch' themselves before they react and apply appropriate coping skills (Williams et al., 2004). During this program children are asked to identify situations and people that typically trigger their tempers as well as explain how they feel and act during a temper tantrum (Williams et al., 2004). This is all completed during weekly discussion sessions (Williams et al., 2004). Once the children are aware of their behaviors and triggers they are then taught to problem solve by thinking through the consequences of their actions and brainstorming alternative outcomes (Williams et al., 2004). These alternative outcomes are then written down on pocket-sized note cards and the children are encouraged to keep these cards with them to remind themselves of what they learned (Williams et al., 2004). It is important that these children identify a list of people who are able to remind them as well as help them implement the alternative outcomes (Williams et al., 2004). Finally, the parents of these children are taught the same skills that their child is taught in order to implement them at home and reinforce positive behaviors; this was completed during three parent group sessions in study done by Williams et al. (2004). Results of this study found the *kNOw Problem Solving Pathway* program to reduce anger and aggression among the participants. Useful strategies from

this program to include in the current study would be the situation cards that facilitate the modeling of problem solving techniques.

Coping cat. The Coping Cat Program is a type of CBT for children primarily with anxiety between the ages of 7 and 13-years old that follows a therapist manual, a client workbook and consists of 16 sessions (Beidas, Benjamin, Puleo, Edmunds and Kendall, 2010). The first 8 sessions of Coping Cat focus on psychoeducation and children learn to identify social cues for their anxiety and coping skills (Beidas et al., 2010). The last 8 sessions are behavioral in nature; the children face their anxieties face to face by using a grading technique called the FEAR plan (Beidas et al., 2010; Kendall, Robin, Hedtke & Suveg, 2005). The 'F' stands for 'feeling frightened?', and this step focuses on somatic reactions to their anxiety; the 'E' stands for 'expecting bad things to happen?', this step helps the children identify anxious cognitions; the 'A' stands for 'attitudes and actions that can help', this step allows the children to develop coping skills (for example, deep breathing exercises and problem solving); finally, 'R' stands for 'results and rewards', during this step children are able to rate their progress and be reward themselves for facing their anxieties head on (Beidas et al., 2010).

Cognitive and behavioral principles are both important in implementing the Coping Cat Program. However, younger children (ages 7 to 13 years old) often have difficulty with these components of the program depending on their developmental level; therefore the Coping Cat Program has to be modified for younger children (Beidas et al., 2010). When modifying the Coping Cat Program for younger children, play often replaces teaching children about feelings, thoughts and behaviors; there are many *flex* activities that are suggested for the therapists to use (Beidas et al., 2010). The first session's primary focus is on having fun and building rapport; a therapist can play games such as the *personal facts game* where the winner is awarded a prize

(Beidas et al., 2010). Playing a game such as *charades* can be used to teach young children about feelings, they could also make a *feelings dictionary* or collage or play a *feelings spy/detective game* (Beidas et al., 2010). In order to learn about somatic cues to their anxieties the therapist can have the children draw a life size picture of themselves and point out and draw their own personal somatic cues on the paper (Beidas et al., 2010). Kendall et al., 2005 uses a *feeling thermometer* and *cartoon faces* in order to express levels of emotion.

To complement the lesson on somatic cues relaxation is often used; relaxation lessons are often conducted after the 'F' stage and therapists often speak about muscle tension and abdominal breathing in a child-friendly way (Beidas et al., 2010). Providing children with CD or music file that contains instructions for deep breathing in the therapists' voice helps them take the practice home with them (Beidas et al., 2010). As part of the 'A' step young children are taught how to challenge their anxious cognitions; children can generate coping skills by facing their anxieties and it is helpful for children to have one coping thought that they can always turn to (for example, 'be brave' or 'I can do it') (Beidas et al., 2010). These coping thoughts can be put onto key chains so that they always have it on them when an anxiety-provoking situation arises (Beidas et al., 2010). Beidas et al. (2010) also suggests that children could identify a role-model and keeps a poster of their role model acting as a visual reminder. All of the strategies used in the Coping Cat program are useful for the current the study as they influence positive emotion regulation. These strategies include the feelings thermometer, cartoon faces, charades, and the feeling dictionary and spy game. Coping Cat provides the children with various visual cues which research has shown to be effective among children with ASD.

Limitations in Previous Research

PATHS. Some reservations were brought up regarding the PATHS curriculum, that being the level of commitment that is required in order to set up the curriculum, teachers stressed the importance of having a supportive school environment and previous experience teaching emotions in the classroom for example during circle time in order to encourage personal expression (Kelly et al., 2004). Domitrovich et al., (2007) found that using only behavior rating scales and not using direct observation was a limitation to the results of their study. Additionally, Kam et al. (2004) suggests implementing the PATHS program as a comprehensive model that is used by the entire school in order to create generalization of the strategies. This would include incorporating the visuals (turtle technique and the control signals poster) all around the school and even the playground, lunchroom, and school buses (Kam et al., 2004).

Cognitive Behavioral Therapy. Yeo & Choi (2011) found the use of self-reports and teacher reports as a limitation to their study, as well as a small sample size and the inability to generalize across other samples.

Video modeling. Akmanoglu (2015) found that teaching only eight emotions was a limitation to the study and resulted in limited findings. Also, the study was not conducted in a naturalistic setting (Akmanoglu, 2015). Some of the limitations found in the study conducted by Schmidt and Bonds-Raacke (2013) include, small sample size (two participants), many extraneous variables that could not be controlled in the school setting, the threat of the Hawthorne effect since the video-camera was in the participants view, and the lack of a follow-up phase. Additionally, in the study conducted by LeBlanc et al. (2003), perspective taking was taught through video modeling; however behavioral explanations were not directly addressed

therefore caused limiting the interpretations of the findings. LeBlanc et al. (2003), suggest that future research include behavioral explanations as well as to evaluate strategies in which will increase perspective-taking skills in naturalistic social settings.

According to Akmanoglu (2015), video modeling should be tested among children with ASD that display different autistic features and the use of gestures or intonations during speech should be implemented (Akmanoglu (2015). Future research should continue to examine the effectiveness between various video-modeling techniques among children with ASD in order to find the best technique that reduces the amount of negative behaviors (Gelbar et al., 2012). Additionally, future research should continue to explore the effect of VSM among children with ASD and an extended amount of time between the intervention and follow-up phase should be included in future research (Schmidt & Bond-Raacke, 2013). Finally, it has been suggested that VSM should be implemented through-out the day instead of a few times per week and training sessions should be available for teachers in order for them to assist the children with their video clips (Schmidt & Bond-Raacke, 2013).

Rationale for Study

PATHS

PATHS teaches self-control and emotion awareness. The activities used in PATHS such as the *feeling faces, control signal poster*, *the turtle technique* and the *problem box* are all effective techniques and components of the program. They create an interactive intervention that is appealing and fun for children. PATHS is often implemented by the classroom teacher. For the current study specific components would be implemented within the classroom in small groups. PATHS has shown to effectively increase the child's ability to communicate how they are

feeling as well as controlling their emotions in a positive manner (Bidgood et al., 2010). Additionally, PATHS has been effective in regular as well as special-needs classrooms (Bidgood et al., 2010; Kam et al., 2004) which will make it a useful technique for the current study.

The PATHS curriculum addresses the more demanding requirements of emotional education by presenting a clear and coherent model of emotional development, and research has found PATHS to have a positive impact on emotional understanding as well as interpersonal skills and a child's behaviors (Kelly et al., 2004). PATHS allows the child to develop a more complex emotional vocabulary, improving the ability to discuss emotions and to understand emotions, and to provided problem-solving skills (Kelly et al., 2004). Teachers found the PATHS materials well organized and that the lessons were easy to prepare, they also felt the material was age appropriate (Kelly et al., 2004). Teachers reported the *feeling cards* made a significant positive impact and saw improvement in emotional vocabulary, self-awareness, the ability to express emotions, empathy, managing emotions and handling relationships (Kelly et al., 2004). Students described their experience with the PATHS homework as 'easy', 'interesting', 'helpful' and 'fun' (Kelly et al., 2004). Subsequently, components of the PATHS intervention will be used for the current study.

Coping Strategies

Previous research has suggested that children with ASD often display inadequate coping strategies such as venting and avoidance strategies (Jahromi et al., 2012). Therefore, children with ASD often lack the skills needed in order to self-regulate and often get discouraged and easily frustrated during difficult tasks in the classroom. Therefore, it is important to incorporate prosocial coping strategies in order to promote ER.

CBT has many effective strategies to promote positive social, emotional behaviors in children. Self-talk and role-playing are effective strategies to keep in the program along with STAR, the situation cards, the pocket sized note cards of alternative outcomes used in Temper Taming, the FEAR plan seen in Coping Cat, as well as feeling faces. Self-talk is used in CBT when a child is faced with a fearful situation. Self-talk is a phase in which a child can implement in order to self-regulate. For example, if a child is upset that they answered a question in class incorrectly even though they thought they were correct, they could say, "sometimes I'm right and sometimes I'm wrong". For the purpose of this study, "self-talk" will be a strategy used and will be paired with an emotional situation to increase the amount of future use. Coping Cat focuses on building a positive rapport with the student and is also an interactive and fun program. The CBT intervention group in the study conducted by Yeo and Choi (2011) showed evidence of improvement in self-control, behavior in the classroom and school, social skills, and self-esteem. Breaks and redirection are other coping strategies that will be useful for the purpose of this study. More specifically, strategies will be incorporated from the interventions STAR and Coping Cat.

Allowing a child to take a break can be effective as it allows the child time to regain their self-control and self-regulate (Landy & Bradley, 2014). It is important however, to not the let the child use the break as an escape or to avoid situations. The child must understand that the break is an outlet and they are responsible to returning to class only when they are ready to get back on task. During these breaks, the child will likely go to a "safe place" a place within the school where they feel safe; this is a place where they are able to properly redirect and process their behavior. Redirecting negative emotions into positive emotions is often problematic for children with anxiety (Hannesdottir & Ollendick, 2007). According to Sharma, Woolfson, and Hunter

(2013), the reason why children with ASD struggle with this redirection is because of their lack of TOM and emotional awareness. For the purpose of this study, visual representations will be used in order encourage turning a negative emotion into a positive emotion. The visual representation, for example a sad face that flips over to a happy face, will be paired with the self-talk phrase, “turn it around”.

Video Self-Modeling

Video self-modeling can ultimately reduce the number of problem behaviors displayed among children with ASD in the classroom (Gelbar et al., 2012). Video-self modeling allows the child to imitate targeted behaviors by observing him or herself performing the behavior successfully (Bellini & Akullian, 2007). Skills such as self-talk, redirection and other various prosocial coping skills can be presented through video modeling. Additionally, many strategies used in CBT, such as STAR, and PATHS can be implemented through VM and SVM. Furthermore, SVM allows the child to demonstrate the skills and behaviors themselves. Finally, VSM allows the child to see and understand antecedents and external cues in situations where they are frustrated.

Research has supported the conclusion that skills displayed among VSM can be generalized across different settings and the gains from VSM are maintained for months post intervention (Bellini & Akulllian, 2007). Therefore, VSM is an effective intervention for children with ASD as they often display difficulties in transferring skills across contexts (Bellini & Akullian, 2007). Comparably, Charlop-Christy et al. (2000) compared video modeling and in-vivo modeling for teaching communication and functional skills to children with ASD; results

showed that video modeling led to faster acquisition of skills as well as larger generalization effects across each participant and setting.

Additionally, visual cues often enhance a child with ASD's learning (Bellini & Akullian, 2007; Charlop-Christy et al., 2000). Combining visual cues and modeling provides and effective intervention for children with ASD (Bellini & Akullian, 2007). VM or SVM has been known to increase the child's motivation as it is more stimulating for the child (Bellini & Akullian, 2007; Charlop-Christy et al., 2000). Finally, video modeling allows for the removal of irrelevant stimuli, which allows a child with ASD to better focus on the targeted behavior and skill (Bellini & Akullian, 2007). In this study, the use of VSM will be used by video tapping the target behavior and incorporating self-talk scripts that will appear on the video screen while the behavior occurs. This allows for prosocial coping strategies to be modeled in the video by the child. The child will be allowed to view the video during class after asking for a break when the child feels it is needed in order to view the coping strategies needed at that time.

Conclusion

In conclusion, given that children with ASD are on a spectrum of autism disorder, each child will display different levels of emotion regulation and different coping strategies. The expression and regulation of emotions play a critical role in these children's lives. Therefore, teaching TOM, emotion differentiation, perspective taking, and prosocial coping strategies will only benefit them socially and behaviorally. The current study will take a qualitative approach in order to focus on each student's experiences with the intervention in an individual and an more in depth way. This qualitative approach will allow the researcher to gain insight on what units

and activities of each intervention are the most beneficial and how and what aspects of the child's emotion regulation improved.

The Present Study

Design and Purpose of the Study

This exploratory study uses a qualitative approach to study emotion cognition and regulation in children with ASD. Based on the interventions that have been previously implemented in order to promote emotion cognition (Kam et al., 2004; Landy & Bradley, 2013), the present study proposes to further investigate emotion regulation interventions among children with autism. The current study will incorporate activities based on the strategies and themes presented by previous research. Previous research has shown that educating children with ASD on emotion cognition and emotional awareness will help improve their practices in emotion regulation (Beerger et al., 2008; Erbas et al., 2013; Landy & Bradley, 2014; Lauritsen 2013). In turn, appropriate emotion regulation will improve the child's prosocial behaviors (Landy & Bradley, 2014). Therefore, the goal of this current study is to promote and inform positive emotion regulation and teach appropriate coping strategies to children with ASD. Directing the current intervention are the following research questions based on previous literature.

1. How will children with ASD's emotional cognition awareness improve emotion regulation?

Based on previous research, educating children with ASD on emotion regulation may improve the child's emotional awareness. Emotion regulation affects the way in which a person influences their own emotions, as well as how often they are aware of these emotions and how they experience and express these emotions (Hammond et al., 2009). Previous researchers found

that emotional awareness is critical in order to promote emotion regulation along with prosocial behaviors (Begeer et al., 2008; Jahromi et al., 2013, Jahromi et al., 2012; Landy & Bradley, 2014; Lynn et al., 2013). In turn this helped improve the child's emotional awareness.

2. Will emotion regulation training provide children with ASD with appropriate coping strategies?

Based on previous research, children with ASD often display hindered coping strategies such as avoidance strategies which often result in more frustration as they are unable to self-soothe (Jahromi et al., 2012). Regulating these emotions is imperative for the child to learn to function or respond appropriately. Therefore, the current emotion regulation intervention provided the participants with appropriate prosocial coping strategies.

3. Will the implementation of positive coping strategies help reduce problem behaviors in the classroom?

Previous research show, that children with ASD lack the strategies needed in order to properly cope and regulate emotions (Glaser & Shaw, 2011; Jahromi et al., 2013; Lynn et al., 2013). Self-video modeling has been shown to be an effective strategy that promotes proper regulation strategies and help children develop appropriate prosocial behaviors (Charlop-Christy et al., 2000). Therefore, the use of coping strategies taught through video-self modeling decreased the frequency and the duration of problem behaviors in the classroom.

Method

Participants and Setting of the Study

In order to explore these research questions a total of four participants were recruited for the current study. The participants targeted for the purpose of this study display developmental disabilities that impact their cognitive, social, and behavioral abilities. The participants are between the ages of 8 and 9- years-old and are all males, and all have a diagnosis of Autism. Each participant has been at student at Sunshine School (the name of the school was changed in order to maintain confidentiality) for 1-3 years. Even though each participant displayed difficulties in their cognitive, social, and behavioral difficulties, they are all very high functioning and excel in academics; however they display poor social and emotional development. Finally, all participants range from low to average IQ levels.

Nicholas. Nicholas is an 8-year-old boy in his fourth year at Sunshine School. Nicholas has been diagnosed with Autism. His teacher reports that he has come a long way and is very strong academically. He displays many behaviors, he has a hard time with things not being fair and he is very rule bound. He has displayed meltdowns over others breaking the rules. He needs constant redirection. He is endearing and predictable. Socially, he does have friends, however, struggles with sharing friends. Nicholas is involved with a very rigid program with the school psychologist, where phrases, visuals, and video modeling are implemented. He is the only student in the class to use calming techniques.

Tyler. Tyler is a 9-year-old boy in his third year at Sunshine School. Tyler has been diagnosed with Autism. His teachers describes him as being very bright, however, very immature for his age. Socially, he is very rigid, he always thinks that he is right, and often

whines. His teacher also states that socially, he is very reactive, he cannot accept feedback, and struggles with reasoning; he will have a meltdown over one wrong answer. With peers he has an "I'm better" attitude in class, but this is not seen much during play. He stays with his current class because of his age however he joins more advance classes for reading and math since he excels academically.

Ramon. Ramon is a 9-year-old boy. His teacher reports that Ramon is a good student overall and it is difficult to say identify his difficulties. She did report that if he gets something wrong or does not win in a sport or game he becomes upset. Socially, when he speaks out he seems to want to get everything out at once which leads to him stuttering and repeating the same things over and over again.

Michael. Michael is an 8-year-old boy who has attended Sunshine School for three years. Michael has been diagnosed with Autism. His teacher describes him as being rigid, and he does not like to be wrong. He displays difficulties in internalizing his thoughts and emotions, as well as shows anxious behaviors. Socially, he has trouble understanding that everyone can play together and people can have more than one friend. His teacher states that he is generally a good person, however, he has some struggles such as, self-control, emotion regulation, and possess obsessions in which he tends to take to an extreme.

Setting

Sunshine School, is a private school that provides services to students who display developmental disabilities that result in cognitive, social, and/or behavioral impairments. The students at Sunshine School range from age 4 to 21-years old. Sunshine school recognizes that each student's individual needs while integrating them into a group of peers who display similar

cognitive and social abilities. Sunshine School aims to develop positive social networks coupled with optimal learning. Sunshine School maintains a wholistic view of development by following a multidisciplinary approach with every student. The developmental areas that are targeted at Sunshine school are, physical, creative, social, and vocational. Educators at Sunshine School encourage each student too become active and productive members of society.

The classrooms are divided based on the student's cognitive and social functioning and this allows for children's functioning at the same level to be grouped together in order to facilitate learning. There is one classroom teacher and one assistant teacher placed in each classroom. The assistant teacher is available to provided individual assistance or small group assistance to students who require more attention. Students are allowed sensory accommodations in the classroom if needed, as well as have a special individualized behavior plan incorporated if needed; however most students in one classroom follow the same curriculum.

The *REACH* program is implemented in the school in order to promote expectations of respect, effort, attitude, cooperation, and honor. The students are expected to follow these expectations throughout each day; in the classroom, at lunch, recess, and in the hallways. When expectations are met, the student is reinforced with a *REACH rock.* Each week the team is responsible for creating a group reinforcement that the students can enjoy together, such as, a pizza day or a field trip. The students combine their REACH rocks in order to earn the special reinforcement. This encourages the students to work together and encourage each other to follow these expectations and eliminates individual reinforcement.

Sunshine School is well equipped with educators as well as paraprofessionals. There are Occupational Therapists, Physiotherapists, Psychologists, Speech Pathologists, Social Workers,

Special Education teachers, Education consultants, job coaches, drama therapists, and nurses on site at all times. These professionals play an important role in the development of the students at Sunshine School.

Ethical approval and recruitment

After ethical approval was obtained from the research team from Concordia University, Sunshine school was contacted. The approved Summary Protocol Form (SPF; please refer to Appendix F), along with the proposal, was presented to the research team at Sunshine school. Once approval was obtained from the research team at Sunshine school, a description of the current research study and the specific details of the intervention content was sent to the participant's families. In addition, consent forms were sent to the participants parents. When consent was obtained from the participants parents the researchers obtained an oral assent from the participants and written consent from the classroom teacher prior to the pre-test time point.

Procedures

Once all consent was received, the researcher began to gather pre-test data. Pre-test data was gathered prior to lesson one (January 2016). This data includes the Social Skills Intervention System (SSIS) teacher rating scale, an emotion cognition checklist, and individual semi-structured interviews with each participant; these interviews were focused around the participants knowledge of emotions and awareness of coping strategies. In regards to the teacher rating scale, the researchers met with the classroom teacher regarding and ensuring their understanding of the SSIS that was administered during the pre-test period. The teacher was asked to rate each participant prior to the lessons beginning to ensure the most reliable data.

Lesson one began the following week once all pre-test data was collected. Lesson one was conducted on Monday of that week (January 2016) and lesson two was conducted on Wednesday of that week. Hence, there were two 30 minutes lessons every week (Monday's and Wednesdays from 12:30 pm to 1:00 pm). Video self- modeling was recorded during the pre-test intervention period. The participants acted out a pretend scenario in which they felt overwhelmed in the classroom and needed to take a break. They then took the break card and left the class room to go to a safe place where they acted out coping strategies such as deep breathing and self-talk while being prompted by the researcher. The scripts for these videos were provided to the participant by the researcher and internship student who collaborated with the researcher on the current study. A more elaborate description of the role of the researcher and internship student will be discussed further in the methodology section. Also, during the pre-test intervention time period the pre-test SSIS was collected from the teacher and the child.

The post-test period took place six weeks after lesson one begins. At this time point the pre-test data collection was repeated. The teacher was asked to complete the SSIS for each participant, each participant completed a second interview, and the researchers completed the emotion checklist for each participant. The researcher and the internship student completed the checklists separately and then collaborated afterwards to discuss the results and come to a final conclusion on how each participant would be rated. The intervention and data collection was completed between October and April 2016.

Lessons

Each participant participated in 11 sessions focused on emotion regulation; these sessions were conducted in a group setting. Each lesson was conducted in the participant's classroom two

times per week (Mondays and Wednesdays from 12:30 p.m. to 1:00 p.m.). The teacher was present during the lessons however will not be participating. The lessons were facilitated by both the researcher as well as the internship student.

Session one focused on labeling simple and complex emotions using facial expressions. The participants first completed a worksheet in which allows them to label simple emotions (sad, happy, angry, scared) and described how they personally express these emotions. The next part of the lesson the researcher was originally going to use handmade flash cards which contained pictures of different eyes and mouths in order to identify more complex emotions such as frustration, confused, surprised, and uncomfortable (Charlop-Christy et al., 2000); however, the materials did not arrive in time and the researcher created a PowerPoint of facial expressions instead. Finally, the participants were shown video clips from the movie *Inside Out* where they saw each character from the movie (Joy, Disgust, Anger, and Sadness) display their emotions and the participants were asked to explain what they viewed. Lesson one aimed to teach the participants how to properly identify, express, and understand simple and complex emotions (Begeer et al., 2008; Lauritsen, 2013; Peterson et al., 2007).

Lesson two began with a brief review session on lesson one. Repetition of the material assisted in implementation of the skills taught. The main objective of session two was to teach the participants how to express emotion through facial expression, body language, and prosody. Expressing emotions through prosody and body language was displayed through the researcher's role playing scenarios that the participants then had to interpret these scenarios. These scenarios included representations of expressing emotion through prosody and body language. A discussion followed which addressed tone of voice and how it different tones of voice can reflect different emotions, which promotes emotional awareness (Linder & Rosen, 2006). Furthermore,

discussion addressed body language and how different posture and stances can represent different intentions and feelings (Golan et al., 2010). The last part of lesson two focused on emotional differentiation from within. Participants were presented with a worksheet that allows them to described instances when they have experienced a particular emotion. This provided the context of the emotions, antecedents to the emotion, and finally consequences of the emotion. Synonyms of emotions were presented in order to educate the participants on how different emotions can mean the same thing (Golan et al., 2010). This activity included emotion flash cards as well as an emotion wheel (please refer to Appendix D). Finally, this lesson provided the participants with practice of reflecting and describing their emotions since children with ASD often struggle with personal narratives and explaining their emotions (Brown et al., 2012; Erbas et al., 2013, Goldman, 2008).

Session three's purpose was simply to review sessions one and two. The participants were provided with new worksheets and scenarios in order to further their comprehension on what was previously taught (Please refer to Appendix D) for the materials that will be used). The participants also participated in emotion charades where they were asked to act out scenarios using emotional expression (i.e. facial expression, prosody, and body language) (Kam et al., 2004).

Session four focused on theory of mind (TOM). Bubbles were used in order for the participants to understand the differences of people talking and people thinking, as well as how other people poses different opinions than their own. This was implemented by comparing and contrasting different desire-based emotions throughout various TOM scenarios. After being given the scenario the participant were asked to explain how they would behave in this particular situation using their words, according to their current thoughts. Participants were then presented

with a scenario in which they performed a *scenario autopsy* (please refer to Appendix D). They answered questions related to their understanding of others emotions and their ability to interpret others emotions (Beeger et al., 2008; Lauritsen, 2013). Visuals were also presented in order to facilitate understanding.

The focus of session five was a review of negative emotions and emotional differentiation of these feelings from within. This lesson allowed participants to become more aware of these emotions and better able to respond to these emotions through the use of worksheets (Please refer to Appendix D). The second part of lesson five focused on the first step of perspective taking based on the research of Gould et al. (2011). The participants first were presented with a double-side paper with a picture of a frog on one side and a lion on the opposite side (Please refer to Appendix D). The researcher held the paper up in front of the class, so that one picture was facing the researcher and the other facing the participants. A discussion took place in order to examine the participant's ability of perspective taking; they were asked if we see different animals and why. This allowed the participants to understand that what they see may be different of what others see (Erbas et al., 2013). Finally, the last activity in lesson five was perspective drawing. The participants were asked to draw a picture from someone else's perspective; for example, drawing a bird, so therefore the child was responsible to draw what their perspective looks like up in the sky looking down.

Session six continued to review and expand on perspective taking skills. Perspective taking applied to peers was applied in this lesson. Participants were asked to interpret how a peer is thinking and feeling using the perspective taking skills taught by the researcher (Please refer to Appendix D). The process of reflecting on another person's thoughts encouraged prosocial behaviors among the participants (Begeer et al., 2008, Charlop-Christy et al., 2011; Lauristen,

2013; Linder & Rosen, 2006; Peterson et al., 2007). This activity allowed for the participants to think about the others person's body language, context, verbal expression, and facial expressions.

Session seven further reviewed TOM and perspective taking skills through new activities and scenarios. Bodily warning signals related to emotional conflict were introduced during this lesson. Participants became more aware of the internal triggers that their body provides for them in order for them to identify their emotions from with-in (Begger et al., 2008; Erbas et al., 2013; Lauristen, 2013; Peterson et al., 2007). The participants were provided with a worksheet of the human body so they were able to pin-point internal bodily warning signals.

Session eight reviewed the bodily warning signals taught during session seven. These warning signals were expanded on by relating these signals to the participant's behaviors. This was implemented through the use of a visual thermometer (Please refer to Appendix D). Furthermore, lesson eight focused on problem solving strategies based upon the PATHS intervention (Kam et al., 2004). The focus of the PATHS intervention is on generalizing particular conflicts and perspective taking. A discussion based on classroom conflicts occurred which allowed the participant to identify what happened, what was the antecedent, how did it make other people feel, and what could be done differently next time. A problem solving wheel was used as a visual aid during this discussion since it is important to provided visuals for prosocial strategies in dealing with conflicts in-vivo (please refer to Appendix D).

Session nine began with a review of bodily warning signals and problem solving and then moved into discussing prosocial coping strategies in order to facilitate a better response to negative emotions. The antecedent strategy "stop and think" was implemented by exposing the

participant to a visual before the negative behavior escalated. The participant was able to express how they felt during this time and what coping strategy they choose to apply.

Finally, the focus of session ten and eleven was to review the themes and strategies presented over the past nine sessions. The activities and scenarios that the participants enjoyed the most were presented again by their request in order to account for better success in generalization. These activities included the emotion thermometer, problem-solving wheel, and emotion charades.

Video Self-Modeling

Since self-video modeling has been shown to be effective in promoting proper self-regulation and prosocial behaviors, it was used to gather information for each participant during the pre-test time period (Charlop-Christy et al., 2000). The data was recorded while the participant [acted out a problem behavior that occurred in the context of the classroom. Self-talking scripts (in the participant's voice) were provided by the researcher and the internship student and repeated by the participant during the recording of the video. Appropriate coping strategies were modeled by the participant after the behavior occurred in order to reduce problem behaviors in the future, these coping strategies included rubbing their hands in order to calm down as well as deep breathing. These techniques were coping strategies taught during the lessons. The participant was able to view their video whenever a problem behavior arose.

Data collection

Field notes were vital to this qualitative analysis. The researcher and internship student kept a journal of all behaviors and contexts observed in the classroom. Field notes were taken for each participant. Classroom management techniques observed by the classroom teacher and

teaching assistant were also recorded in order for the researchers to stay consistent during management during the lessons. Finally, field notes were taken throughout the lesson as well as after in order to monitor process and to document what activities were most effective among the participants. Field notes became useful for debriefing purposes as well as interrater reliability in regards to working with the researchers partner (the internship student).

Data was gathered pre- and post-intervention through the teaching rating scale, Social Skills Improvement System (SSIS). The SSIS (Appendix J) measures social skills, problem behaviors, and academic competence. Since the researchers only observed the participants two days per week, the SSIS was administered in order for the classroom teacher to identify behaviors from a day-to-day basis. Administering the SSIS at pre and post-test intervention allowed the researcher to observe each participants progress over the six week time period in which the children participated in 11 lessons as well as SVM.

In order to understand the participant's current emotional awareness and emotional cognition an Emotion Cognition Checklist (Appendix D) was completed at pre and post-intervention. Finally, interviews were conducted with the student's pre and post intervention. The interview questions (Appendix E) examined the participant's current perception on emotions. The interview questions were the same at pre and post intervention in order to measure how the intervention changed their perceptions of emotions.

Measures

In order to explore any changes in the students that may result from the intervention and to follow the progress of each participant, the following measures were administered. The following section will provide the needed details about the following assessment tools.

Social Skills Improvement System (SSIS)

Social Skills Improvement System (SSIS) is a rating scale that assess three domains; social skills, problem behaviors, and academic competence. This measure was completed by the classroom teacher. As the previous literature has mentioned, incorporating teacher reports provides useful evidence on program effectiveness (Kelly et al., 2004; Schmidt & Bonds-Raacke, 2013). There are a total of 83 items (46 items for social skills, 30 items for problem behaviors, and seven items for academic competence). The social skills items include questions regarding communication, cooperation, assertion, responsibility, empathy, engagement, and self-control. Problem behaviors covered are, externalizing, bullying, hyperactivity/inattention, internalizing, and autism spectrum. Social skills and problem behavior items are rated on a 4-point scale, with *never, seldom, often*, and almost *always*. Finally, even though the participants are reported as being academic achievers, their social emotional abilities often interfere with their academic potential; therefore, academic competence is included. There are seven items for academic competence rated on a 5-point scale, with 1-lowest 10%, 2-next lowest 20%, 3-middle 40%, 4-next highest 20%, and 5-highest 10%. The SSIS provides internal consistency reliability and test-retest reliability. Validity is shown through content, internal structure, relations with other variables, and special-population samples.

Emotion Cognition Checklist

An emotion cognition checklist was created by the researchers based on previous literature (Bidgood et al., 2010; Erbas et al., 2013; Golan et al., 2010; Gould et al., 2011; Jahromi et al., 2012; Kam et al., 2004); Kelly et al., 2004; Leblanc et al., 2003; Linder & Rosen, 2006; Rieffe et al., 2007) to monitor emotion cognition development for the pre and post-testing

period. The *yes* or *no* checklist consists of 15 items all related to the participant's level of emotional cognition. A comments column is included in order to record any relevant context notes to better interpret the data. This checklist was then completed by the researchers. Each item is related to the lesson plans created for the intervention (Please refer to Appendix D for the emotion cognition checklist).

Interview Questionnaire

In order to understand the participant's current perceptions and knowledge of emotions as well as to measure progress between pre and post-test interventions each participating student were interviewed. The interview consists of five questions focused on students' understanding of emotions. The researcher conducted the interview with each participant (Please refer to Appendix E for the interview questions).

Data Analysis

Research question 1. How will children with ASD's emotional cognition awareness help improve emotion regulation?

Research question 2. Will emotion regulation training provide children with ASD with appropriate coping strategies?

In order to answer research question 1 and question 2 the emotion cognition checklist and the responses from the interview questions were compared from pre and post intervention. The information gained from both the checklist and the interview question provided insight as to whether and/or how the intervention as a whole provided the participants with an awareness of emotion regulation.

Additionally, the researcher will used the triangulation method by conducting interviews with each participant during pre and post-test intervention and compared the participant's perceptions to those reported in the checklist. The interview questions were transcribed verbatim and then coded in order to observe the qualitative improvement in the students' emotional awareness from pre to post intervention. Additionally, field notes were recorded and examined in order to describe pertinent events and behaviors that occur during each lesson along with maximizing the amount of trustworthiness (cite research book on validity and trustworthiness).

Research question 3. Will the implementation of positive coping strategies help reduce problem behaviors in the classroom?

To answer this question the SSIS rating scale that was administered to the classroom room teacher was used to compare pre and post intervention teacher ratings. The SSIS provided useful information regarding the child's problem behaviors and prosocial behaviors. The analysis of the students' response to the self-video modeling also provided further assessment of their development of implementing coping strategies.

Additionally, the researcher again used the triangulation method by conducting interviews with each participant during pre and post-test intervention in order compare the participant's perceptions to those reported in SSIS completed by the classroom teacher and the participants themselves. The students' interview questions were transcribed verbatim and then coded in order to observe the qualitative improvement in the participating students' development of coping strategies from pre- to post- intervention. Once again, field notes were recorded and examined in order to describe pertinent events and behaviors that occur during each lesson which display the implementation of coping strategies.

Qualitative Analysis. A qualitative analysis is best suited for the purpose of this study. The current study allowed us to obtain a better understanding of how children with autism understand and express emotions, to teach emotional awareness and improve emotion regulation, as well as to teach prosocial coping strategies. Qualitative analysis allowed both closed coding as well as emerging themes and patterns from the interviews to be explored.

Grounded Theory. In order to properly explore the current study, grounded theory was used. Grounded theory allows for new ways in discovering the data (Hayes & Singh, 2012). Data from the six weeks of the intervention has been analysed using grounded theory methods. The inductive approach that is grounded theory, allows the researcher to set aside all predetermined ideas to formulate a theory about a phenomenon (Hayes & Singh, 2012). Grounded theory allows the data to be revisited which allows more themes to be uncovered. Field notes were recorded during each lesson and reviewed in order to serve as a way to check for researcher bias during the analysis of data.

The interview conducted with the participants at pre and post-intervention were analyzed to understand the participants perceptions and experiences with emotions and coping during emotional conflicts. It was important that the research questions remained flexible in case the data showed themes that were new. The research questions also focused on the gaps that were seen across the literature regarding children with ASD and emotion regulation. The research questions were supported by the themes that emerged from the data.

Open Coding. Open coding was used to break down the qualitative data into parts and then examine them closely, and finally comparing them in order to discover similarities and differences (Saldana, 2013). Open coding was used in order to obtain a profound understanding

of the data. Open coding was completed after the interviews were transcribed. Additionally, the open-ended coding was accompanied by field notes which included my personal mental notes of participant observations, which also included my subjective responses and interpretation of the observations (Saldana, 2013). The field-notes that were recorded throughout the intervention were also transcribed and then coded by using open coding. The use of open coding helped organize the amount of data needed to allow for emotion coding.

Emotion Coding. In order to further explore and clarify the parts identified in open coding, emotion coding was incorporated. The implementation of emotion coding allowed for identifying subcategories which provided a more comprehensive analysis of the data. It was important to employ emotion coding to explore intrapersonal and interpersonal experience of each participant and the participants actions throughout the intervention (Saldana, 2013). Since this study was focused around emotions, it was important to use emotion coding in the analysis. That way all of the participants' emotions and perspectives about emotions was captured and analyzed.

Role of the Researcher

The role of the researcher in the current study was to work in partnership with the participants, classroom teachers, and internship student in order to not only educate the participants on emotion regulation but to allow them to share their experiences.

Hayes and Singh (2012) state, in order to withhold research reflexivity the research must possess authenticity, unconditional positive regard, and empathy. In order to create authenticity it was important to keep an open mind by knowing what it was the researcher wanted to accomplish and being able to adapt my findings from what the participants wanted to share. It

was also important to maintain an unconditional positive regard and empathy towards the participants. The participants were open to share anything they wanted to and the researcher did not make judgements. It was important to remember that the participants are on the Autism Spectrum and it is often more difficult for them to understand and express their emotions. Therefore, always being sensitive and compassionate was important.

Furthermore, the researchers past work and education experiences only helped the researcher be able to maintain these qualities (authenticity, unconditional positive regard, and empathy). I, the researcher have been working in the mental health field for over ten years. More specifically, I have been working in an educational setting for the past three years. This includes having worked at the summer camp Sunshine School offers for their students for two summers. Therefore I am familiar with Sunshine School and the population of students that attend this school which gives me an insider perspective. This experience also includes working as an after-school monitor for a homework program at a private all boys' school. I also have experience facilitating academic and organizational skills groups with children with Attention Deficit Hyperactivity Disorder. In these groups I taught the children skills to improve in their academics as well as emotion regulation, stress management, and social skills. My experience working in this field and with this population will only benefit my current research as well as allow me to continue building working relationships and collaboration with the staff and students at Sunshine School. Overall, my experience with working at Sunshine School as well as my experience working on the research team at the Children's Hospital provided a critical role in creating my interventions as well as collection the data. My personal interests include behaviors displayed in classrooms and understanding the emotions that lead to these behaviors.

For the current study I worked in collaboration with an internship student who is Applied Behavioral Analysis (ABA) certified and has a great deal of experience working with children with Autism. I had weekly peer debriefings with the internship student where we were able to discuss the field notes that were taken after each intervention. The internship student also participated in gathering data. The internship and researcher collected the data together; however the researcher only collected the SSIS data. I was also able to collaborate with the classroom teacher and the teaching assistant who provided insight and pertinent information on each participant. The intervention used for the current study was incorporated into the curriculum. I hold an outsider perspective in the sense that I have never worked with the current participants and therefore the insight and information shared by the classroom teachers are crucial for the current study. Working in collaboration with the internship student and the classroom teachers allowed the researcher to take the necessary steps in order to ensure triangulation as well as subjectivity (Hayes & Singh, 2012).

It was important for the researcher to take all necessary steps in order to create trustworthiness by ensuring credibility, transferability, dependability, and confirmability throughout the current study (Hayes & Singh, 2012). In order to ensure that the interpretations of the data were true to the participants experience as mentioned previously the researcher kept field notes, which was a detailed reflective journal during the pre-test observation period as well as during the intervention and during the post-test data collection period. In the detailed reflective journal the researcher recorded pertinent information such as descriptions of the setting, participants, mood, data collection process, and quotes from the participants. Any conversation the researcher had with the internship student or classroom teacher were also recorded in the journal. The reflective journal helped the researcher eliminate any biases that

may have been created. Lastly, the weekly meetings with the internship student helped created confirmability.

Findings

The purpose of the qualitative data analysis is to obtain a better understanding of how children with Autism Spectrum Disorder understand and regulate their emotions as well as, teaching these children to better regulate emotions and develop prosocial coping strategies. The study explored the following research questions by using an in-depth analysis of the qualitative interviews, the teacher, the VSM, and the emotion cognition checklist. (1) How will children with ASD's emotional cognition awareness help improve emotion regulation? (2) Will emotion regulation training provide children with ASD with appropriate coping strategies? (3) Will the implementation of positive coping strategies help reduce problem behaviors in the classroom?

To explore these research questions, the data was gathered using grounded theory and then coded using open coding and emotion coding. Once the data was coded, themes emerged. In the following section, these coded themes will be discussed by considering the data of the participating students: (a) their knowledge of emotions (theory of mind), (b) their ability to differentiate emotion, (c) their perspective taking, and (d) their coping strategies. One of the most prominent themes that emerged from previous research as well as the current data was the participants' knowledge of emotions.

The goal of the current intervention was to increase each participant's knowledge of simple and complex emotions. Overall, some participant's knowledge of emotions was more developed during pre-test data collection than others. After the intervention many participants knowledge of emotions increased and became more distinguished. Another theme that was

analyzed based on previous research was emotion differentiation. One of the goals of the current intervention was to teach the participants to differentiate between their emotions as well as other's emotions. Additionally, the researcher's goal was to teach the participants that a person can feel two or more emotions at once. Another goal, of the current intervention was to teach the participants that people often obtain thoughts and feelings that are different than their own and the importance of why we should be aware of this, thus perspective taking was also analysed. Finally, the last theme based upon previous research was coping strategies; the ability to practice prosocial social coping strategies. The last goal of the current intervention was to teach prosocial coping strategies through the lessons as well as video self-modeling.

A video self-model was also created with each participant in which they acted out a scenario where they needed to re-focus and sometimes take a break from class; it was an opportunity to use coping strategies such as deep breathing and self-talk. The data regarding the effectiveness of this intervention were non-conclusive. The researcher and the internship student were not present in the classroom often enough in order to monitor if the video self-models was having an impact on the participants and changing their behaviors in the classroom. The only participant who viewed his video daily was Nicholas, as he already used this intervention as part of his behavioral plan with the school Psychologist.

In the following section, the findings for each student participant will be described using examples to highlight their experiences throughout the intervention. The emotion cognition checklist, the interview, the teacher SSIS, and finally the field notes taken from the lessons along with worksheets gathered from the lesson will all be used to describe each participants experience and development.

Michael

Knowledge of emotions (theory of mind).

The emotion cognition checklist was used to assess the participant's development from pre-test to post-test intervention. At the pre-test observation, Michael showed that his initial understanding of emotions was fairly strong, with some limitations. During the pre-test data collection, Michael struggled with interpreting body language and the understanding of complex emotions. However, he did display the ability to label complex emotions in facial expressions, and understand emotional prosody. In addition, at the pre-test interview Michael was able to label happiness, anger, and sadness for emotions that he feels in a day as well as identify that these emotions are different from each other. Michael was able to identify that when "something hurts you, it makes you sad". He described an emotion that he often feels, "crying-anger", as when he cries and gets angry at the same time. When describing what the emotions do to his body he described the feeling of "water rising up", "heart beating faster", the "walls in his stomach are moving", and finally made the connection of every emotions having a color and when his emotions change, the colors he see's changes as well. Michael was able to identify the complex emotion, jealous, and explain its meaning.

In Michael's pre-test drawing (please refer to Figure 1) of "how he feels when he is at his best and at his worst" he described his best as feeling like he was in "candy land and seeing a giant candy corn and running into it". He then explained that he has never actually tried a candy corn before and he just saw this from a video. He also drew cotton candy and explained that he "loves bubble gum". When describing how he feels at his worst, he drew a picture of himself "destroying the school". While he was drawing this, he told the researcher and the internship

student that he was “seeing black” which meant he was “feeling jealous”, but when asked what he was feeling jealous about he said, “I don’t know. The school, I’m destroying the school. That’s what I feel like”.

Figure 1. Michael’s pre-test drawing

Throughout the lessons Michael displayed strong knowledge of emotions, he was able to identify simple emotions as well as explain what it means to feel each emotion and how each emotions feels in his body. He was absent during lesson one however lesson two he participated well during the review. Michael already possessed a fairly strong knowledge of emotions. However, he did display trouble with the understanding of some complex emotions. For example, when filling out the emotion flash cards in lesson two, he did not fill out times he felt proud, angry, or disappointed suggesting that he may struggle with complex emotions at this time. However, during lesson two, Michael was not feeling well and ended up leaving the lesson early due to illness, which could have been the result of leaving part of the worksheet blank.

Based on the post-test emotion cognition checklist, Michael made positive changes in all of the areas in which he was struggling with during pre-test. During the post-test interview Michael identified all emotions, both complex and simple. He was able to describe each emotion and how they affect him. When describing his drawing (please refer to Figure 2) of how he feels

at his best and at his worst he drew his best as a picture of wrestling and his worst was drawn through destroying a house with his bare hands. He described it as, “destroying my own house with my bare hands”. I feel like I have sharp teeth in my mouth. Like devilness”. Finally, at pre-test intervention Michael was unable to interpret body language; however at post-test he displayed a positive change in this area.

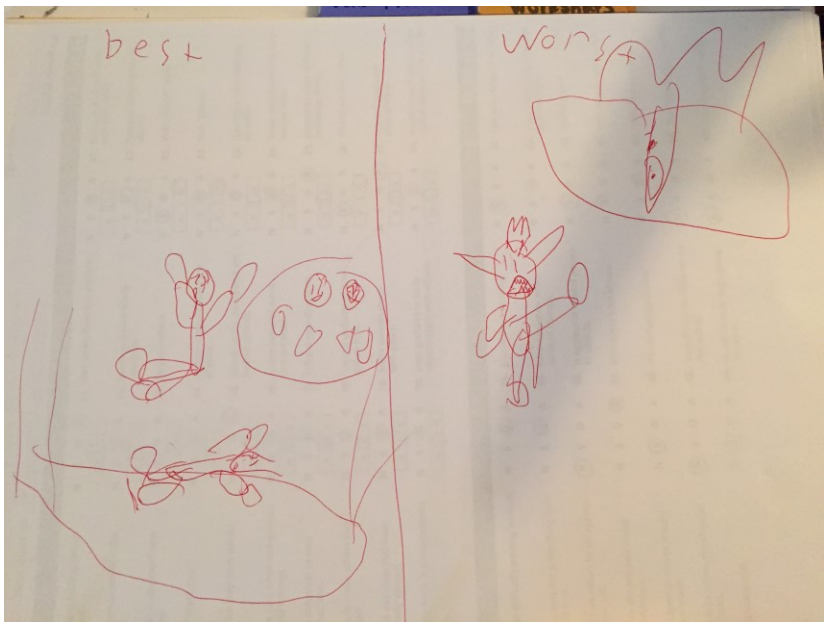

Figure 2. Michael’s post-test drawing

Emotion differentiation. During the pre-test interview Michael displayed some ability to differentiate between emotions. “If anything hurts you it makes you sad, or if anything makes you mad, it makes you mad”. However, he did describe “crying-anger” which he described as “crying and getting angry at the same time”. Michael described his emotions using colors, explaining that every emotion has a different color and when he is feeling those emotions he sees the corresponding color (“red when I’m angry…blue when I’m sad”…). He also described the colors he sees for not only simple emotions such as sad and happy, but for complex emotions

such as disgusted, guilt, and jealous. He was able to describe jealous as, “you want something that someone else has”.

Pre-test data from the emotion cognition checklist also shows that prior to the intervention Michael was able to understand and differentiate emotions from within, and differentiate one’s owns thoughts from another’s.

During the lessons, when completing the, I *felt disappointed when* and *I felt worried when* worksheets, he was able to accurately describe two different situations for each emotion with no difficulty. “I felt disappointed when we lost against the steam boats”, “I felt worried when my friend was going to get the winning shot”.

Michael’s post-test interview also showed a clear ability to differentiate between emotions: “joy is happiness, fear is when you are scared, sadness is when you are really sad, disgust is when something is really gross, anger mean really mad or upset or disappointed”. Here, Michael is not only labeling emotions but he is able to describe the meaning of each emotion and understand that they are different from one another. Just as the pre-test emotion cognition checklist confirmed, the post-test data from the emotion cognition checklist confirmed his ability to differentiate between emotions. Emotion differentiation was not an area that Michael needed to improve; however, his knowledge and understanding grew over the course of the intervention.

Perspective taking

During the pre-intervention session, Michael possessed the ability to differentiate between different viewpoints, for example, understanding that people see things differently; however, he did not possess the ability to take the perspective of another and to be able to

explain why. During the pre-test interview, Michael described a situation from last school year when he would get another classmate in trouble and now he felt guilty for getting him in trouble. His feeling of guilt showed that he understood the perspective of his peer and that he probably did not like getting into trouble and therefore Michael now felt guilty.

During the lessons, Michael was able to complete the talking and thinking bubble activity (lesson 4) and worksheet well. He came up with appropriate and accurate responses. When drawing a picture of the "perspective of another", he chose to draw his cat's perspective (lesson 5). He drew a picture of a "shark demon" and said that his cat sees that I look like a shark demon". During the activity completed in lesson 6 when Michael filled in the thought bubbles for the different characters he again accurately provided appropriate thoughts based on their facial expressions and body language.

Post-test data from the emotion cognition checklist showed that Michael now possesses both the ability to differentiate between different viewpoints, for example, understanding that people see things differently, as well as, the ability to take the perspective of another and be able to explain why. These were all areas in which Michael struggled with at pre-test. Therefore, Michael's understanding of perspective taking did display positive changes at post-intervention.

Coping strategies

During the pre-test interview Michael was not able to identify his immediate reactions to his feelings ("I don't know what they are"). Michael was able to identify coping strategies such as "breathing in and out when angry", "trying to calm down", and having friends "pat me on the back". Based on the pre-test emotion cognition checklist, Michael rated *no* for the ability to deal with conflicts prosocially, the ability to identify antecedents to emotional conflicts, proper use of

appropriate coping strategies when faced with emotional conflict, and the ability to express his needs and desires appropriately when faced with an emotional conflict. Therefore, these were all areas in which Michael needed improvement.

During lesson seven when asked to draw (please refer to Figure 3) where he feels his emotions in his body when upset he colored the head, arms, legs, and his heart.

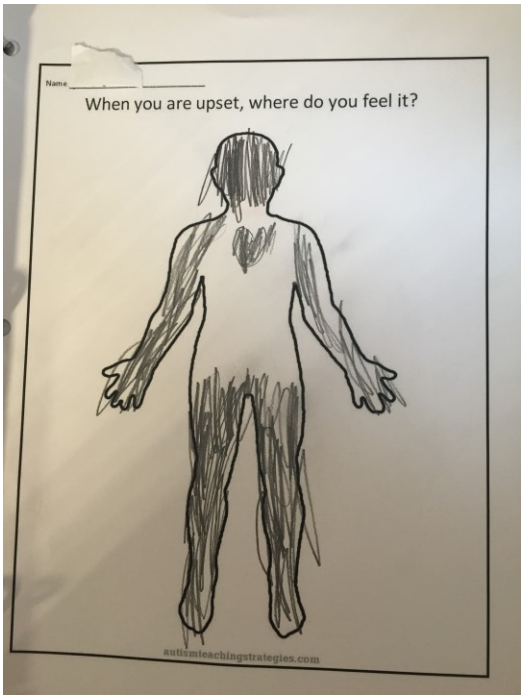

Figure 3. Michael's bodily warning signals worksheet

During lesson eight Michael described a conflict with his sister which led the observers to understand he lacks in problem solving skills in the moment. He was able to describe the situation and identify what he could have done differently when discussing it during the lesson; however, he is unable to implement these strategies in the moment.

Michael's post-test rating for the emotion cognition checklist showed positive changes in all categories related to coping strategies, which indicates the most positive changes among all

the other skills. During his post-test interview he was able to identify coping strategies and shared a story about how he used dancing as a way to cope one day and his mother was very happy with this behavior. He also described that he usually feels anger in his legs, and then "shakes out the anger out" of his legs".

The SSIS rating completed by the teacher indicated that Michael showed positive change in social skills such as, empathy and self-control (as seen in Table 1). As seen in Table 2, there was no change in Michael's problem behaviors as reported by the classroom teacher. During the post-test interview, Michael told a story about a time he got upset with his mother when she told him he could not play a video game. He reported that instead of acting out he decided to dance and that made his mom very happy. Here we see that Michael was able to maintain self-control as well as empathy towards his mother; empathy and self-control are two areas in which Michael a positive change was observed from the teacher SSIS rating scale (please refer to table 1).

Table 1. Michael Scores from Teacher SSIS Rating Scale

Social Skills	Pre-Test	Post-Test
Communication	Average	Average
Cooperation	Average	Average
Assertion	Average	Average
Responsibility	Average	Average
Empathy	Below Average	Average
Engagement	Average	Average
Self-Control	Below Average	Average

Table 2. Michael Scores from Teacher SSIS Rating Scale

Problem Behaviors	Pre-Test	Post-Test
Externalizing	Average	Average
Bullying	Below Average	Below Average
Hyperactivity/Inattention	Below Average	Below Average
Internalizing	Below Average	Below Average

Nicholas

Knowledge of emotions (theory of mind)

Nicholas's initial understanding of emotions was limited at the time of the pre-test session. During this pre-test session, Nicholas did not demonstrate the ability to understand emotional prosody or interpret body language. He was rated on the pre-test emotion cognition checklist has having the ability to label complex emotions in facial expressions, as well as differentiating between different viewpoints. During the pre-test interview it appeared that Nicholas did not know how to answer most questions. He said "I don't know" or shrugged his shoulders as a response to almost all questions Since at the pre-test ratings he was able to label complex emotions he may have been having difficulty with verbal expressions; therefore, the emotion cognition checklist was completed by the researcher and internship student based on pre-observations that were made since October. When asked to draw a picture of how he felt at his best, he drew a pig and explained why he likes pigs; because they "oink" and he "likes bacon". His picture of how he feels at his worst illustrated how he felt like a "creeper" and he related exploding to a video game (please refer to Figure 4).

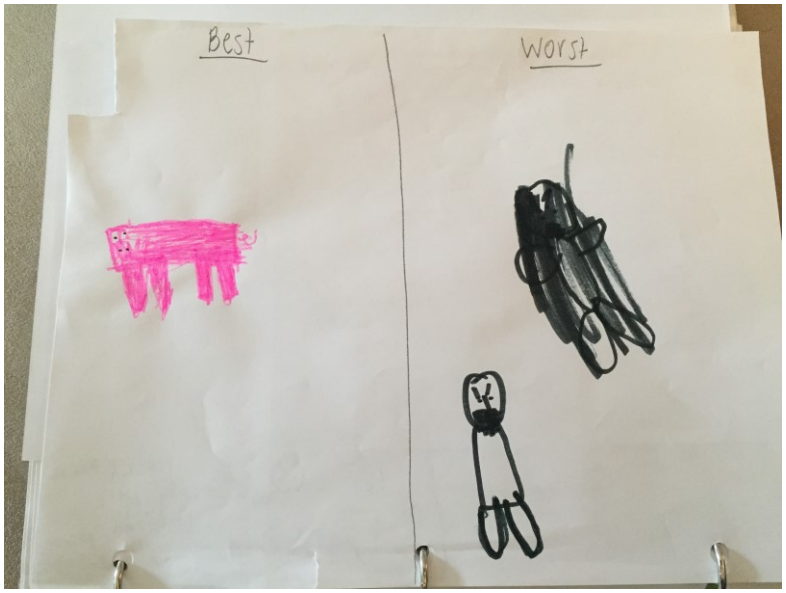

Figure 4. Nicholas's pre-test drawing

During the first lesson of the intervention, Nicholas was asked to fill out a worksheet about feelings and how he showed happiness, sadness, anger, and fear. He wrote down the name of a video game for happiness, and wrote "I'm scared of the dark" and drew darkness for scared. He did not write or draw anything for sadness and anger. When filling out the emotion flashcards during lesson two in order to learn complex emotions he used the same video game reference to describe when he feels happy. He was able to identify things that made him feel sad, surprised, proud, and angry. However, when asked how he felt when he's disappointed he said "the same thing as angry". Also, during lesson two, Nicholas asked, "does tender mean disgust?" here you see that Nicholas does not have a complete full understanding of complex emotions which contradicts what the researchers reported in the pre-test emotion cognition checklist. During lesson 3, after a bit of hesitation to participate, Nicholas was able to participate in emotion charades. He was able to correctly act out the emotions as well as guess the other participants emotions that they acted out.

Nicholas showed positive changes in his knowledge of emotion cognition after the intervention (post-test). Overall, he displayed the ability to identify simple and complex emotions, emotional prosody, and interpreting body language. The post-test emotion cognition checklist rated Nicholas as able to identify and describe emotions, however, implementing the skills learned in real life settings are still a challenge for him. Nicholas's post-test drawing of how he felt at his best and worst changed. In his post-test he drew facial expressions that matched the emotion as where in pre-test we saw a picture of a pig and a character from a video game (please refer to Figure 5).

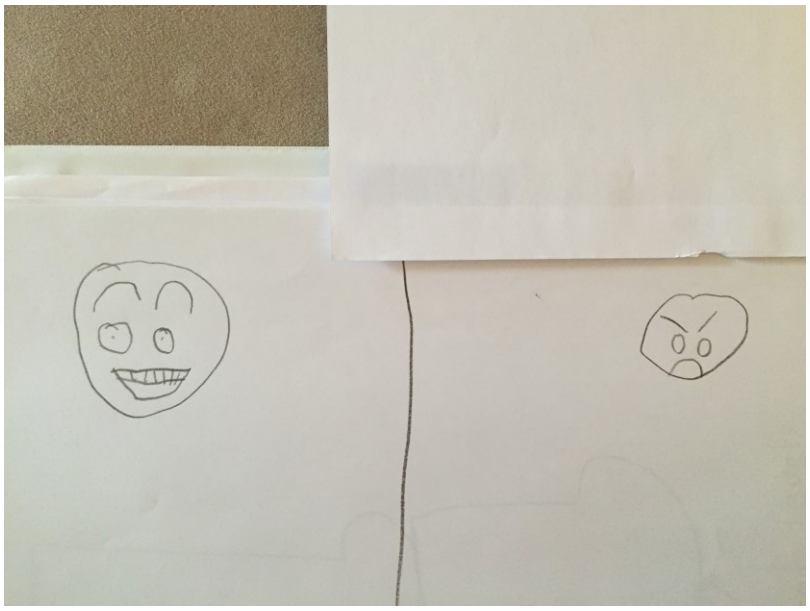

Figure 5. Nicholas's post-test drawing

Nicholas's post-test interview also showed positive changes in his knowledge of emotion cognition. He was able to identify five emotions, and distinguish that he can feel more than one emotion at once, as well as describe a situation in which he felt that way. Nicholas was also able to identify how emotions feel in his body.

Emotion differentiation.

Nicholas did not demonstrate the ability to differentiate emotions from within or differentiate one's own thoughts from another's during pre-test observations. He was rated *no* on the pre-test emotion cognition checklist for all items pertaining to the ability to differentiate between emotions. When asked if he could feel more than one emotion at a time during the pre-test interview Nicholas shrugged his shoulders and gave no response. When asked to fill out a worksheet on feeling more than one emotion at a time, Nicholas was non-compliant; therefore, it was difficult to collect data on this subject during the intervention. During this time Nicholas was having a particularly difficult day, which could explain his difficulty with this activity. Later during lesson 5, Nicholas was able to identify a time in which he felt disappointed, as well as worried. He reported that he felt worried when "I miss my mom when I'm on vacation without my mom" and disappointed when "I always want a NERF gun". So here we see a positive change in his ability to describe complex emotions..

In the post-test interview Nicholas described that ability to feel more than one emotion at the same time, "I could actually feel three at the same time". He described a situation in which he felt happy and shy at the same time. He stated he knew he was feeling both emotions because he "laughed a little bit". Therefore, post-test data shows that the intervention appeared to provide Nicholas with an understanding of emotion differentiation.

Perspective taking.

Nicholas demonstrated little awareness of perspective taking. Nicholas was rated a *no* on the pre-test emotion cognition checklist for all items pertaining to understanding perspective taking, except the item, ability to differentiate between different viewpoints. When Nicholas was asked

to make a drawing from something else's point of view he drew what a hovercraft would see. However, he drew the hovercraft and not what the hovercraft could see. Here, we see Nathan did not understand perspective taking. Another perspective taking activity showed Nicholas using the same expression "this is not fair" for a picture of a girl who looks angry and a boy who appears to be worried or upset. Nicholas was able to come up with appropriate talking and thought bubbles in lesson six. When presented with a double-sided picture with a different image on each side, he was able to distinguish that what he saw on one side of the picture was different than what the researcher saw on the opposite side of the picture during lesson five.

Coping strategies.

Nicholas demonstrated little awareness of the ability to identify antecedents to conflicts and the use of coping strategies during pre and post-test. As previously mentioned, Nicholas answered most questions during the pre-test interview with, "I don't know". He was not able to answer any questions related to coping strategies. Again, on the pre-test emotion cognition checklist Nicholas was rated no on all items pertaining to coping strategies as well as the ability to identify bodily warning signals. During lesson 7, Nicholas described that when he is upset he felt it everywhere in his body and colored the picture of the body all red from head to toe (please refer to Figure 6.)

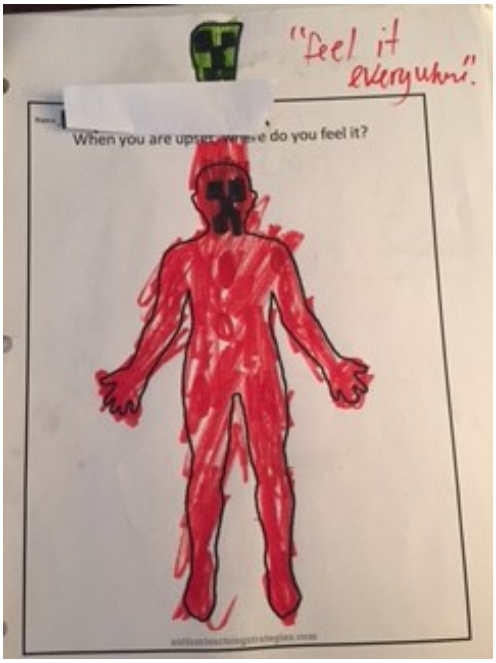

Figure 6. Nicholas's bodily warning signal worksheet

During lesson seven and eight when discussing the emotion thermometer Nicholas described it as a volcano. "I know what yellow means, very annoyed". He then used the emotion thermometer to describe his current feeling, "I'm starting to get pretty mad, and I'm in the yellow". Nicholas was actually starting to get agitated during this activity and he needed to leave the classroom to take a break. When discussing the emotion thermometer during the review session, Nicholas told the researcher that "it is working" and said that currently he is in the blue. Nicholas's teacher told the researcher that one day when the researcher was not present Nicholas got upset in class and left the class, when she asked him what was wrong he responded, "Can't you tell I'm very aroused right now". Aroused is a term used on the emotion thermometer and the teacher confirmed to the researcher that Nicholas is retaining the information he is being taught in the lessons.

Post-test data from the interview showed Nicholas had the ability to identify some coping strategies, for example, stating, “thinking happy” was a something he could do to make himself feel better when upset. Nicholas also stated he could “wrestle a little bit” and “relax and be in my bed” as strategies. However, he continued to struggle with the implementation of coping strategies. Nicholas was unable to describe what strategies he uses in order to bring him down on the emotion thermometer. He also struggled when trying to think of examples of coping strategies from the wheel exercise; his response was “I can’t remember. I have some strategies already”. When asked what those strategies were, he responded, “I don’t really know”.

The post-test emotion cognition checklist indicated that Nicholas continues to struggle with using appropriate coping strategies when faced with an emotional conflict and dealing with conflicts prosocially. However, he increased in his ability to identify antecedents to emotional conflicts, identifying what coping strategy to use, and expressing his needs and desires appropriately when faced with an emotional conflict.

The SSIS rating completed by the teacher indicates that Nicholas did not show a positive change in social skills (as seen in Table 3). As seen in Table 4, there was no change in Michael’s problem behaviors as reported by the classroom teacher; however he scored lower on bullying at post-test then pre-test.

Table 3. Nicholas Scores from Teacher SSIS Rating Scale

Social Skills	Pre-Test	Post-Test
Communication	Average	Average
Cooperation	Average	Average
Assertion	Average	Average
Responsibility	Average	Average
Empathy	Average	Average
Engagement	Average	Average
Self-Control	Below Average	Below Average

Table 4. Nicholas Scores from Teacher SSIS Rating Scale

Problem Behaviors	Pre-Test	Post-Test
Externalizing	Average	Average
Bullying	Average	Below Average
Hyperactivity/Inattention	Below Average	Below Average
Internalizing	Below Average	Below Average

Tyler

Knowledge of emotions (theory of mind)

Based on the rating from the pre-test emotion cognition checklist, Tyler had the ability to label complex emotions in facial expressions, understood emotional prosody, as well as understood complex emotions in others. It observed that Tyler did not have the ability to interpret body language. During the pre-test interview Tyler labeled emotions such as, “happy, sad, angry, frustrated, surprised, and disgusted.” When asked to draw a picture of how he feels at his best Tyler drew everything related to video games. Tyler stated that video games make him feel “happy”; however, “video games can also be against me because for example, arguments about how I play or what I should play” (please refer to Figure 7).

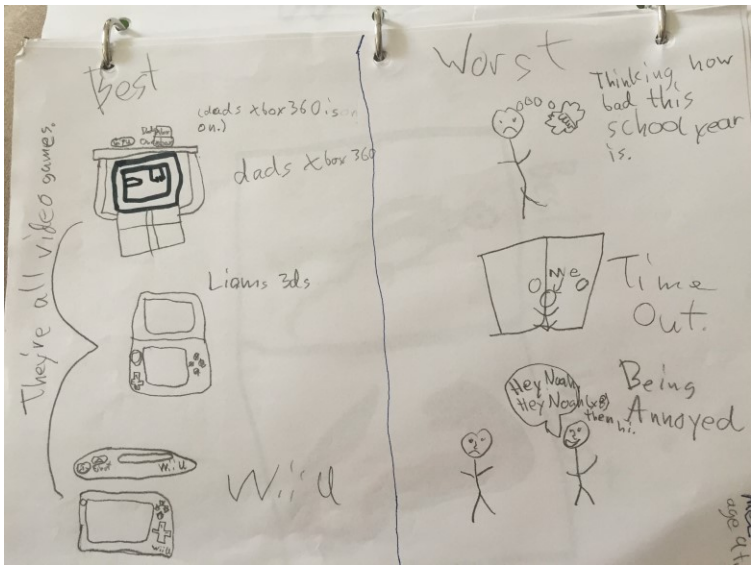

Figure 7. Tyler's pre-test drawing

When asked to draw how he feels at his worst during pre-test Tyler drew a picture describing "how bad this school year is", being in time out, and "being annoyed". "Last year I made a lot of friends in my class and I was in the same class last year and we were all together. Now everything's changed and we all split up, and when things changed everything started to go wrong". "My school year has been pretty bad, even my life". "A lot of things annoy me".

During lesson one Tyler was very quiet and would say, "I don't know" to almost all of the questions. He did mention that he had been feeling ill which could be the reason for his lack of participation. When he did participate his responses were appropriate and displayed his knowledge of emotions such as, "Disgusting feels like I'm going to barf". He also explained that he has "different faces of anger" and he continued to act out all of these faces. Tyler was able to complete the emotion flash cards completed in lesson 2 with no difficulty. His responses were real and emotional ("I feel sad when memories hit me, I feel disappointed usually"). Another

time that Tyler expressed his knowledge of emotions was during lesson 3 when he said, “puzzled is another word for confused”.

According to the post-test emotion cognition checklist, Tyler was observed to show a positive change in all areas and scored *yes* for each item. More specially to knowledge of emotions, as previously mentioned the checklist indicated that Tyler struggled with the ability to interpret body language; however, post intervention shows that he is now able to interpret body language. During the post-test interview Tyler labeled both simple and complex emotions such as happy, sad, angry, and disgusted, which was similar to his pre-test interview responses. When asked to draw how he felt at his best and at his worst during the post-test interview, Tyler drew his anger levels using a thermometer. This thermometer as pictured below contains both negative and positive “temperatures”. Tyler describes -100 being his lowest level of anger and 100 being his highest level of anger. On his thermometer zero is the half way point where he feels neutral (please refer to Figure 8).

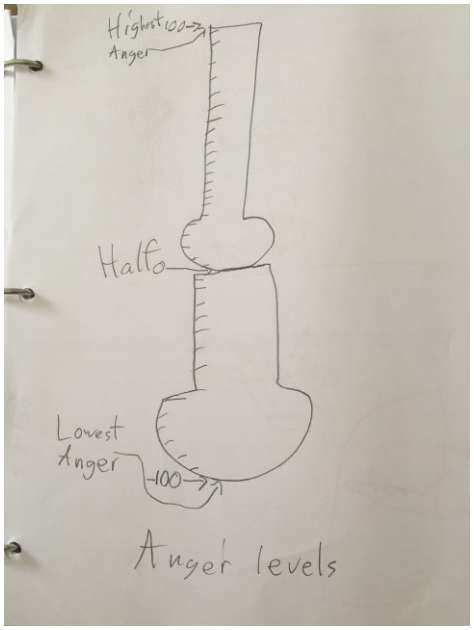

Figure 8. Tyler's post-test drawing

Emotion differentiation

According to the pre-test emotion cognition checklist, Tyler was observed to be unable to understand/differentiate emotions from within. It was observed that Tyler was able to differentiate one's own thoughts from another's, as well as differentiate between different viewpoints. During the pre-test interview, Tyler was able to differentiate between emotions by saying, "happy you're pretty much the opposite of sad" and "frustrated means more angry".

During lesson two Tyler made that comment, "you can't feel opposites like happy and sad" at the same time. During lesson three Tyler was able to explain a situation in which he felt three emotions at the same time; "sad, guilt, and bad". He describe a situation where he put a dent in his brothers 3DS. He said he knew he felt sad by "I felt bad for Luke" (name changed to maintain confidentiality), he felt guilty for making the dent, and he felt bad because "that thing cost a lot of money". Additionally, during lesson tree Tyler participated in emotion charades and was able to guess the other students emotions and was also able to act out his emotions in a way

that others could easily guess. His use of facial expressions was excellent in this activity. During lesson five Tyler completed the *when I was worried* worksheet and described this situation, "I felt worried when right after one of friends told me a black hole could appear any moment".

Tyler's showed a positive change over the course of the intervention (post-test) in his ability to understand/differentiate emotions from within. During the post-test interview Tyler is able to describe that he could feel three emotions at one time. "I could feel happy, sad, angry, disgusted, you could also feel multiple feelings at once and even three at once". Tyler was also able to describe a situation in which he did felt three emotions at once. "Where I was playing on the computer and I was right at the end of the complicated level and I died. I felt mad, I felt explosive, kind of sad and mad because I knew I didn't have the skills to finish the level. So I felt three". Overall, Tyler's showed a positive change in his understanding of emotion differentiation at post-intervention.

Perspective taking

Based on the rating from the emotion cognition checklist at pre-test, Tyler has a strong understanding of perspective taking. Tyler was rated a *yes* for each question regarding perspective taking. For example, the ability to take the perspective of another and be able to explain why and the ability to differentiate between different viewpoints (i.e.: understands people see things differently).

During lesson four Tyler was about to explain to the class which bubbles was the thinking bubble and the talking bubble. During the talking and thinking bubble activity Tyler was able to come up with a scenario as well as provide appropriate phrases for each bubble. During lesson five Tyler completed an activity in which he drew a picture from his dog's point

of view. He drew, “what my dog sees when he looks out the window”. Tyler said to the researcher, “I’m sorry it’s only going to be in these 4 colors because it’s the only colors that a dog can see in”. The colors were black, white, blue, and yellow. Tyler was the only participant that completed this activity correctly. Finally during lesson six, Tyler completed a worksheet in which he had to fill in the thought bubbles for different characters making different facial expression and body language. His phrases for each bubble appropriately matched each characters expression.

As previously mentioned, during the pre-test interview and emotion cognition checklist Tyler had a full understanding of perspective taking and this was not an area that needed much improvement. Tyler scored a yes for all questions on the post-test emotion cognition checklist once again and his post-test interview also confirmed his ability to understand perspective taking.

Coping strategies

Based on pre-intervention observations Tyler was rated on the emotion cognition checklist has possessing the ability to identify bodily warning signals his body, express what emotions feel like in the body, identify antecedents to emotional conflicts, and the ability to express his needs and desires appropriately when faced with emotional conflicts. However, it was observed that Tyler struggled with dealing with conflicts prosocially, identifying what coping strategy to use according to his emotion, and the use of appropriate coping strategies when faced with emotional conflict.

During lesson seven, Tyler described his bodily warning signals for anger as “my stomach flip flops and there’s a pressure in my arms”. When completing the worksheet he

indicated he feels his emotions all over her body and even drew organs such as his lungs and heart (please refer to Figure 9).

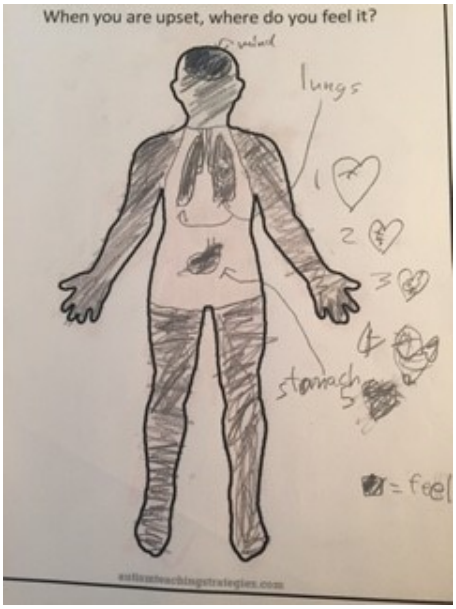

Figure 9. Tyler's bodily warning signal worksheet

Tyler enjoyed learning about the emotion thermometer, "I like the emotion thermometer because your face gets hot then cooler". He described that he often finds himself in the yellow zone. During lesson eight Tyler said, "With your enemies there will never be a solution", he referred to a situation in which he had a conflict with an "enemy". This shows an area in which Tyler struggled when it comes to problem solving. Tyler made the same comment during lesson nine, "arch enemies are people you always fight with, you can never solve problems with them". During the review lesson at the conclusion of the intervention Tyler shared what he learned from the intervention, "the emotion thermometer and the problem solving wheel is helpful".

As previously mentioned, Tyler struggled prior to the intervention when it came to understanding coping strategies and dealing with conflicts prosocially. Based on Tyler's post-test interview and emotion cognition checklist Tyler improved in all coping strategy areas. During

the interview he often referred to the emotion thermometer when discussing coping strategies ("it depends on what level you're at", "I use it at different levels, I would use a thermometer in my mind", "when I'm at 100 level, pretty much the max angry I can get"). When asked how he deals with his anger Tyler responded, "I just have to deal, when I'm mad I can't calm down so I just have to let the anger out. When I'm at a level 70 that's when I have to let the anger go out of my mouth and my body has to react, but when it's a t 69 or lower then I'd be able to calm down". Here it appears that Tyler understands that he can't let his anger get above 69, then he won't be able to implement a coping strategy, but at level 69 or lower he will be able to implement a coping strategy.

The SSIS rating completed by the teacher indicates that Tyler stay consistent with his *average* ratings social skills (as seen in Table 5). As seen in Table 6, Tyler showed fewer externalizing behaviors in the post-test rating for problem behaviors as reported by the classroom teacher. During the post-test interview Tyler explained how he is able to get things done in class when he is upset. He stated, "well anger I can't get much done. Well happy I just go and do my work carefully and when I am done it is a normal day but usually my anger levels are at zero." He continued to report, "I won't be too excited where I call out all of the time". It appeared that post-intervention Tyler had better control of his externalizing behaviors in the classroom in order to get more work completed.

Table 5. Tyler Scores from Teacher SSIS Rating Scale

Social Skills	Pre-Test	Post-Test
Communication	Average	Average
Cooperation	Average	Average
Assertion	Average	Average
Responsibility	Average	Average
Empathy	Average	Average
Engagement	Average	Average
Self-Control	Average	Average

Table 6. Tyler Scores from Teacher SSIS Rating Scale

Problem Behaviors	Pre-Test	Post-Test
Externalizing	Below Average	Average
Bullying	Below Average	Below Average
Hyperactivity/Inattention	Below Average	Below Average
Internalizing	Below Average	Below Average

Ramon

Knowledge of emotions (theory of mind)

Ramon showed that he possessed the ability to label emotions in facial expression and interpret body language (pre-test on emotion cognition). However, Ramon struggled in the understanding emotional prosody and understanding complex emotions in others. When asked about all the emotions he could feel in a day during the pre-test interview, Ramon reported excited, joy, and happy and expressed he is most happy when watching T.V. When asked to draw how he felt at his best and worst during the pre-test interview he drew the picture as seen below in Figure 10.

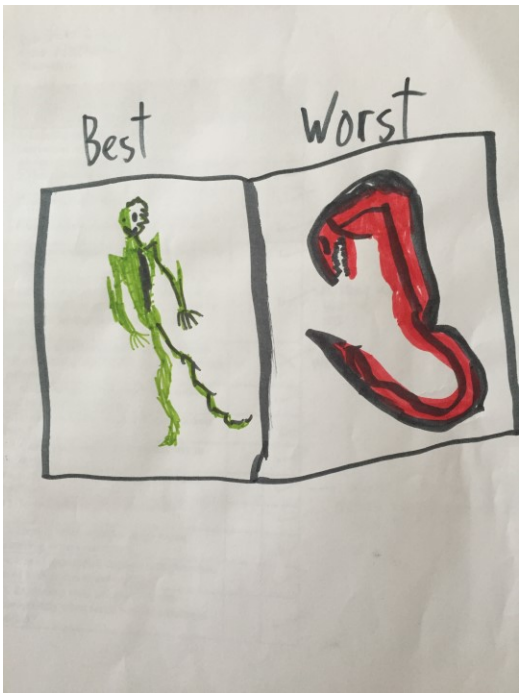

Figure 10. Ramon's pre-test drawing

When describing his drawing he stated, "It looks cool; it looks like someone was patient when drawing it." When describing the picture of him at his best he said, "Its green. I go a bit slow. For me it's because of the green, green mean good". When describing the picture of him at his worst he said, "It's because the face looks mad and it also looks like, its red and black".

During lesson one Ramon was able to describe each emotion and how he knew it was the emotion based on the characters facial expression and behaviors while watching the clips from the movie *Inside Out* ("For sadness, tears were coming out of their eyes and they were dragging around like they were upset"). Ramon participated well during the role-playing of emotions and he was able to understand the body language and facial expression. During lesson two, Ramon was able to fill out the emotion flash cards for the simple emotions such as happy, sad, and angry but not the complex emotions such as surprised, proud, and disappointed.

Ramon also participated in emotion charades where he struggled with acting out being frustrated and he needed help from the researchers; however he was able to act out the emotion, confused on his own. One area in which Ramon struggled the most is the understanding that one person can feel more than one emotion at a time. When trying filling out the worksheets during lesson 3 he responded, “I don’t know what that means” and left the worksheet blank.

The ratings on the post-test emotion cognition checklist showed positive changes in all areas related to knowledge of emotions. At post-intervention, Ramon understood emotional prosody and understood complex emotions in others. During the post-test interview Ramon was able to identify more emotions than he did at pre-test (“sad, angry, frustrated, anxious, uncomfortable, upset, and scared”). When asked to draw how he felt at his best and worst at post-test he drew the picture below (please refer to Figure 11).

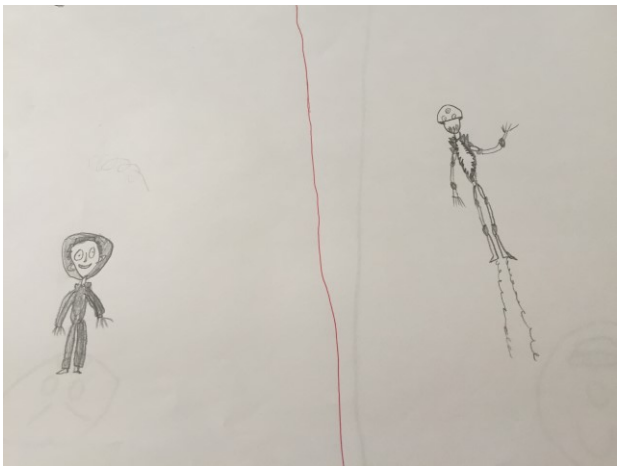

Figure 11. Ramon’s post-test drawing

When describing his drawing of how he felt at his worst (the image on the right side of the picture, Figure 11) Ramon said, “This one is like for me the spikey because he is mad. He has a mad face and a mad look in his eye”. When describing the picture of how he feels at his best he

said, “this one is happy, he has a happy smile, happy eyes, and he’s really, really happy because he has a jacket on”. When describing both pictures his main focus is on the characters’ facial expression.

Emotion differentiation

The pre-test emotion cognition checklist showed that Ramon had some difficulty understanding/differentiating emotion from within, mostly with complex emotions. He was rated as possessing the ability to differentiate one’s own thoughts from another’s. When asked during the pre-test interview if he ever felt more than one emotion at once, he responded, “I feel excited, I feel, um, um, I feel joy”. It appears that Ramon did not possess a clear understanding of feeling more than one emotion at a time and this is an area that needs improvement. During lesson five when asked to complete the, *I felt worried when* worksheet, Ramon was unable to think of a time he felt worried. However, so the, *I felt disappointed when* worksheet Ramon wrote, “I felt disappointed when I lost all over again”.

The post-test emotion cognition showed that Ramon did not display any changes over the course of the intervention in understanding/differentiating emotions from within. However, during the post-test interview, Ramon explained a situation in which he felt mad and sad. “I was doing my homework and my parents didn’t understand what I was talking about for my homework…I felt mad at first but then I felt mad and sad”.

Perspective taking

Ramon was a rated a *yes* on all items on the pre-test emotion cognition checklist for items pertaining to understanding perspective taking. This included, the ability to differentiate between different viewpoints (i.e., understands people see things differently) and the ability to take the

perspective of another and be able to explain why. This being said, the understanding of perspective taking was not an areas that Ramon needed to improve.

During lesson five in which the participants were asked to draw a picture from the perspective of someone or something else, Ramon drew from the perspective of a spacecraft. When he first began to draw he drew the spacecraft, indicating that he did not understand this activity. Ramon then erased the spacecraft and drew the earth and was able to explain that the spacecraft would see the earth. When discussing thought bubbles and talking bubbles, Ramon was able to identify which bubble we could hear and what bubble we couldn't and even stated, "Everyone has different thoughts" during lesson four. During lesson six when asked to fill in the thought bubbles of various characters with various facial expression and body language, Ramon was able to appropriately fill in the bubbles based on the facial expressions and body language he saw in these characters.

As expected the post-test emotion cognition checklist and interview both show that Ramon has a clear understanding of perspective taking.

Coping strategies

The pre-test emotion cognition checklist concluded that Ramon was not able to identify bodily warning signals in his body or express what the emotions feel like in the body. However, Ramon appeared to be able to identify antecedents to emotional conflicts, deal with conflicts prosocially, identify and implement appropriate coping strategies when faced with an emotional conflict, and finally, able to express his needs and desires appropriately when faced with an emotional conflict. During the pre-test interview Ramon was able to identify coping strategies such as, "Watching T.V, videos, game videos, and people talking videos". He also stated that,

"videos make my mind clear of everything I do". Ramon also identified that he "never gets upset in class". In regards to bodily warning signals when asked during the interview what happens inside his body he responded, "I don't really know, because I don't really know that much".

During lesson seven when discussing bodily warning signals, Ramon commented, "this is the hardest to answer; I don't know what I feel in my body. I don't want to do this, this is impossible. I don't know how it feels". Here it appears the Ramon really struggles with understanding bodily warning signals. Later in the lesson he was able to explain somethings he does with his body such as, "I hit my bed and scream, my hands are clenched". Here it appears he is still not completely grasping full understanding; however, it is starting to make more sense to him. When coloring the picture of a body to identify which parts of the body he feels his emotions he colored in the head, and used the color red (please refer to Figure 12).

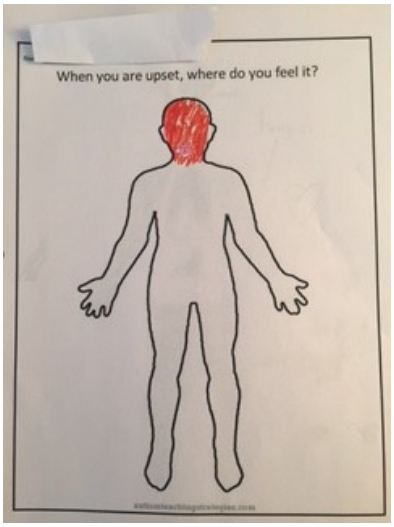

Figure 12. Ramon's bodily warning signal worksheet

The post-test emotion cognition checklist indicates that Ramon showed positive changes in his understanding of bodily warning signals in his body and the ability to express what emotions felt like in the body. When asked what his body does when he is upset he said, "I

clench my hands and my face turns red, and I clench my teeth when I'm talking". When asked about his breathing he responded, "Sometimes I breathe like I'm a bull…my heart beats faster." He listed coping strategies such as drawing, and he "puts a 'snakey' on and around my neck because I use it to help me calm down".

The SSIS rating completed by the teacher indicates that Ramon showed a positive change in social skills such as, assertion and empathy (as seen in Table 7). However, he was rated lower by the classroom teacher at post-test for the social skill responsibility. As seen in Table 8, there was no change in Ramon's problem behaviors as reported by the classroom teacher. The observations made by the researcher throughout the pre-test intervention period as well as during the intervention concluded that Ramon never displays problem behaviors in the classroom, which is why there was not a change in rating. Ramon did score higher in assertion at post-test intervention, this could be a result of the program. Ramon could feel more confident in his emotions and the emotions of others where he is able to be more assertive.

Table 7. Ramon Scores from Teacher SSIS Rating Scale

Social Skills	Pre-Test	Post-Test
Communication	Average	Average
Cooperation	Average	Average
Assertion	Below Average	Average
Responsibility	Average	Below Average
Empathy	Below Average	Average
Engagement	Average	Average
Self-Control	Average	Average

Table 8. Ramon Scores from Teacher SSIS Rating Scale

Problem Behaviors	Pre-Test	Post-Test
Externalizing	Below Average	Below Average
Bullying	Below Average	Below Average
Hyperactivity/Inattention	Below Average	Below Average
Internalizing	Below Average	Below Average

In conclusion, the results from the current study provide evidence that educating children with ASD on emotional awareness will improve their emotion regulation. The current study also proved that an emotion regulation training provided children with ASD with appropriate coping strategies. There was also some evidence that implementing positive coping strategies can reduce problem behaviors in the classroom. The themes that arose throughout the data such as knowledge of emotions, emotion differentiation, perspective taking, and coping strategies all helped answer and support the research questions. Overall, the participants gained an awareness of their emotions as well as the emotions of others. The participant's language of emotions developed, as they were able to explain and describe their emotions in a more complex way. Additionally, their overall knowledge of emotions developed.

Discussion

In general, the purpose of this study was to explore how children with Autism understand emotion regulation as well as how they cope when faced with an emotional conflict. More specifically, this study aimed to improve their emotion regulation by teaching them about theory of mind, perspective taking, and emotion differentiation. Additionally, this study aimed to teach the participants appropriate prosocial coping strategies in order to improve classroom behaviors and social interactions. Lastly, the intervention was designed to educate children with Autism on how to better understand as well as regulate their emotions and to teach them to cope with emotional conflicts more appropriately.

As children with Autism are on a spectrum, it is important to remember each child possess individual differences. The benefit of using this type of program with an ASD population

is that the program can be catered to each child's need and the lessons can be adapted for another group of children. Each participant in the current study did not share the same common strengths and weakness in every aspect; however the program was successful for each participant in a different way. The lessons that the participants participated in focused on teaching emotions (theory of mind), which led to understanding and being able to differentiate between emotions, understanding perspective taking, which finally led them to being able to learn about and utilize prosocial coping strategies.

Knowledge of Emotions

The ability to label and identify emotions is the key to understanding emotions. Children with ASD often display challenges understanding the emotional and mental states of others (Golan et al., 2010). Children on the Autism Spectrum Disorder often neglect other's emotional expressions (Rieffe et al., 2007), which was observed among most participants during the pre-test observations in the current study. When the intervention began all participants had some knowledge of simple emotions. Most participants struggled with understanding and identifying complex emotions in themselves and in others. The emotions that the participants were able to identify during pre-test were emotions such as, happy, sad, and mad. Going beyond those simple emotions is where they appeared to struggle with identifying as well as their meaning.

Additionally, children with Autism struggle with the ability to decipher facial expressions, body language, and verbal expression. Linder and Rosen (2006) suggested that children with ASD can be dependent on verbal content in order to decode emotions.

One commonality seen through the post-test data was that every participant improved regarding their baseline knowledge of emotions. Another observation is that each participant's

pre and post-test drawings developed; each participant included something that they learned from the lessons into their post-test drawing. Ramon, Michael and Nicholas included facial expressions, and Tyler included the emotion thermometer. The pre-test data showed that Nicholas needed the most improvement in this area; however the other three participants also needed improvement even though it appeared that they grasped some areas more than Nicholas. It is important to highlight that each participant is very different from the other; therefore in discussing the current study one will not see common results or trends among all four participants across every aspect.

Once each participant gained a solid understanding of emotions and was able to identify both simple and complex emotions they were ready to move onto the next part of the intervention; learning to differentiate between emotions. Understanding emotions and building that knowledge of emotions is the gateway to improving emotion regulation. It is important for children to first understand and learn about emotions in order to be able to differentiate between emotions (Erbas et al., 2013; Landy & Bradley, 2014; Rieffe et al., 2007).

Emotion Differentiation

To review, Erbas et al. (2013) describes emotion differentiation as the ability to possess knowledge of one's own emotions and the ability to differentiate between different emotional states. Emotion differentiation is also the ability to describe how one is feeling and the knowledge of specific antecedents and consequences related to one's emotions (Erbas et al., 2013). As previously mentioned, in order to ensure the participants could understand emotion differentiation they must first have a clear understanding and knowledge of simple and complex emotions. Reviewing emotions, interpreting body language and emotional prosody allowed the

participants to understand the differences between their emotions as well as other peoples' emotions.

Overall, this was a common area of struggle among all four participants. More specially, Ramon struggled the most at pre-test and throughout the intervention. Some improvement was seen in Ramon; however it is still an area that he should continue to practice and further follow up would be beneficial for him. Nicholas displayed a lot of difficulty in this area during pre-test as well; however he displayed great improvement throughout the intervention and at post-test.

Having a clear understanding of emotions (simple and complex) and having the ability to differentiate between emotions really allowed the participants to move forward and to understand perspective taking. Without a clear understanding of Theory of Mind, and emotion differentiation, a person would be unable to understand another's point of view.

Perspective Taking

As previously mentioned, perspective taking is a complex set of cognitive processes which creates the ability to infer the mental states of others (Gould et al., 2011). Perspective taking is an important social capacity that allows a person to listen and most importantly understand points of view (Landy & Bradley, 2014). The ability to share, to take turns, to show empathy are all components of perspective taking (LeBlanc et al., 2003). It is important for these skills to be integrated across the curriculum and practiced throughout the day and across settings such as the classroom and playground.

A common observation among most participants was their inability to understand their peers and their teachers' point of view. Socially, is where these participants displayed the most difficulties. Ramon was the one participant where negative social interactions were not observed;

however he still needed improvement in this area. Nicholas who is described by the classroom as being very rule bound struggled with perspective taking the most. During pre-test observations Nicholas was observed numerous times arguing with the teacher as a result of this characteristic. The teacher created a mantra for him; “Sometimes you’re right and sometimes you’re wrong” because it was so problematic in the classroom. Throughout the intervention, Nicholas showed improvement in this area this part of the intervention was particularly useful for him along with the other participants.

Possessing knowledge of emotions, understanding emotion differentiation, and perspective taking create a necessary platform for children with ASD to learn and implement prosocial coping strategies. Imagine how difficult it is for a child, even a typical developing child to cope with emotional conflicts prosocially without understanding emotions, being able to tell the difference between emotional states, or not understanding how others feel? This would be impossible even for typically developing adults. This is why the lessons on coping strategies were implemented as the last lessons of the intervention.

Coping Strategies

The ability to display prosocial coping strategies when faced with an emotional conflict was the one area in which the participants struggled with the most during pre-test evaluation. Children with ASD often display poor social maturity (Peterson et al., 2007) which often results in problematic behaviors presented in the classroom and among their peers which is why teaching prosocial coping strategies coupled with emotion regulation was necessary for the current study. Prosocial behaviors are important in the classroom adaptation and in creating positive peer relationships (Jahromi et al., 2013).

All participants improved in the ability to identify bodily warning signals in their body, express what emotions feel like in the body, and identify antecedents to emotional conflicts. Overall, this current group of participants could benefit from more lessons focused on coping strategies, and more specifically on implementing prosocial coping strategies. It was observed that overall each participant was able to create a better understanding of what a prosocial coping strategy is and was able to explain when they would need to implement them; however, each participant could benefit from a booster session or some type of follow up intervention to ensure that these strategies are being implemented when needed across different settings including the classroom.

It is important to highlight, the improvement that was observed among the participants would not have been present if they did not learn about theory of mind, emotion differentiation, or perspective taking beforehand so that they can first understand their own emotions or the emotions of those around them and then implement the appropriate prosocial coping strategies.

Impact of the Interview

The interview at pre and post-test intervention was a crucial component. The results from the interview reflected the participants' progress that may have resulted from the intervention lessons. The data gathered from the interview provided the participants with an opportunity to displayed the effectiveness of the intervention. The interview allowed the participants to tell their story and their experiences from their perspectives. Additionally, it provided trustworthiness to the results of the study. Overall, among all four participants, improvement was seen from pre-test to post-test with regards their views about understanding their emotions and those of others through the interviews. The interview focused on what was covered during the lessons. The

interview questions allowed the researcher to discover interesting and even unexpected themes throughout the data. A lot of data was collected during this intervention technique. Additionally, it was a simple way to collect meaningful and useful data. Interviews allowed the participants to have a voice. In addition, the researcher wanted to hear from the participants about how they felt about the intervention as well as how they felt they progressed.

Hayes and Singh (2012) described a disadvantage to using individual interviews as the participants may not be able or willing to express their experiences accurately. Therefore, it was important to include the drawing at the end of the interview in case some participants found it difficult to express themselves through words and it was easier for them to express themselves through art. In the end, all participants were able to easily express themselves through both the interview as well as the drawing. All participants were even all able to explain to the researcher what they drew and why they drew it.

The interviews allowed the researcher to answer all three research questions. Through the intervention the researcher learned how educating children with ASD on emotional awareness improved their emotion regulation, whether or not emotion regulation training would provide children with ASD appropriate coping strategies, and finally, whether the implementation of appropriate coping strategies reduce problem behaviors among the classroom.

Intervention

The intervention that consisted of 11 lessons focused on knowledge of emotions, emotion differentiation, perspective taking, and coping strategies was an effective intervention for this population. The participants' response to the intervention was overall positive. When the intervention was over, some of the participants asked, "What are you going to teach us next?"

They appeared sad that the intervention was over. There were a few occasions where some participants struggled with the activities, such as Ramon, when asked to describe a situation in which he felt more than one emotion at a time, as well as when some participants were having a difficult day and they needed to take a lot of breaks during the lesson and therefore missed some material. Having the help from the internship student was useful for this intervention. While the internship student focused on leading the lessons, the researcher was able to focus on recording viable field notes.

It was important to incorporate components of the PATHS program into the current study as PATHS has been found to increase a child's ability to discuss emotions as well as self-efficacy in displaying their emotions (Bidgood et al., 2010). In a study conducted by Kelly et al., 2004, the participants found the PATHS curriculum to be original, valuable, positive, and enjoyable. These were components that the researcher wanted to employ in the current study as well. Based on the reactions and feedback from the participants and the classroom teacher, they felt that the intervention was useful. Even though each participant did not require much improvement in some topics that the lessons covered at pre-test, they still benefited and learned a great deal more on how to better regulate their emotions and how to talk about their understanding of their own and other peoples' emotions.

Teacher Rating Scales

The classroom teachers were accommodating and willing to help as much as they could. Therefore, they did not have any hesitation on their willingness to complete the SSIS teacher rating for the four participants at pre and post-test. The scale provided an opportunity to capture

multiple perspectives and to include teacher observations that are crucial to children's development across settings and across the different developmental domains.

Emotion Cognition Checklist

The emotion cognition checklist that was created by the researcher and the internship student became a useful tool to measure improvement among each child. The checklist was created based on the three research questions. Even though checklists can be very black and white and lack details of the behaviors that were observed along with context (Bentzen, 2009), the researcher made it a point to include a comments column in order to make the checklist more reliable. It was important to include the checklist as this form of data collection can identify behaviors and skills that the researcher wanted to observe and monitor (Bentzen, 2009). Like the interviews, the data collected from the emotion cognition checklist allowed the researcher to answer all three research questions. Inter-observer reliability was allowed with the use of the emotion cognition checklist, as both the researcher and the internship student completed the checklist on their own and then collaborated together afterwards to create a more accurate rating for each participant. Additionally, this allowed for less bias among the researcher. The checklist was efficient as well as easy to use. The checklist allowed the researcher to measure the participant's level of knowledge that they possessed at the pre and post-test.

Video-Self Modeling

Video-Self Modeling is known to be an effective intervention tool for children with Autism Spectrum Disorder, especially in improving their social skills (Gelbar et al., 2012). The participants all appeared to enjoy making their VSM's, each child asked to watch their video as soon as we were done recording. Each participant participated without any hesitation and

maintained a positive attitude during the recording. Each video only needed to be recorded once, since the participants easily followed directions and enjoyed the activity. Gelbar et al. (2012) stated that when the child views themselves in the video their self-efficacy increases since they tend to learn better from models that resemble him/her and in this case they were the models. Even though the researcher and the internship student were not able to monitor how often the participants viewed their VSM, it was still found to be a useful intervention technique in the way that it captured the participants' attention and interest. As Akmanoglu (2015) stated, VSM allows the child to maintain the skills they learned after the intervention. These videos were recorded on the classroom's iPad in order for the participants to have access to view them when they found it necessary.

Limitations and Future Directions

Although this study has shown some benefits in increasing a child's emotional awareness to improve emotion regulation there are certain methodological limitations need to be addressed. First to be addressed is the length of the intervention which could be considered a limitation to this study. Eleven sessions over six weeks is not a long time; more improvement may have been observed if the intervention was longer. Also, the lack of follow-up or booster sessions to ensure that what the participants learned is maintained. Another challenge was not being able to control that all participants were present during the intervention. Some days a participant would be absent or having a difficult day and therefore would need to take some time away from the lesson. For example, Michael missed lesson one and part of lesson 2 due to illness and there were a few occasions where Nicholas needed to miss parts of the lessons due to feeling overwhelmed (lesson three, four, and eight); This resulted in some missing data. Additionally, there were instances were some participants were having a difficult day and would not be willing

to complete a worksheet or were particularly quiet and were not participating actively during a lesson. Each of these limitations will be explained more in detail in the subsequent sections.

Video-self modeling challenges. As previously mentioned, the main challenge with incorporating the VSM intervention was the lack of follow up. The researcher and internship student were unable to monitor if the participants were viewing their video and how often. In future research a greater effort can be made to monitor this intervention more closely. Another possible limitation to the results of the current study is that Nicholas had already had a VSM and behavior plan in place with the school psychologist which could have influenced the data. It could have influenced the data in the way that Nicholas was more advanced in this area during the pre-test or that he showed more progress than the other participants at post-test due to the face that he was watching his VSM on a daily basis. Overall, the VSM intervention methods were a positive method in the way it captured the participant's interest; however, it was a limitation in the current study based on the lack of possibility of monitoring the intervention.

Researcher bias. This being a qualitative research study, subjectivity is always present throughout the research. It is important to recognize those times in which subjectivity was present. There were times throughout the lessons when the participants would go off topic, or what I thought was off topic. Often times I would try to bring the conversation back to how I wanted to it go, without realizing that to the participants they might not have felt off topic; They were just explaining their thoughts in a way that I was not understanding the relevance. Another example is when the participants would struggle with an activity; I often thought it was because they were not having a particularly "good" day, when in fact it could have been that they did not understand the material. It could have been a foreign concept to them for which they needed more explanation that I was not providing.

Keeping field notes was critical in order to maintain researcher reflectivity. The reflective process is crucial in order for the researcher to maintain creditable and trustworthy (Hayes & Singh, 2012). Especially, looking back on the times mentioned previously it was helpful to look back at my context notes and see what exactly was happening in that moment. For example, how often the participant needed to take a break from the activity, or the questions that they asked, or if they were being particularly quiet that day. Overall, I felt that I was able to stay authentic, keep an unconditional positive regard, and maintain empathy (Hayes & Singh, 2012) throughout the study.

Overall, I felt that I was able to limit researcher bias given my background and experience. Working with the staff at Sunshine School previously and working with the participants since September helped me build an important bond with the teachers. It also allowed me to build rapport and trust with the participants in order to ensure an equal power dynamic between the researcher and the participants.

Future research. The current study focused on the children's perceptions of their emotions and how they cope with emotional conflicts; in addition, the activities and lessons provided children with the opportunity to work on emotional awareness as a means of facilitating their emotion regulation and prosocial coping strategies. There were a few components of the current study which could warrant further development. As the lack of follow up was one of those components, further investigations could create a follow up program including booster sessions to ensure the participants maintain the skills learned. Additionally, in the current study the researcher was unable to monitor how often the participants were viewing their VSM's; therefore, further research could attempt to arrange with the classroom teacher to monitor how often the participants would view their VSM's. The researcher could ask the classroom teacher

to keep a log to record all the times the participant views the VSM. Finally, further research should consider increasing the length of the intervention, as a longer intervention could increase retention.

The most beneficial aspect to the current study is that it is able to be modified for any type of population. This program can be used with children on all levels of the Autism spectrum if adapted appropriately. It could also be used with other populations such as children with emotional, social, and behavioral difficulties (Beidas et al., 2010; Kam et al., 2004; Williams et al., 2004; Yeo & Choi, 2011). As previously mentioned, this program is a compilation of numerous other programs which would benefit many children, students, teachers, schools, and even parents.

Implications and Practical Applications

Regardless of its limitations, this study has contributed to the developing research on Autism and emotion regulation. The current study was unique in the sense that it was created by the researcher and internship student by taking components of other programs such as PATHS, CBT, and VSM and making it their own. All of the programs that were incorporated into this study have all been found effective among children on the autism spectrum disorder; therefore it made sense to the researcher to not just use one intervention but to combine interventions in order to adapt the intervention to the current context.

Additionally, this study creates awareness of the challenges that children with Autism face in regards to regulating their emotions as well as applying prosocial coping strategies. Autism is a spectrum disorder meaning that each child faces different challenges at different levels in regards to how they regulate their emotions and how they cope when faced with an

emotional conflict. It is important for not only the child to understand their challenges but the classroom teacher as well. Once the child and the classroom teacher are aware of the child's difficulties they can work together to help create a positive learning environment for the child which ends up creating a positive teaching environment for the teacher. If a child is able to better regulate their emotions and cope with emotional conflicts prosocially fewer negative behaviors may be expected in the classroom. Hammond et al. (2009) stated that children can in fact learn how to control their emotions and the current study helps to show some support for this notion. However, the children cannot always do it alone. It is important for children with ASD to be taught positive emotion regulation strategies in order to improve their social functioning and their academic achievement (Hammond et al., 2009). Therefore, it is important to educators, parents, paraprofessionals, and other significant figures in their daily lives to take part in teaching these children about their emotions that may lead to improvement in emotional regulation.

The educators at Sunshine School expressed their excitement towards the current study as they have been trying to implement the PATHS program. However, it was not in their schools budget to purchase the program. For the current study it did not cost the researcher anything to incorporate part of the PATHS program and ideas and adapt them to children with ASD in the current setting. The participants responded well to the intervention and overall enjoyed the content. The researcher did see improvement across all four participants which provided evidence that the intervention was useful and providing opportunity for the children to improve their skills. This is one of the first studies to incorporate the PATHS program exclusively with children with ASD.

To conclude, this study heightens the importance of the impact of an intervention that is adapted to the needs of the children. More particularly this type of intervention has the potential of improving children's daily classroom experience and eventually have an impact across settings and situations. Children with Autism Spectrum Disorder can in fact learn to regulate their emotions, with the help of educators, and the implementation of programs such as the one adapted for this study.

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Appendix A

Emotion Regulation Sessions Breakdown and Data Collection

Researchers will be going to the setting, twice a week. In which, two sessions per week will be conducted.

Session	Topic	Data Collection
Pre-Test	• Child Interviews • Emotions Checklist	• Child Interviews • Emotions checklist • Social Skills Improvement System (SSIS) Rating Scale Teacher • VSM collection
1	Knowledge: • Labeling Simple Emotions • Labeling Complex Emotions	• Context notes • Worksheets
2	Knowledge: • Review • Body Language • Emotion Differentiation	• Context notes • Worksheets
3	Review: • Review of Emotions • Review of Emotion Differentiation	• Context notes • Worksheets
4	Knowledge: • Review of Emotion Differentiation • Theory of Mind • Desire vs. Situation based Emotions	• Context notes • Worksheets
5	Knowledge: • Review of Emotions • Review of Theory of Mind • Perspective Taking (1st step)	• Context notes • Worksheets

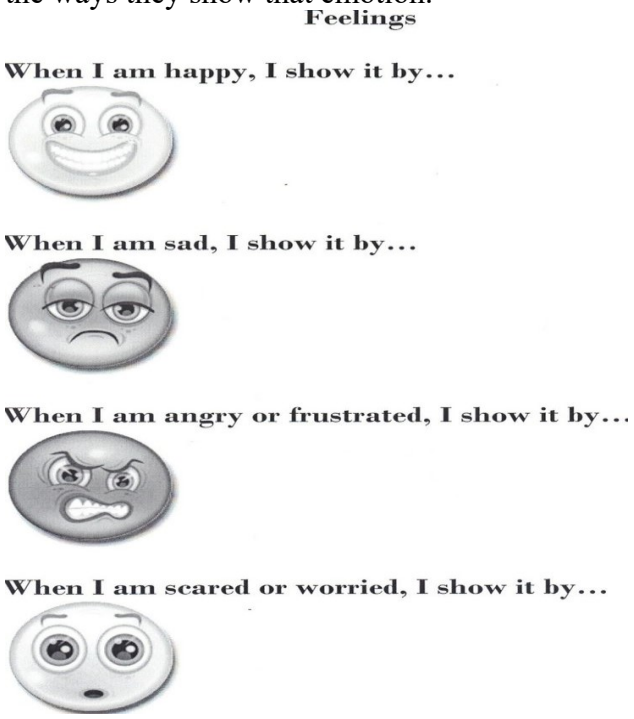
6	• Review of TOM • Review of Perspective Taking (1st step) • Perspective Taking (2nd step)	• Context notes • Worksheets
7	Knowledge: • Review of TOM • Review Perspective Taking (2nd step) • Bodily Warning Signals	• Context notes • Worksheets
8	Knowledge: • Review of Warning Signals • Problem Solving	• Context notes • Worksheets
9	Knowledge: • Review of Warning Signals • Review of Problem Solving • Coping Strategies	• Context notes • Worksheets
10	Review: Discussion • Emotions (All) • Body Language • TOM	• Context notes • Worksheets
11	Review: Discussion • Perspective Taking • Warning Signals • Problem Solving • Coping Strategies	• Context notes • Worksheets
Post-Test	• Child Interviews • Emotions Checklist • Teacher Rated SSIS	• Child Interviews • Emotions Checklist • Teacher Rated SSIS

Appendix B

Session 1: Knowledge

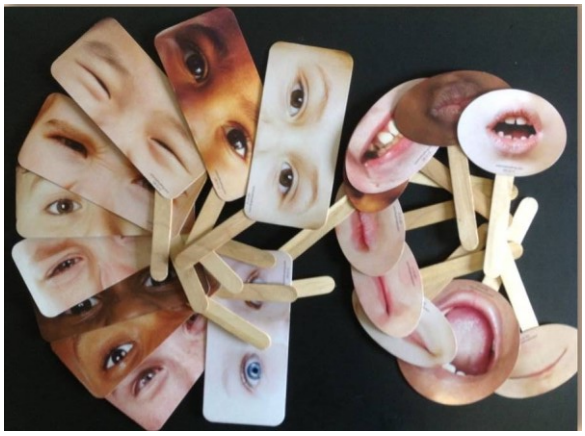
Objective: To help participants learn more about simple and complex emotions in others, using facial expressions.

- Time 1: Presenting children with a worksheet aimed at representing simple emotions and the ways they show that emotion.



- Time 2: Presenting children with complex emotions, demonstrated through facial expressions

- These will be presented through the use of hand made flashcards, where images will focus on the eyes and mouth, to better with over selectivity issues of this given population.

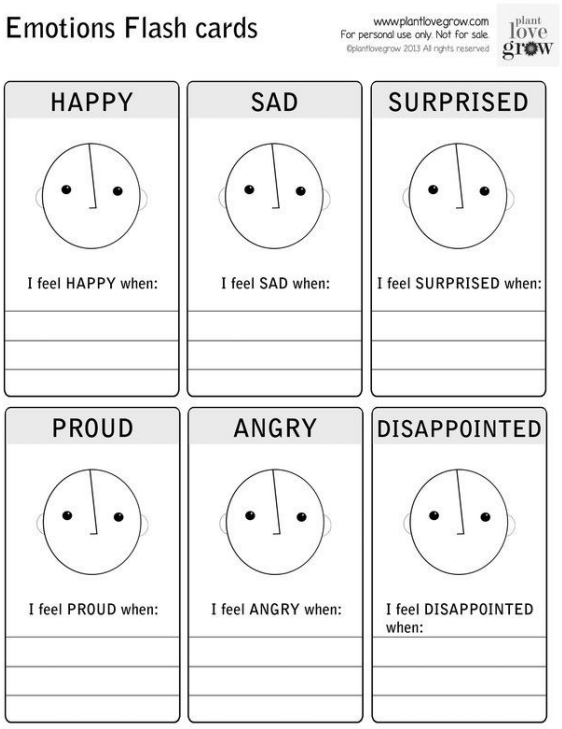


Session 2: Knowledge

Objective: The objective of this lesson will aim at educating the participants about emotions in others, using body language and prosody as cues. In addition, it will aim to identify emotions from within (emotion differentiation).

- Time 1:
  - Review labeling complex and simple emotions
- Time 2:
  - The use of emotion using prosody and body language will be represented through videos. In addition to the use of videos, researchers will act out scenarios, in which the use of prosody and body language will demonstrate certain intentions. The children will then be asked to interpret the scenario, provide insight to the emotion and the reasons why. Discussion will address tone of voice, and how different pitches reflect different emotions and intentions. This will help further emotional awareness of others (Lindner & Rosen, 2006). Furthermore, discussion will address body language and how different postures and stances, can suggest different intentions and feelings (Golan et al., 2010; Lozier et., 2014).
- Time 3:

- This part of the lesson will aim to identify how emotions get differentiated from within. For example, using the worksheet provided, children will describe instances of when they felt a particular emotion. Afterwards, discussion will be had describing how different scenarios can lead to the same feeling. In doing so, this will also provide context to the particular emotion, in that it will provide antecedents and consequences to the emotion (Elbas et al., 2013). Also, discussion about how emotions can mean the same thing, but using different words (synonyms).

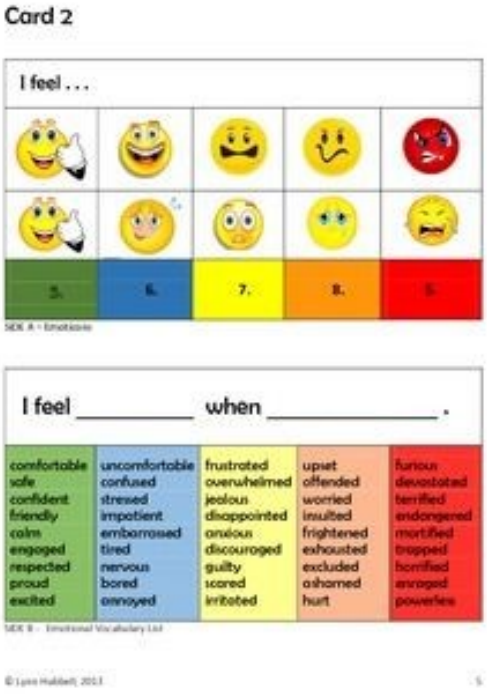


- Time 3 Cont:
  - In addition, given the difficulty children with ASD have in using their own narratives to describe an emotional situation, this lesson provides practice in reflecting and the description of their feelings involved and why (Brown et al., 2012; Erbas et al., 2013; Goldman, 2008).

Session 3: Review

Objective: Given the complexities of understanding emotions and the importance this step has for further comprehension, the objective of this lesson is to simply review previously discussed lessons. With such, using new scenarios and worksheets, in order to better solidify comprehension and generalization.

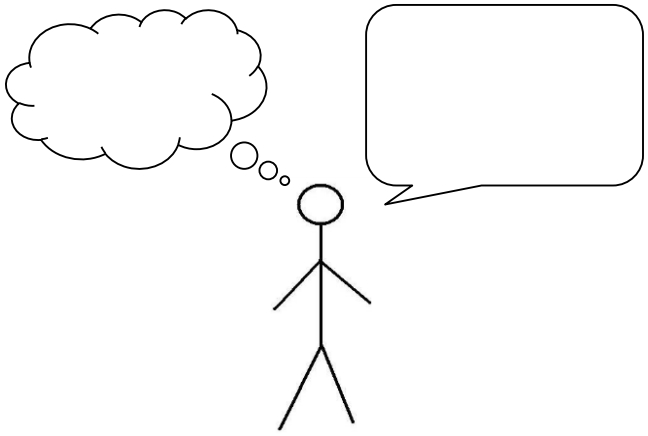
- Time 1: Review of Emotions in Others
    - Provide new scenarios, using researchers and classroom teachers.
    - Playing emotion charades, where the children get involved, and have to act out a particular scenario using emotional expression (i.e.: facial expressions, prosody, and body language). This is based upon the PATHS feelings unit (Domitrovich et al., 2007; Kam et al., 2004).
- Time 2: Review of Emotion Differentiation:



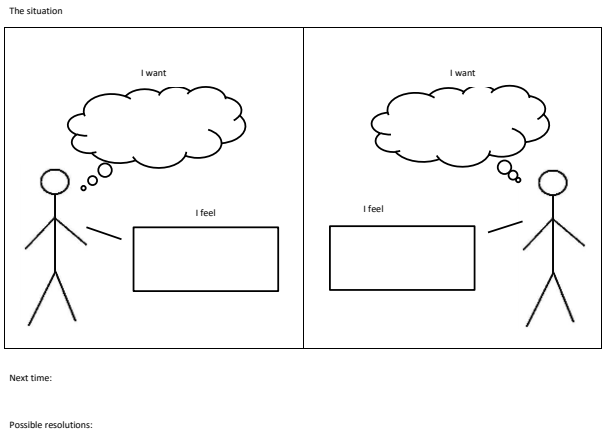
Session 4: Knowledge

Objective: The objective of this lesson is to address insight into theory of mind (TOM). More specifically, provide children with the ability to differentiate thinking versus talking, and how people have thoughts different than our own. In doing so, comparing and contrasting different desire based emotions in different TOM contexts and how they might feel.

- Time 1:
    - This part of the lesson will address a situation in which one person is thinking something. The child will then have to explain how they would then behave using their words, according to their thoughts.



    - Afterwards, a situation will be presented to them, where there are two people in the scenario and the children will have to perform a situation autopsy



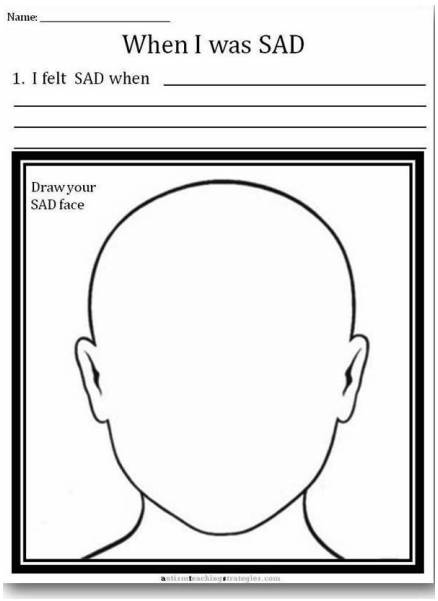
- Time 2:
    - This part of the lesson will address desire-based emotions. For example, someone in a story will be thinking they want a candy bar and they think they will get one, but they get a carrot instead. How must that person feel? And why? Answering this question is based upon understanding and interpreting the mental state of another based upon thought beliefs (Begeer et al., 2008; Lauritsen, 2013).

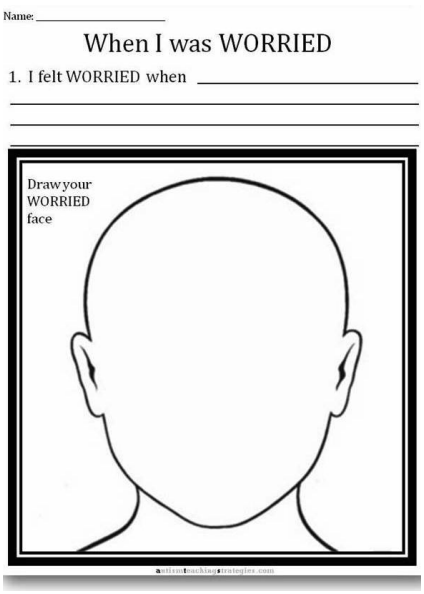
Multiple scenarios will be read to the children, in addition to visuals helping to better represent their thoughts.

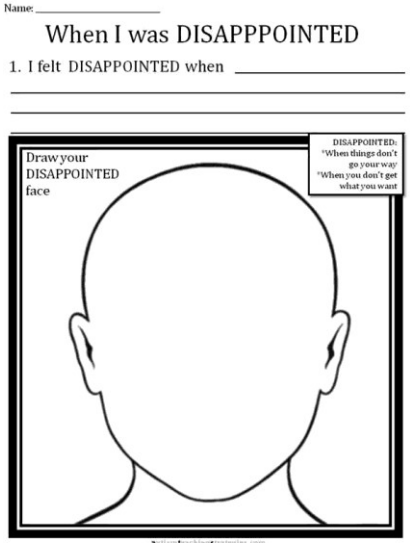
Session 5: Knowledge

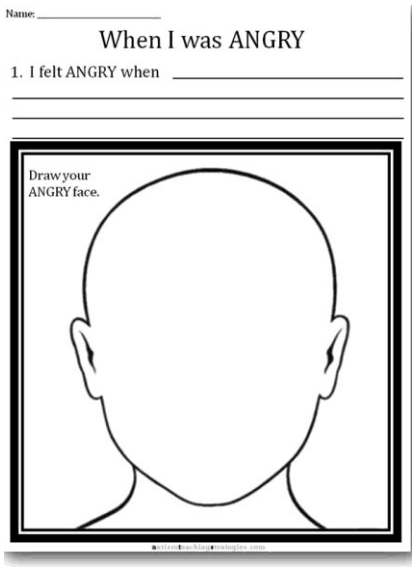
Objective: The goal of this lesson is to provide some review, emphasizing negative emotionality and differentiating from within. In addition, provide the groundwork in perspective taking skills.

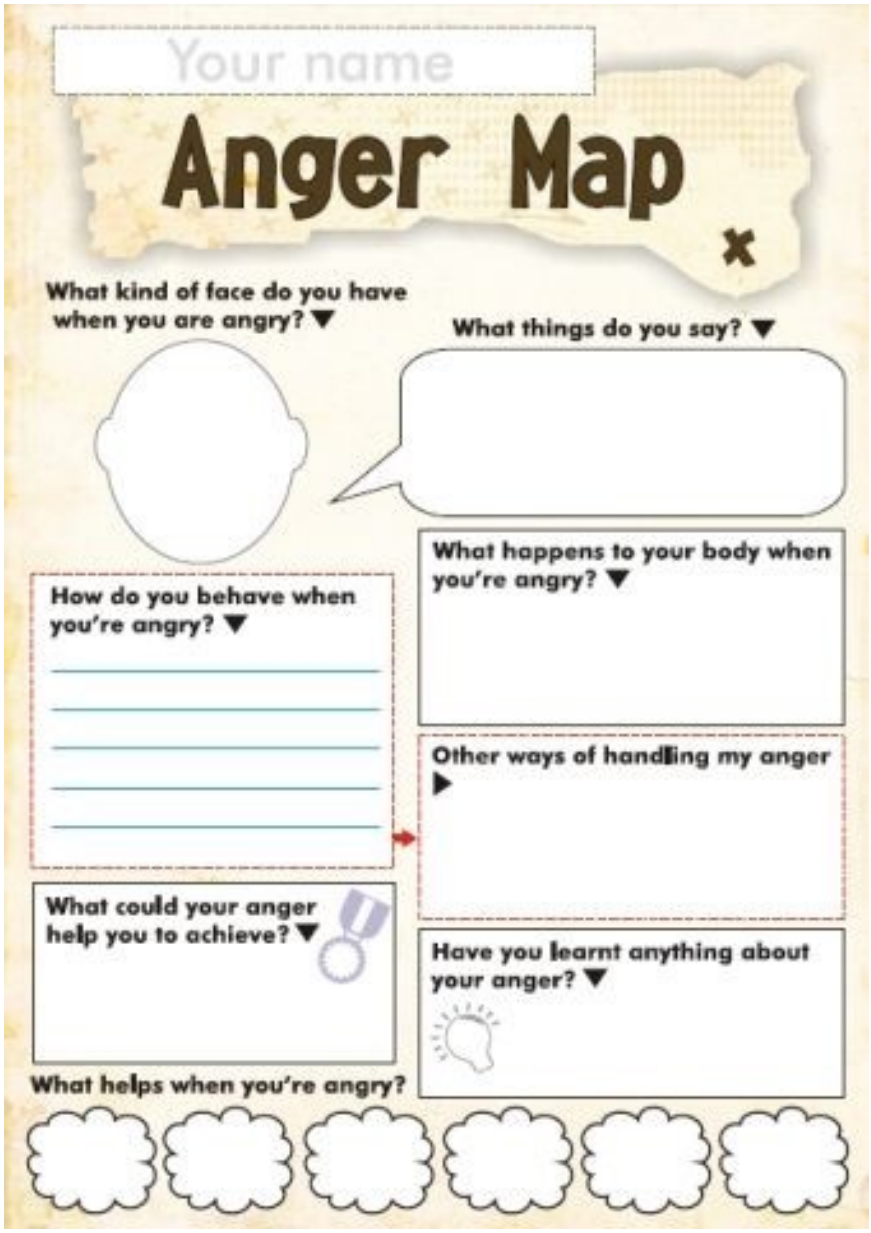
- Time 1:
  - Review lessons on emotion differentiation from within











Reviewing negative emotions, how they get represented and when they occur, allows for better awareness. With awareness, these children will be better equipped at responding to these feelings (Elbas et al., 2013).

- Review of TOM + Desire vs. Situation based emotions using different scenarios but the same principles.

- <u>Time 2:</u>
  - 1st step Perspective Taking:
    - The first activity will be led by using a double-sided paper; one side will have for example, a frog, while the other will have a lion. The researcher will be sitting in front of a child one side facing the child and the other

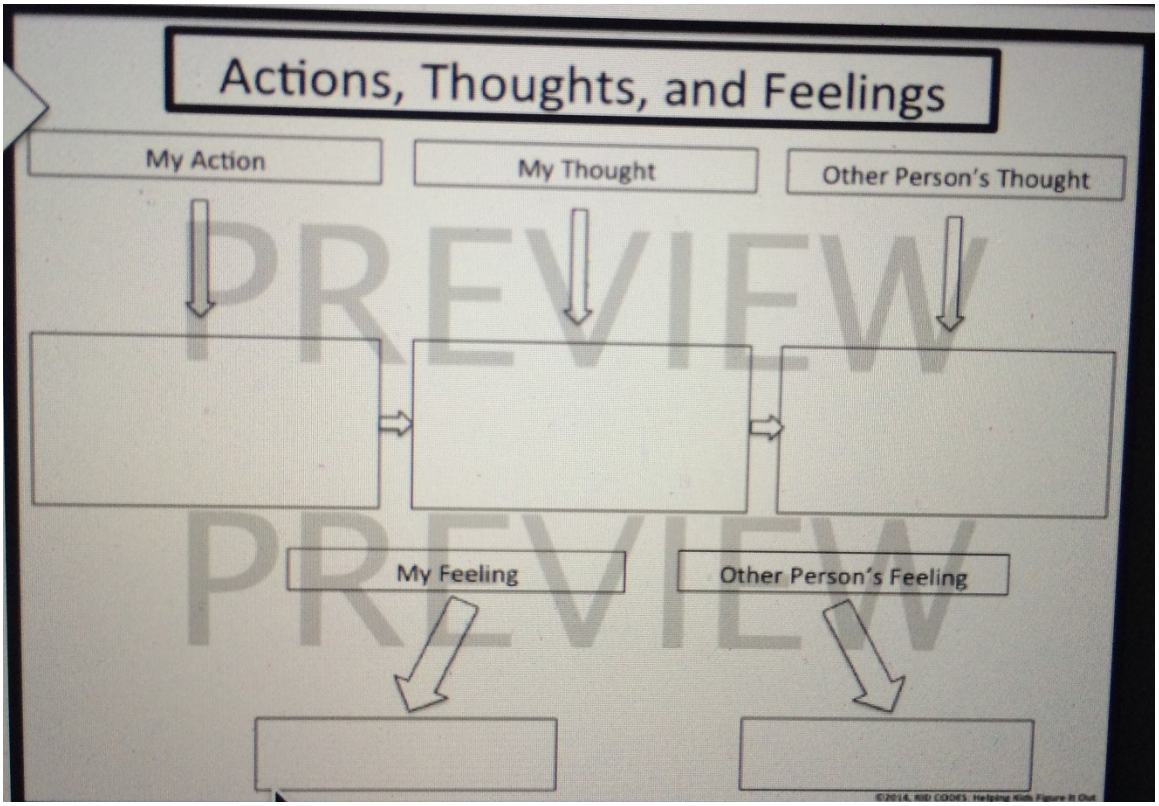
side facing the researcher. Discussion will be had on if we see different animals and why. In doing so, this will provide children with the first step of perspective taking (Gould et al., 2011); allowing children to explore what people see that is different to their own line of perspective.

- The second activity will be using 3D color glasses, where the children all have different colors. The children will be responsible to identify what color the others see the world.
- The last activity will be perspective drawing→ the children will be responsible to draw something from someone else's perspective. For example, drawing a bird, so therefore the child is responsible to draw what their perspective looks like up in the sky looking down.

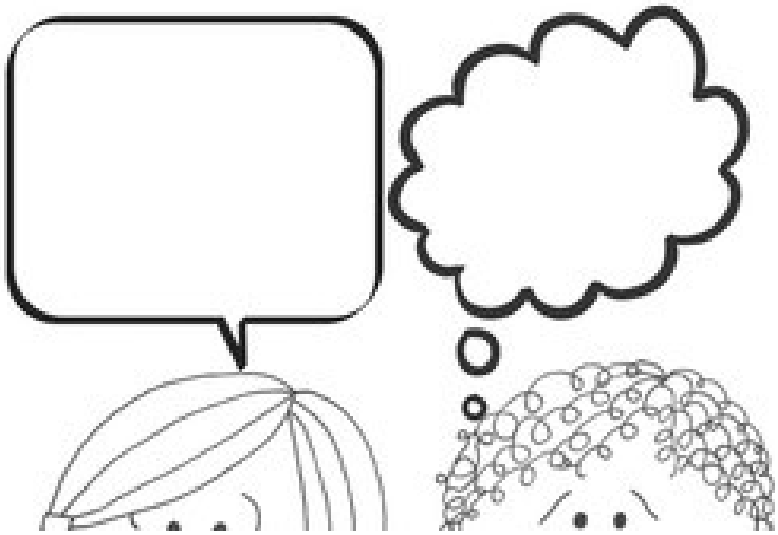
Session 6: Knowledge

Objective: The goal of this lesson would be to continue review, and expand on perspective taking skills. Essentially, apply perspective taking to context with peers.

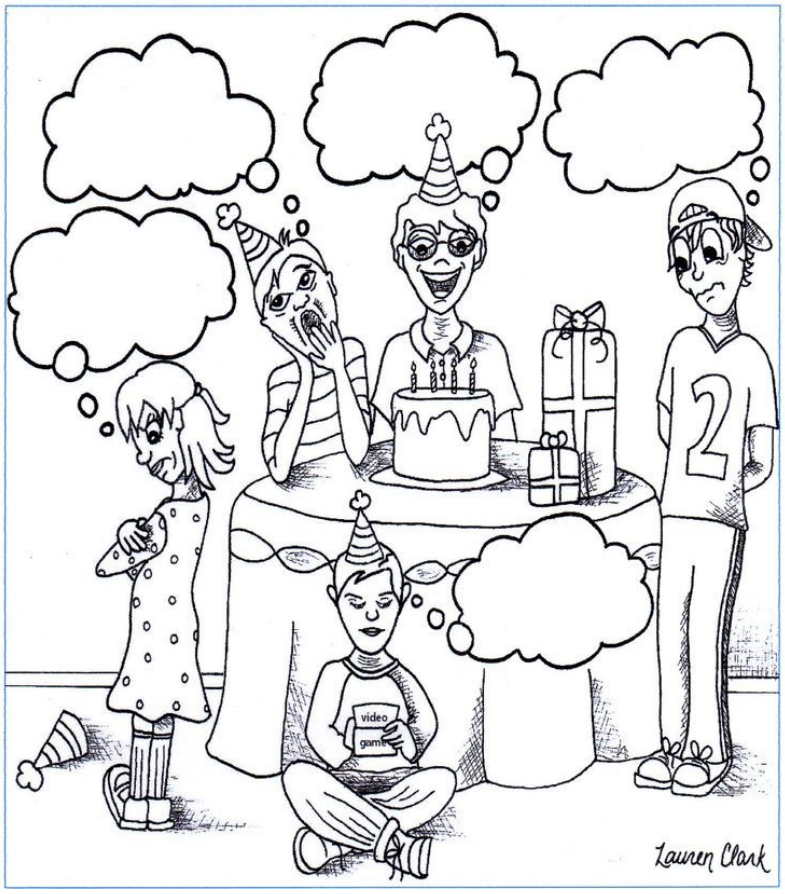
- Time 1: Review will focus on TOM and the first steps to perspective taking. All activities will be using different scenarios.
    - For example, the following worksheet will help direct perspective taking discussion, using the new scenarios provided.



Time 2: At this point, the researchers will begin teaching perspective taking skills generalizing it to peer contexts. So for example, have one peer say something, and the children have to interpret how the other person much feel and be thinking.



- If the children are able to interpret successfully, then the following worksheet will be provided.

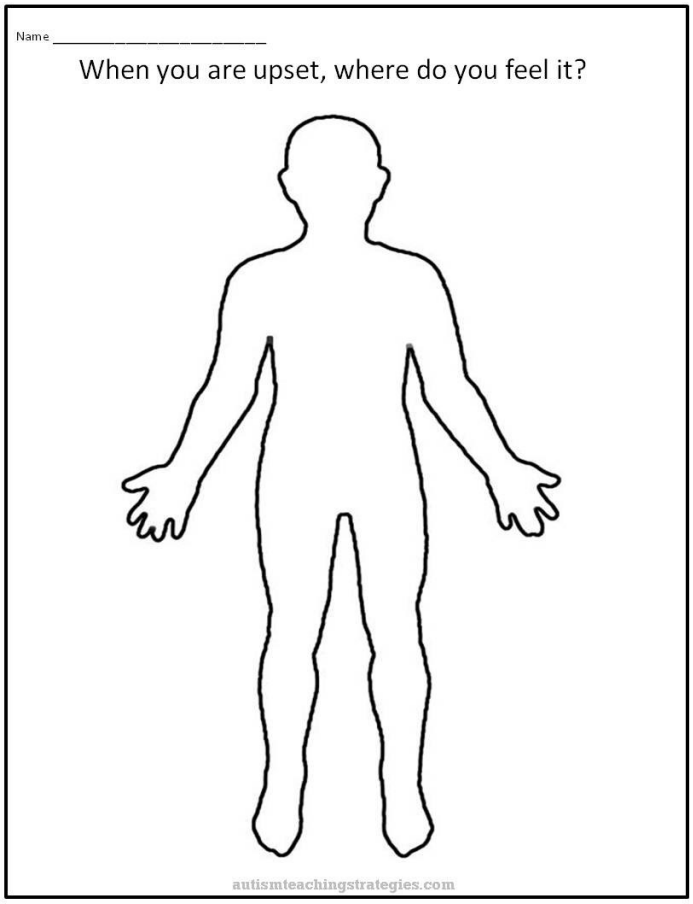


- In providing these scenarios, the children are forced to think how the other must be feeling based upon verbal exchanges, facial expression/body language, and/or context. Therefore, this process of reflecting on another person's thoughts are encouraging the much needed prosocial interaction (Begeer et al., 2008; Charlop-Christy et al., 2011; Lauritsen, 2013; Lindner & Rosen, 2006; Peterson et al., 2007).

Session 7: Knowledge

Objective: The objective of this lesson is to further review TOM and perspective taking skills, through the use of new scenarios. In addition, introduce bodily warning signs to emotional conflict. Essentially, becoming more aware of the internal bodily triggers that allow children to identify emotions from within.

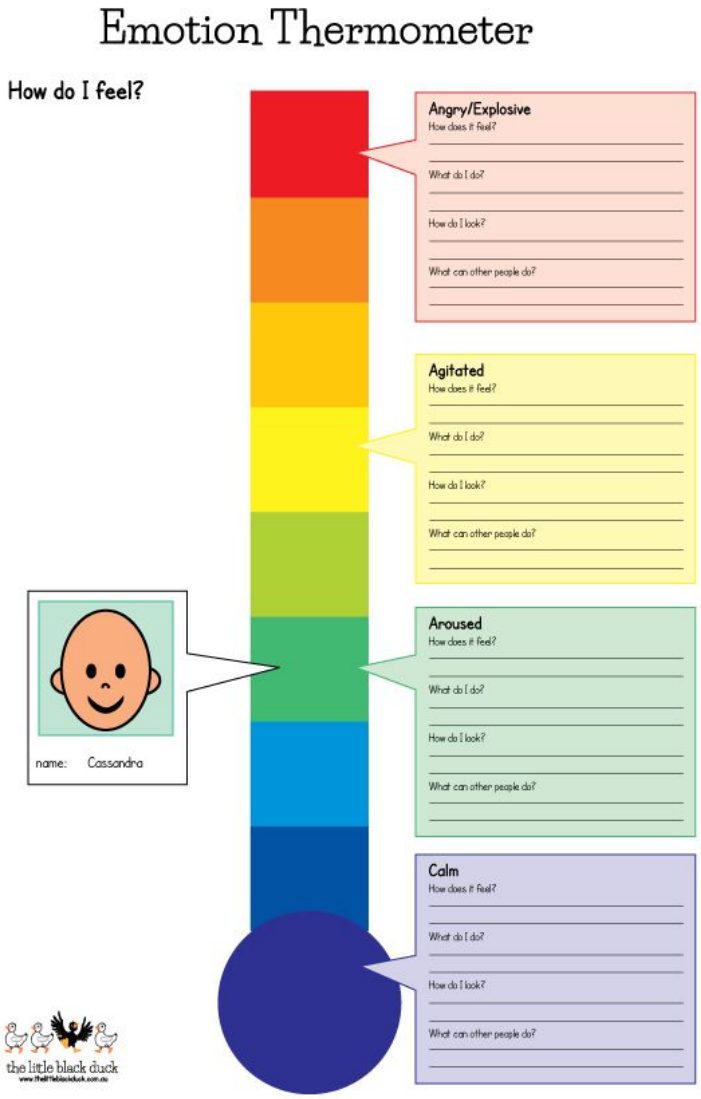
- Time 1**:** Review using previously used visuals, but with new scenarios
- Time 2: This part of the lesson will address bodily awareness of emotional conflicts, in helping children become more aware of how they experience emotions.



Session 8: Knowledge

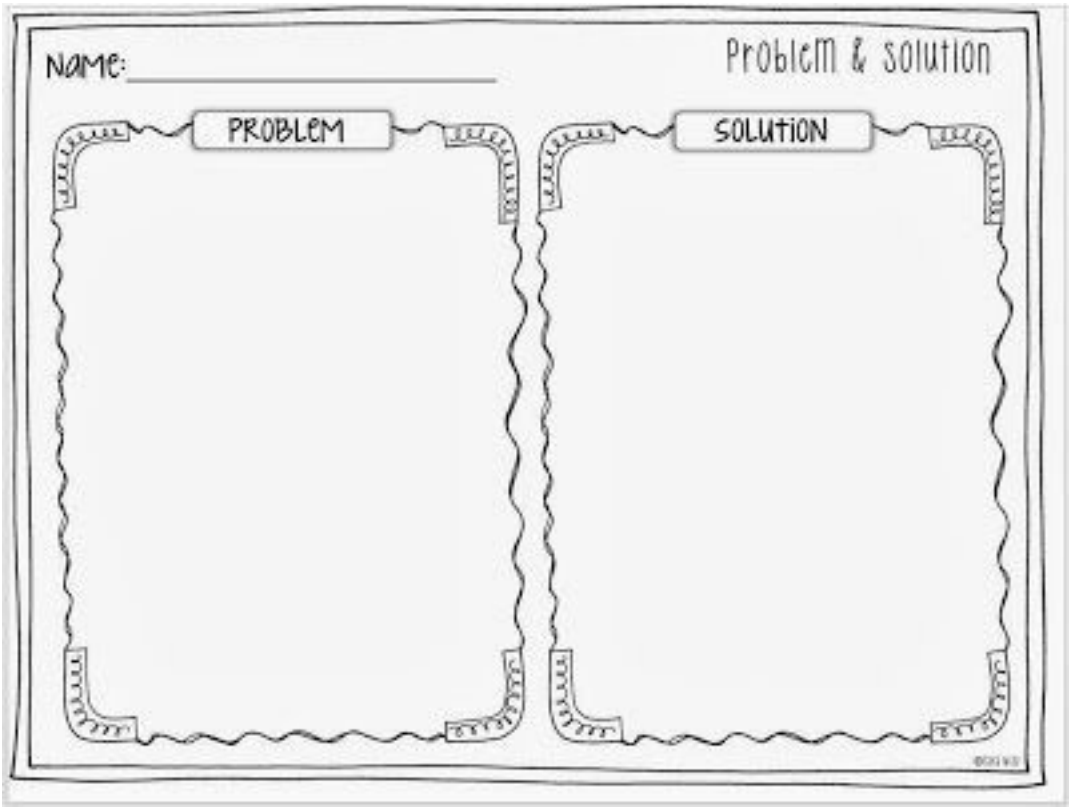
Objective: Firstly**,** the goal of this lesson will be to further expand on bodily warning signals, in addition to identifying what these signs mean to behavior. Secondly, the lesson will aim to suggest ideas for problem solving.

- Time 1: In addition to reviewing bodily warning signs, at this point we will be introducing a visual in helping children make the links between bodily signs and what that means.

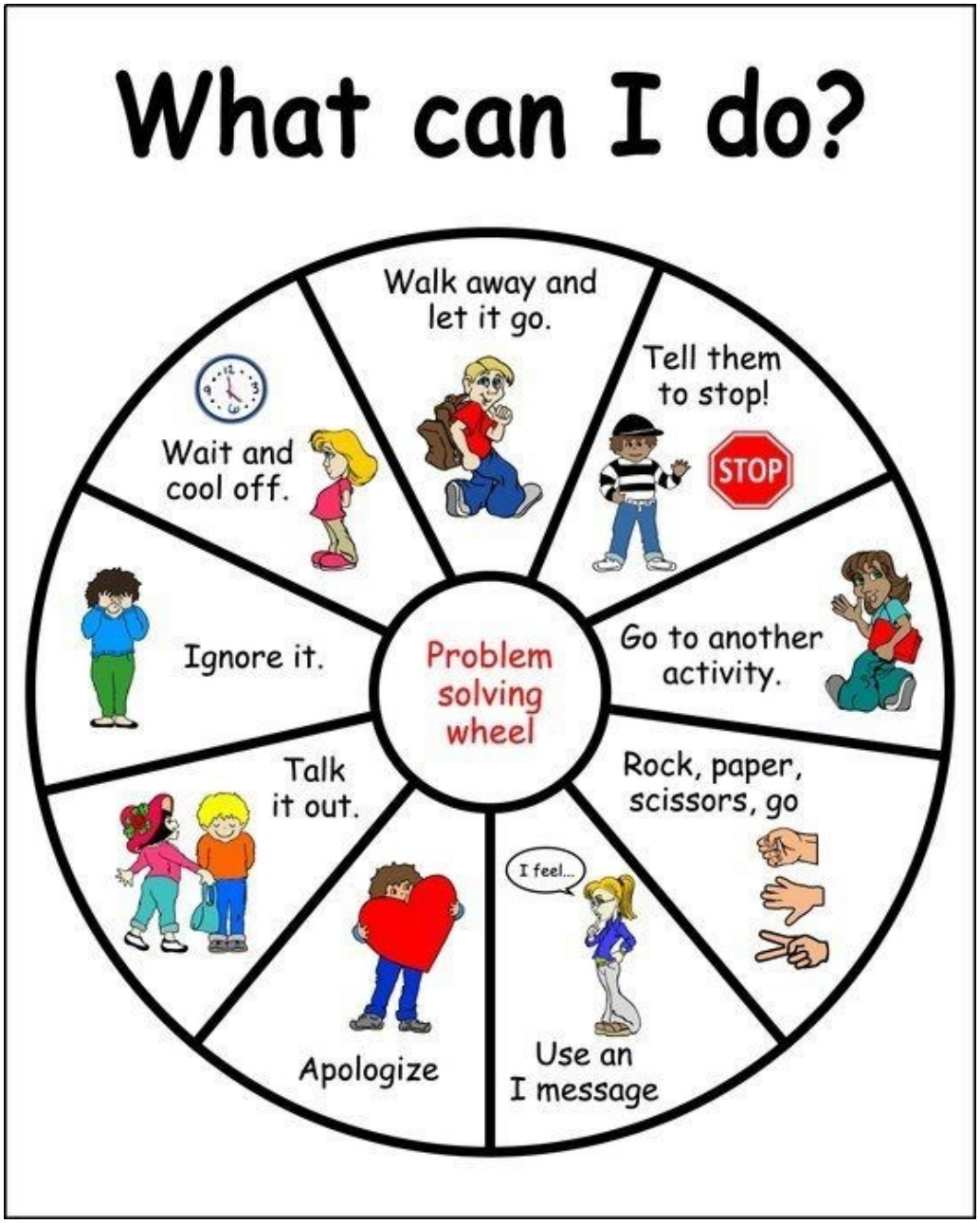


Time 2: This part of the lesson will be directed towards problem solving. This section is based upon the PATHS intervention unit (Kam et al., 2004), which helps to generalize common conflicts and perspective taking.

- Throughout our time at the setting, the researchers and the classroom teachers will be taking note of conflicts that occur in the classroom. With these, the researchers will present them to the class as a whole. Discussions will be led in identifying what happened, what was the antecedent, how did that make others feel, and how could things be different next time.



- Also, it's important to provide some visual representations to prosocial strategies in dealing with conflicts in-vivo



Session 9:

Objective: In addition to review, this lesson will aim to provide the children with prosocial coping strategies in order to better deal with negative emotions.

- Time 1: Review bodily warning signals in addition to problem solving.
- Time 2: This part of the lesson will be to help children link their emotion to how they should emotionally regulate accordingly.

Sessions 10 & 11: Review and Discussion

Objective: The objective of these two sessions would be to review and discuss the themes presented over the course of 6 weeks. The activities that are going to be used will likely be those

that the children enjoyed and request to use again, however new context and scenarios will always be presented, on account of better success in generalization.

Appendix C

Emotion Cognition Checklist

Date:

Child:

Observer(s):

Emotion Cognition *Is the child capable of…*	**Yes**	**No**	**Comments**
1. Labeling complex emotions in facial expressions (ex: surprised, confused, uncomfortable, frustrated, excited)			
2. Understanding emotional prosody?			
3. Interpret body language?			
4. Understand complex emotions in others?			
5. Understanding/differentiate emotions from within?			
6. Differentiating one's own thoughts from another's? (i.e: able to differentiate thinking from talking, can answer "why" questions in regards to another persons expressed emotion)			
7. Ability to differentiate between different viewpoints (i.e: understands			

people see things differently)			
8. Ability to take the perspective of another and be able to explain why			
9.To identify bodily warning signals in their body?			
10. Can express what emotions feel like in the body?			
11. Can identify antecedents to emotional conflicts?			
12. To deal with conflicts prosocially?			
13. Identify what coping strategy to use according to their emotion?			
14. Use of appropriate coping strategies when faced with an emotional conflict?			
15. Expressing their needs and desires appropriately when faced with an emotional conflict?			

Appendix D

Interview Questions

1. Tell me about all the emotions you can feel in a day?
    a. Do you feel more than 1 feeling in a day?
    b. What makes them different?
2. How does your body feel?
    a. Does your breathing change?
    b. What do you feel in your heart?
3. What is your immediate reaction to those feelings?
4. How do you deal with those emotions?
    a. Do you take breaks etc.?
5. How do these emotions affect how you get things done in class?
6. Can you make a drawing about how you feel at your best and at your worst?

Appendix E

SPF Ethics Form

SUMMARY PROTOCOL FORM (SPF)

Office of Research – Research Ethics Unit – GM 900 – 514-848-2424 ext. 7481 – oor.ethics@concordia.ca – www.concordia.ca/offices/oor.html

IMPORTANT INFORMATION FOR ALL RESEARCHERS

Please take note of the following before completing this form:

- You must not conduct research involving human participants until you have received your Certification of Ethical Acceptability for Research Involving Human Subjects (Certificate).
- In order to obtain your Certificate, your study must receive approval from the appropriate committee:
  - Faculty research, and student research involving greater than minimal risk is reviewed by the University Human Research Ethics Committee (UHREC).
  - Minimal risk student research is reviewed by the College of Ethics Reviewers (CER; formerly the "Disciplinary College"), except as stated below.
  - Minimal risk student research conducted exclusively for pedagogical purposes is reviewed at the departmental level. **Do not use this form for such research.** Please use the Abbreviated Summary Protocol Form, available on the Office of Research (OOR) website referenced above, and consult with your academic department for review procedures.
- Research funding will not be released until your Certificate has been issued, and any other required certification (e.g. biohazard, radiation safety) has been obtained. For information about your research funding, please consult:
  - Faculty and staff: OOR
  - Graduate students: School of Graduate Studies
  - Undergraduate students: Financial Aid and Awards Office or the Faculty or Department
- Faculty members are encouraged to submit studies for ethics by uploading this form, as well as all supporting documentation, to ConRAD, which can be found in the MyConcordia portal.
- If necessary, faculty members may complete this form and submit it by e-mail to oor.ethics@concordia.ca along with all supporting documentation. Student researchers are asked to submit this form and all supporting documentation by e-mail, except for departmental review. Please note:
  - Handwritten forms will not be accepted.

- Incomplete or omitted responses may result in delays.
- This form expands to accommodate your responses.

- Please allow the appropriate amount of time for your study to be reviewed:
  - UHREC reviews greater than minimal risk research when it meets on the second Thursday of each month. You must submit your study 10 days before the meeting where it is to be reviewed. You will normally receive a response within one week of the meeting. Please confirm the deadline and date of the meeting with the staff of the Research Ethics Unit.
  - CER reviews, and delegated reviews conducted by UHREC generequire 2 to 4 weeks.
- Research must comply with all applicable laws, regulations, and guidelines, including:
  - The *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*
  - The policies and guidelines of the funding/award agency
  - The *Official Policies of Concordia University*, including the *Policy for the Ethical Review of Research Involving Human Participants, VPRGS-3*.
- The Certificate is valid for one year. In order to maintain your approval and renew your Certificate, please submit an Annual Report Form one month before the expiry date that appears on the Certificate. You must not conduct research under an expired Certificate.
- Please contact the Manager, Research Ethics at 514-848-2424 ext. 7481 if you need more information on the ethics review process or the ethical requirements that apply to your study.

ADDITIONAL INFORMATION FOR STUDENT RESEARCHERS

- If your research is part of your faculty supervisor's research, as approved, please have him or her inform the Research Ethics Unit via e-mail that you will be working on the study.
- If your research is an addition to your faculty supervisor's study, please have him or her submit an amendment request, and any revised documents via e-mail. You must not begin your research until the amendment has been approved.

INSTRUCTIONS FOR COMPLETING THIS FORM

- Please make sure that you are using the most recent version of the SPF by checking the OOR website.
- Please answer each question on the form; if you believe the question is not applicable, enter not applicable.
- Do not alter the questions on this form or delete any material. Where questions are followed by a checklist, please answer by checking the applicable boxes.
- The form can be signed and submitted as follows:
  - Faculty research submitted on ConRAD will be considered as signed as per section 16.
  - SPFs for faculty research submitted via the faculty member's official Concordia e-mail address will also be considered as signed as per section 16.
  - Both faculty and student researchers may submit a scanned pdf of the signature page by e-mail. In this case, the full SPF should also be submitted by e-mail in Word or pdf format (not scanned).
  - If you do not have access to a scanner, the signature page may be submitted on paper to the OOR.

ADDITIONAL DOCUMENTS

Please submit any additional documents as separate files in Word or PDF format.

1. BASIC INFORMATION

Study Title: Emotion Regulation Among School-Aged Children with Autism Spectrum Disorder.

Researcher: Dr. Harriet Petrakos

Principal Investigator's Status:

✓ Concordia faculty or staff

☐ Visiting scholar

☐ Affiliate researcher

☐ Postdoctoral fellow

☐ PhD Student

☐ Master's student

☐ Undergraduate student

☐ Other (please specify):

Type of submission:

✓ New study

☐ Modification or an update of an approved study.

Approved study number (e.g. 30001234):

Where will the research be conducted?

✓ Canada

☐ Another jurisdiction:

2. STUDY TEAM AND CONTACT INFORMATION*

Additional Team Members°				
	Kara Dalena	Concordia University/Education/ Montreal, Qc	514-553-1806	karadalena@gmail.com
	Sara Parisse	Concordia University /Education/ Montreal, Qc	514-409-6680	saraparisse@gmail.com

Role	**Name**	**Institution† / Department / Address‡**	**Phone #**	**e-mail address**
Principal Investigator	Harriet Petrakos	Concordia University /Education/ Montreal, Qc		hpetrakos@education.concordia.ca
Faculty supervisor§				
Committee member‖	NA			
Committee member‖	NA			

Notes:
* If additional space is required, please submit a list of team members as a separate document.

†For team members who are external to Concordia only.

‡For individuals based at Concordia, please provide only the building and room number, e.g. GM-910.03.

§For student research only.

ǀFor research conducted by PhD and Master's students only.

°Please include all co-investigators and research assistants.

3. PROJECT AND FUNDING SOURCES

Please list all sources of funds that will be used for the research. Please note that fellowships or scholarships are not considered research funding for the purposes of this section.

Funding Source	**Project Title***	**Grant Number†**	**Award Period**	
			Start	**End**
NA	NA			

Notes:

* Please provide the project title as it appears on the Notice of Award or equivalent documentation.

† If you have applied for funding, and the decision is still pending, please enter "applied".

4. OTHER CERTIFICATION REQUIREMENTS

Does the research involve any of the following (check all that apply):

☐ Controlled goods or technology

☐ Hazardous materials or explosives

☐ Biohazardous materials

☐ Human biological specimens

☐ Radioisotopes, lasers, x-ray equipment or magnetic fields

☐ Protected acts (requiring professional certification)

☐ A medical intervention, healthcare intervention or invasive procedures

Please submit any certification or authorization documents that may be relevant to ethics review for research involving human participants.

5. LAY SUMMARY

Please provide a brief description of the research in everyday language. The summary should make sense to a person with no discipline-specific training, and it should not use overly technical terms. Please do not submit your thesis proposal or grant application.

The goal of this project is to implement social skills intervention, to children with Autism Spectrum Disorder. According to the fifth edition Diagnostic Statistical Manual (DSM)'s criteria for ASD, these children are said to have impairments in various areas of development, such as language, communication, social/emotional reciprocity, and deficits in maintaining relationships (American Psychiatric Association, 2013). Therefore, these deficits make developing emotional cognition a challenge and thus, regulating emotions more difficult to achieve. More specifically, children with ASD typically engage in more emotionally impulsive behaviors and typically use inadequate coping strategies, for example, avoidance, suppression, and use of externalizing behavior to express themselves (Jahromi et al., 2013; Lynn, Carroll, Houghton, & Cobham, 2013). Therefore, this project will examine how children respond to activities involving emotional awareness, where understanding and responding to emotions are critical to the development of emotion cognition. These skills will be implemented through 11 lesson plans in the classroom, over a six-week period, in January to February 2016, for one group of five participants. These participants will be between the ages of eight and ten years old.

Lesson plans will be based upon previously used interventions that help address these issues with this given population, such as PATHS. Path's aims at considering the emotional importance to behavior and the ways to then regulate such affect (Landy & Bradley, 2013; Izard, 2002; Kam et al., 2004; Domitrovich, Cortes, & Greenberg, 2007 In addition??? based upon themes presented in the research, such as identifying emotions, theory of mind (TOM), emotion differentiation, perspective

taking, responding to emotions, and coping strategies (Please refer to Appendix A for break down of lesson plan sessions). In doing so, coping strategies will be provided through direct instruction as described in thelesson plans, and furthermore applied, through the use of video modeling (VM) and video self modeling (VSM). Such interventions and themes have been supported by the literature as providing significant outcomes to promote emotion regulation strategies (Landy & Bradley, 2013; Izard, 2002; Kam et al., 2004; Domitrovich, Cortes, & Greenberg, 2007; Alzyoudi, Sartawi, & Almuhiri, 2014; Bellini & Akullian, 2007; Charlop-Christy, Le, & Freeman, 2000; Ohtake, Kawaii, Takeuchi, & Utsumi, 2013).

To determine the effectiveness of emotion regulation, Social Skills Improvement System rating scale will be administered to the teacher, in order to gather information in regards to the children's emotional cognition, pre and post intervention. In addition, each participant will be asked to partake in interviews (refer to Appendix B), for both pre and post intervention, addressing their knowledge and expression of emotion. Lastly, the researchers will complete an emotion cognition checklist (refer to Appendix C) addressing observed emotion cognition and regulation.

6. RISK LEVEL AND SCHOLARLY REVIEW

As part of the research, participants will be exposed to risk that is greater than minimal?

Minimal risk means that the probability and magnitude of the risks are greater than those to which participants would be exposed in those aspects of their daily lives that are pertinent to the research.

☐ Yes

☒ No

Has this research received favorable review for scholarly merit?

Scholarly review is not required for minimal risk research.

For faculty research, funding from a granting agency such as CIHR, FQRSC, or CINQ is considered evidence of such review. Please provide the name of the agency.

For student research, a successful defense of a thesis or dissertation proposal is considered evidence of such review. Please provide the date of your proposal defense.

☐ Yes Funding agency or date of defense:

☐ No

☒ Not required

If you answered no, please submit a Scholarly Review Form, available on the OOR website. For studies to be conducted at the PERFORM Centre, please submit the Scientific Review Evaluator Worksheet.

7. RESEARCH PARTICIPANTS

Will any of the participants be part of the following categories?

☒ Minors (individuals under 18 years old)

☐ Individuals with diminished mental capacity

☐ Individuals with diminished physical capacity

☐ Members of Canada's First Nations, Inuit, or Métis peoples

☐ Vulnerable individuals or groups (vulnerability may be caused by limited capacity, or limited access to social goods, such as rights, opportunities and power, and includes individuals or groups whose situation or circumstances make them vulnerable in the context of the

research project, or those who live with relatively high levels of risk on a daily basis)

a) Please describe potential participants, including any inclusion or exclusion criteria.

The likely participants will be between the ages of eight and ten years old. They are all diagnosed with autism spectrum disorder, and attend a special needs school for children with intellectual disabilities. According to the researchers, observations and the classroom teacher, the handful of participants chosen all have behavior problems in the classroom, which are the result of poor emotion regulation. Consent forms will be sent home and the teachers will also give their consent to work their students, and those given consent will be part of this research project.

b) Please describe in detail how potential participants will be identified, and invited to participate. Please submit any recruitment materials to be used, for example, advertisements or letters to participants.

The participants will be suggested to the researchers, by the classroom teacher. An information letter, including a consent form, will be sent home to those students (See Appendix D) and consent form given to the classroom teacher (Appendix G). In addition, the likely participants will be asked for oral assent (See Appendix E), where they will be free to express any discomfort, disinterest, and an opportunity to discontinue participation at any time. The research assistants, (Sara and Kara) have both been volunteering at Summit for several months now, allowing them to feel comfortable in the school setting.

c) Please describe in detail what participants will be asked to do as part of the research, and any procedures they will be asked to undergo. Please submit any instruments to be used to gather data, for example questionnaires or interview guides.

The participants will undergo pre-intervention interviews in order to examine their knowledge and emotion expression (See Appendix B -Child interview question). These interviews will be audio-recorded, upon parental and teacher consent. The pre intervention interviews will be repeated at post intervention, in order to identify the effectiveness of the intervention. Progress will also be measured using the SSIS rating scale, pre and post intervention, to be completed by the classroom teacher. In addition, pre and post intervention measures will also include an emotion cognition checklist (See Appendix C). Once the information is gathered, the intervention includes a six-week emotion regulation intervention, as described in the lesson plans of the appendix F. In addition to the lessons, children will be video recorded

when observed demonstrating problem behaviours in the classroom, in order to create a Visual Self-Model (VSM) intervention. The VSM will include visual stimuli of the behaviour, in addition to audio scripts (in their own voice) of how to redirect behaviour and cope appropriately. These recordings will be shown to the individual child that was recorded, when future behaviours occur, in hopes of coaching them through emotion regulation strategies. The videos will be available in the classroom for those children and will be presented with the videos immediately after the behaviours occur. Lessons will be administered through activities that will be stimulating, motivating, and interactive (Please refer Appendix F for a breakdown of the lessons).

d) Do any of the research procedures require special training, such as medical procedures or conducting interviews on sensitive topics or with vulnerable populations? If so, please indicate who will conduct the procedures and what their qualifications are.

NA

8. INFORMED CONSENT

a) Please explain how you will solicit informed consent from potential participants. Please submit your written consent form. In certain circumstances, oral consent may be appropriate. If you intend to use an oral consent procedure, please submit a consent script containing the same elements as the template, and describe how consent will be documented.

Please note: written consent forms and oral consent scripts should follow the consent form template available on the OOR website. Please include all of the information shown in the sample, adapting it as necessary for your research.

Once approval from Concordia University Ethics board is obtained, and then the research proposal will be presented to the Research Committee at Sunshine School. Once approved, the teacher will nominate participants. Following with an information letter and written consent will be required of the teachers and of the parents of the children. (Please refer to Appendix G and D).

b) Does your research involve individuals belonging to cultural traditions in which individualized consent may not be appropriate, or in which additional consent, such as group consent or consent from community leaders, may be required? If so, please describe the appropriate format of consent, and how you will solicit it.

NA

9. DECEPTION

Does your research involve any form of deception of participants? If so, please describe the deception, explain why the deception is necessary, and explain how participants will be de-briefed at the end of their participation. If applicable, please submit a debriefing script.

Please note that deception includes giving participants false information, withholding relevant information, and providing information designed to mislead.

NA

10. PARTICIPANT WITHDRAWAL

a) Please explain how participants will be informed that they are free to discontinue at any time, and describe any limitations on this freedom that may result from the nature of the research.

The consent forms given to the parents and teachers stipulate that they are free to discontinue at any time (Please refer to Appendix D and G). There would be no limitations that change the nature of the research.

c) Please explain what will happen to the information obtained from a participant if he or she withdraws. For example, will their information be destroyed or excluded from analysis if the participant requests it? Please describe any limits on withdrawing a participant's data, such as a deadline related to publishing data.

If a participant withdraws from the study, all data gathered prior to withdrawal, will be destroyed and not included in any analyses. In the case that this occurs, it will not affect our results, because analyses will be focused on each individual child.

11. RISKS AND BENEFITS

a) Please identify any foreseeable benefits to participants.

The foreseeable benefits for the participants will be that the interventions, including emotion cognition lesson plans and the VSM, will reduce the risk of the problem behaviors, provide strategies and tools to improve their emotion regulation and social functioning.

b) Please identify any foreseeable risks to participants, including any physical or psychological discomfort, and risks to their relationships with others, or to their financial well-being.

In the case that some children may not wish to discuss their personal emotions, on any given day, they will be assured that they will not be forced to participate in the activity or not.

c) Please describe how the risks identified above will be minimized. For example, if individuals who are particularly susceptible to these risks will be excluded from participating, please describe how they will be identified. Furthermore, if there is a chance that researchers will discontinue participants' involvement for their own well being, please state the criteria that will be used.

If a child is having a particularly challenging day, then he/she will be given a choice on how he/she wants to proceed. For example, he/she can sit and listen and not participate, or he/she cannot be present at all. Choices will be given throughout, and if any child is not compliant, then they are not forced to participate.

d) Please describe how you will manage the situation if the risks described above are realized. For example, if referrals to appropriate resources are available, please provide a list. If there is a chance that participants will need first aid or medical attention, please describe what arrangements have been made.

Once given the option to not participate on that particular day, it can be up to the classroom teacher to direct his/hers needs in the right direction through the various support staff associated with Sunshine School. For example, the school psychologist, behavior technician, nurse, or occupational therapist can be responsible for dealing with a particularly aversive situation. This decision will not be at the researchers liberty to choose but rather the classroom teacher will attend to the child, as they would normally do in the classroom.

12. REPORTABLE SITUATIONS AND INCIDENTAL FINDINGS

a) Is there a chance that the research might reveal a situation that would have to be reported to appropriate authorities, such as child abuse or an imminent threat of serious harm to specific individuals? If so, please describe the situation, and how it would be handled.

There is a very low risk of the likelihood of such discoveries, however, if the discovery does occur in the lesson and interview discussion, the appropriate trained professionals will be contacted. Specifically, in compliance with the Youth Protection Act, we will ensure that any suspicion of abuse or neglect will be reported to the principle or a social worker directly associated with Summit school.

Please note that legal requirements apply in such situations. It is the researcher's responsibility to be familiar with the laws in force in the jurisdiction where the research is being conducted.

b) Is there a chance that the research might reveal a material incidental finding? If so, please describe how it would be handled.

In compliance of the Youth Protection Act, if any incidental finding does come forward, then it will be immediately brought forward to the principal of Sunshine School.

13. CONFIDENTIALITY, ACCESS, AND STORAGE

a) Please describe the path of your data from collection to storage to its eventual archiving or disposal, including details on short and long-term storage (format, duration, and location), measures taken to prevent unauthorized access, who will have access, and final destination (including archiving, or destruction).

After the data collection is complete, original paper copies of the questionnaires and interviews will be kept in a locked cabinet at Concordia University, the data will then be scanned and transferred to a password protected USB key. They will also be in a locked cabinet at Concordia University. The VSM files and audio recordings from the interviews, will be recorded and used on the Summit computers/iPads, and will be password protected. Only the chief investigator and supervisor will be permitted to listen to any audio recordings. However, only the child and investigator will view the VSM recordings. Once the data has been analyzed and recorded, it will be archived for five additional years, after which the data will be shredded and USB keys will be destroyed and disposed of.

b) Please identify the access that the research team will have to participants' identity:

☐	Anonymous	The information provided never had identifiers associated with it, and the risk of identification of individuals is low, or very low.
☐	Anonymous results, but identify who participated	The information provided never had identifiers associated with it. The research team knows participants' identity, but it would be impossible to link the information provided to link the participant's identity.
☐	Pseudonym	Information provided will be linked to an individual, but that individual will only provide a fictitious name. The research team will not know the real identity of the participant.
☐	Coded	Direct identifiers will be removed and replaced with a code on the information provided. Only specific individuals have access to the code, meaning that they can re-identify the participant if necessary.
☐	Indirectly identified	The information provided is not associated with direct indentifiers (such as the participant's name), but it is associated with information that can reasonably be expected to identify an individual through a combination of indirect identifiers (such as place of residence, or unique personal characteristics).
☒	Confidential	The research team will know the participants' real identity, but it will not be disclosed.
☐	Disclosed	The research team will know the participants' real identity, and it will be revealed in accordance with their consent.

☐	Participant Choice	Participants will be able to choose which level of disclosure they wish for their real identity.
☐	Other (please describe)	

c) Please describe what access research participants will have to study results, and any debriefing information that will be provided to participants post-participation.

Debriefing procedures will include a short video of each child at the end of the intervention period. Of which, the video will include what the child has learned, what they enjoyed, and one statement expression their emotional journey throughout this whole process. These videos will be distributed via parents personal email address.

d) Would the revelation of participants' identity be particularly sensitive, for example, because they belong to a stigmatized group? If so, please describe any special measures that you will take to respect the wishes of your participants regarding the disclosure of their identity.

The research team will know the participants' real identity, but it will not be disclosed. Pseudonyms will be used as a way to ensure confidentiality.

e) In some research traditions, such as action research, and research of a socio-political nature, there can be concerns about giving participant groups a "voice". This is especially the case with groups that have been oppressed or whose views have been suppressed in their cultural location. If these concerns are relevant for your participant group, please describe how you will address them in your project.

NA

14. MULTI-JURISDICTIONAL RESEARCH

Does your research involve researchers affiliated with an institution other than Concordia? If so, please complete the following table, including the Concordia researcher's role and activities to be conducted at Concordia. If researchers have multiple institutional affiliations, please include a line for each institution.

NA

Researcher's Name	**Institutional Affiliation**	**Role in the research (e.g. principal investigator, co-investigator, collaborator)**	**What research activities will be conducted at each institution?**

15. ADDITIONAL ISSUES

Bearing in mind the ethical guidelines of your academic or professional association, please comment on any other ethical concerns which may arise in the conduct of this research. For example, are there responsibilities to participants beyond the purposes of this study?

NA

16. DECLARATION AND SIGNATURE

Study Title: **Emotion Regulation and School-Aged Children with Autism Spectrum Disorder**

I hereby declare that this Summary Protocol Form accurately describes the research project or scholarly activity that I plan to conduct. I will submit a detailed modification request if I wish to make modifications to this research.

I agree to conduct all activities conducted in relation to the research described in this form in compliance with all applicable laws, regulations, and guidelines, including:

- The *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*
- The policies and guidelines of the funding/award agency
- The *Official Policies of Concordia University*, including the *Policy for the Ethical Review of Research Involving Human Participants, VPRGS-3*.

Principal Investigator Signature: _____

Date: _____

FACULTY SUPERVISOR STATEMENT (REQUIRED FOR STUDENT PRINCIPAL INVESTIGATORS):

I have read and approved this project. I affirm that it has received the appropriate academic approval, and that the student investigator is aware of the applicable policies and procedures governing the ethical conduct of human participant research at Concordia University. I agree to provide all necessary supervision to the student. I allow release of my nominative information as required by these policies and procedures in relation to this project.

Faculty Supervisor Signature: _____

Date: _____

Appendix F

Information and Parent Consent Form

INFORMATION AND CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Emotion Regulation and School-Aged Children with Autism Spectrum Disorder

Researcher: Dr. Harriet Petrakos

Researcher's Contact Information: hpetrakos@education.concordia.ca

Source of funding for the study: NA

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

The purpose of the research is to develop an intervention to promote emotion regulation, coping strategies, and social skills for children who display social and communicative difficulties. This information will add to social skills research. The goal is also to understand how children perceive their own emotions as well as others emotions in a classroom setting.

B. PROCEDURES

If you participate, you will be asked to allow your child to partake in the study from Winter 2016 to Spring 2016. You will allow your child to participate in the intervention, which will consist of 30-minute biweekly lessons along with interviews that will take about 10-15 minutes to complete at the beginning of Winter 2016 and end of Spring 2016. You will allow for these interviews to be audiotaped.

As a research participant, your responsibilities would be to allow your child to participate.

C. RISKS AND BENEFITS

You might face certain risks by participating in this research. These risks include possible discomfort in discussing emotions. In the case that your children may not wish to discuss their personal emotions, on any given day, they will be assured that they have the choice to participate in the activity or not.

You might or might not personally benefit from participating in this research. Potential benefits include: The foreseeable benefits for the participants will be that the interventions, including emotion cognition lesson plans and the visual self-modeling (VSM), will reduce the risk of the problem behaviors, provide strategies and tools to improve their emotion regulation, and social participation.

This research is not intended to benefit you personally.

D. CONFIDENTIALITY

We will gather the following information as part of this research: In addition to the interview questions and lesson plans that your child will be participating in, the researchers will be using checklists in regards to emotion cognition, in getting a better idea of what your child is emotionally aware of. Furthermore, a teacher rating scale will be used to determine the frequency of problem behaviours and social functioning of your child pre intervention and post intervention.

We will not allow anyone to access the information, except people directly involved in conducting the research, and except as described in this form. We will only use the information for the purposes of the research described in this form.

The information gathered will be anonymous. That means that it will not be possible to make a link between you and the information you provide.

The information gathered will be coded. That means that the information will be identified by a code. The researcher will have a list that links the code to your name.

We will protect the information by keeping the gathered data in a cabinet with a lock and key. Any electronic information gathered will be a password-protected file on the researchers hard drive.

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

E. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time.

We will tell you if we learn of anything that could affect your decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

F. PARTICIPANT'S DECLARATION

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

NAME (please print) _____

SIGNATURE _____

DATE _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher(s). Their contact information is on page 1.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix G

Child's Oral Consent Form (eight to 10 years old)

Hello Everyone! So today, I'm going to ask you to come with us and answer a few questions about yourself and your feelings. If you have any questions while we are talking, please ask me. At the end, you get to make a drawing about how you feel when you're having a good day and when you're having a bad day. You can draw anything that you want and you can use materials you want to. Over the next several weeks, we are going to talk to you about feelings and how to feel better when you feel upset. After our meetings are over, I will ask you to come and see me one more time to answer the same questions and make another drawing!

If at any time you do not want to do these activities with me because it makes you feel upset in anyway, you can tell your parents, teachers, or me, and you will not have to meet with me anymore. No one will be upset, we will be happy that you were willing to work with us, for at least part of the activity. Would you like to work with us?

Appendix H

Teacher Information and Written Consent Form

INFORMATION AND CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Study Title: Emotion Regulation and School-Aged Children with Autism Spectrum Disorder

Researcher: Dr. Harriet Petrakos

Researcher's Contact Information: hpetrakos@education.concordia.ca

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

The purpose of the research is to develop an intervention to promote emotion regulation, coping strategies, and social skills for children who display social and communicative difficulties. This information will add to social skills research. The goal is also to understand how children perceive their own emotions as well as others emotions in a classroom setting.

B. PROCEDURES

If you participate, you will be asked to allow the research assistants into your classroom, where they will be gathering needed information for the study. This information will include a checklist, interview, and a rating scale. The research will take place Winter 2016 to Spring 2016. In addition, you will allow the research assistants to lead the emotion cognition intervention, which will consist of 30-minute biweekly lessons along with interviews that will take about 10-15 minutes to complete at the beginning of Winter 2016 and end of Spring 2016. You will allow for these interviews to be videotaped where necessary.

As a research participant, your responsibilities would be to fill out a rating scale in the Spring 2016 and, once more in the Winter 2016. In addition, if any problem behaviours arise during our intervention, you will be asked to address the behaviour using your typical classroom management strategies.

C. RISKS AND BENEFITS

You might face certain risks by participating in this research. These risks include possible discomfort in discussing emotions. In the case that your student may not wish to discuss their personal emotions, on any given day, they will be assured that they have the choice to participate in the activity or not.

You might or might not personally benefit from participating in this research. Potential benefits include: The foreseeable benefits for the participants will be that the interventions, including emotion cognition lesson plans and the visual self-modeling (VSM), will reduce the risk of the problem behaviors, provide strategies and tools to improve their emotion regulation, and social participation. Therefore, the benefits might reduce problem behaviors in your classroom. 89/2

This research is not intended to benefit you personally.

D. CONFIDENTIALITY

We will gather the following information as part of this research: In addition to the interview questions and lesson plans that the students will be participating in, the researchers will be using checklists in

regards to emotion cognition, in getting a better idea of where the student's level of emotional awareness. Furthermore, a teacher rating scale will be used to determine the frequency of problem behaviours and social functioning of the student pre intervention and post intervention.

We will not allow anyone to access the information, except people directly involved in conducting the research, and except as described in this form. We will only use the information for the purposes of the research described in this form.

The information gathered will be anonymous. That means that it will not be possible to make a link between you and the information you provide.

The information gathered will be coded. That means that the information will be identified by a code. The researcher will have a list that links the code to your name.

We will protect the information by keeping the gathered data in a cabinet with a lock and key. Any electronic information gathered will be a password-protected file on the researchers hard drive.

We intend to publish the results of the research. However, it will not be possible to identify you in the published results.

We will destroy the information five years after the end of the study.

E. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time.

We will tell you if we learn of anything that could affect your decision to stay in the research.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

F. PARTICIPANT'S DECLARATION

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

NAME (please print) _____

SIGNATURE _____

DATE _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is on page 1. You may also contact their faculty supervisor.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix I J

Social Skills Improvement System Rating Scale (Teacher)

Example Questions

Social Skills:

1. Follows your directions
2. Say's "please"
3. Ignores classmates when they are distracting
4. Is nice to others when they are feeling bad
5. Expresses feelings when wronged
6. Shows kindness to others when they are upset
7. Shows concerns for others

Problem Behaviors:

1. Forces others to act against their will
2. Gets embarrassed easily
3. Acts lonely
4. Is inattentive
5. Gets distracted easily
6. Lies or does not tell the truth

Reference

Gresham, F.M., & Elliot, S.N. (2008). SSIS Social Skills Improvement System, Minneapolis, MN:Pearson.