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The Impacy of Video Modeling and Role Playing on the Development of Empathy among Learners with Autism Spectrum Disorders

Armin Joy P. Lantin
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**THE IMPACT OF USING VIDEO MODELING AND ROLE PLAYING ON THE
DEVELOPMENT OF EMPATHY AMONG LEARNERS WITH AUTISM SPECTRUM
DISORDERS**

A Thesis
Presented to the Faculty of
College of Graduate Studies and Teacher Education Research
Philippine Normal University
Taft Avenue, Manila

In Partial Fulfillment of the Requirements
for the Degree Master of Arts in Education
with specialization in Special Education - Intellectual Disabilities

ARMINE JOY P. LANTIN

March 2019

APPROVAL SHEET

This thesis entitled “**THE IMPACT OF USING VIDEO MODELING AND ROLE PLAYING ON THE DEVELOPMENT OF EMPATHY AMONG LEARNERS WITH AUTISM SPECTRUM DISORDERS**” prepared and submitted by **ARMINE JOY P. LANTIN** in partial fulfillments of the requirements for the degree **Master of Arts in Education with specialization in Special Education - Intellectual Disabilities**, is hereby recommended for approval acceptance

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AJPL

ABSTRACT

Name : **Armine Joy P. Lantin**

Title : **THE IMPACT OF USING VIDEO MODELING AND ROLE PLAYING ON THE DEVELOPMENT OF EMPATHY AMONG LEARNERS WITH AUTISM SPECTRUM DISORDERS**

Key Concepts : Children with autism spectrum disorders, empathy, video modeling, role playing

Degree : Master of Arts in Education

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Adviser : Zhanina U. Custodio

The researcher investigated the impact of using video modeling and role playing on the development of empathy among learners with autism spectrum disorders. Four elementary pupils with previous diagnosis meeting the autism spectrum disorder were recruited and assessed before and after the intervention by asking the parents and teachers to answer Autism Social Skills Profile and Empathy Spectrum Quotient. Prior to the intervention, all the participants had little awareness of the emotions of people around him. They lacked awareness of nonverbal cues of others and seemed that they did not understand the concept of how their actions affected the feeling of others. Results showed that their behaviors improved after the intervention. There was a positive impact on the peers of each participant since there was an improvement in classroom behavior since they started to recognize facial expressions and body language, react appropriately to situations, share what they had, waited for their turn to play, and initiated

interaction. All the participants were able to reach the second level of Hoffman's stage of empathy development, egocentric empathy where they offered comfort to their peers the way they knew what would comfort them such as taking turns, dealing with frustration, sharing food, and staying quiet when being talked to by the teacher. Although it was not evident **that they were able to share the emotions of their peers, they offered comfort and showed** concern. It appeared that video modeling and role-playing could be a helpful strategy in assisting students to develop empathy and bring about various positive changes when introduced in the classroom. It is therefore recommended to try out the treatment used in the study with other disabilities and determine the effectiveness among learners with special needs.

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Chapter 1

THE PROBLEM AND LITERATURE REVIEW

1.1 Background of the study

Autism, as defined by Individuals with Disabilities Education Act (IDEA) (2004), is a developmental disability that affects verbal and nonverbal communication and social interaction, that is evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.

Provision of special education is implied from two provisions of the 1987 Philippine Constitution. Article II, Section 17 provides that the state must give priority to education, while article XIV, Section 1 guarantees that this education must be accessible to all and appropriate steps must be taken. Also, Republic Act No. 7277, Magna Carta of Disabled Persons was established and is an act that provides for the rehabilitation, self-development and self-reliance of disabled persons and their integration into the mainstream of society and for other purposes.

Sec. 12. Access to Quality Education. — The State shall ensure that disabled persons are provided with access to quality education and ample opportunities to develop their skills. It shall take appropriate steps to make such education accessible to all disabled persons. It shall be unlawful for any learning institution to deny a disabled person admission to any course it offers by reason of handicap or disability. The State shall take into consideration the special requirements of disabled persons in the formulation of educational policies and programs. It shall encourage learning institutions to take into account the special needs of disabled persons with respect to the use of school facilities, class schedules, physical education requirements, and other pertinent consideration. (Congress of the Philippines, 1991, p. 6)

The Department of Education (DepEd) continues to provide the necessary interventions for learners with certain exceptionalities through its Special Education (Sped) program. The program provides a holistic approach in catering to the needs of learners with exceptionalities that ensures learners with exceptionalities to have access to quality education by providing them their individual and unique learning needs. It aims to improve the maximum potential of learners with exceptionalities to enable them to become self-reliant and be geared towards providing them with opportunities for a full and happy life. Based on the epidemiological studies conducted in the past 50 years, it appears that the occurrence of autism spectrum disorder (ASD) is increasing globally. According to the World Health Organization (2017), estimated prevalence of ASD could be higher than the estimate of 1 in 160 children worldwide having ASD, since the actual number of occurrences among low and middle-income countries is still unidentified. The estimated cases of ASD increased in the Philippines over the years, from 500, 000 in 2008 to 1 million in 2014. This number could be higher since it did not cover the rest of the country (Autism Speaks, as cited in Jaymalin, 2014).

Educating learners with ASD continues to challenge many classroom teachers. Learners with ASD are distinguished by significant impairment in core areas: reciprocal social interaction, verbal and nonverbal communication impairment, and presence of restricted, repetitive patterns of behavior, interests, and activities, also known as stereotyped behavior (American Psychiatric Association, 2013). According to Rashid (2010), lack of social skills can lead to difficulties in behavior in school such as misbehavior, violence, carelessness, inattention, peer refusal, intimidation, isolation, problems in making friends, interpersonal relationships and dealing with emotions. It is then essential for children to be trained to have social skills for social

communication and interaction as it allows them to initiate and maintain positive social relationship and cope effectively with their environment (Erwin, Kathryn, & Purves, 2004)

Learners with ASD have difficulty understanding and being aware of the feelings of other people (DSM V, 2013; Baron-Cohen & Wheelwright, 2004). This relates to empathy as Cotton (2001) defined empathy as the ability to share and to understand another person's feelings and perspectives through verbal and/or nonverbal communication. Sharing and understanding emotions of others is important to manage and have successful mutual relationships (Dziobek et al., 2008). Furthermore, developing prosocial behaviors such as helping, sharing and comforting, which benefit other people (Eisenberg, Eggum & Di Guinta, 2010) and promoting positive behavior towards peers and sustaining relationships among others (McDonald & Messinger, 2011) are significant in managing relationships. Additionally, Pedersen (2007) stated that in order for people to progress and continue with their life, they must develop empathy. Developing empathy is useful because having an appropriate understanding of social situations leads to positive interaction with peers and teachers which results to improved learning environment for all (Gresham & Elliott, 2008) since it helps knowing how to respond appropriately instead of rushing to judgments (Reynolds, 2015).

Interventions are needed to develop social skills since children often experience difficulties in social functioning due to the deficit (Amin & Oweini, 2013). According to McConnell, Sisson, Cort, and Strain (1991), through social skills training, specific skills needed by an individual will be developed, which will partly result in more effective social interactions. Weiss and Harris (2001) also stated that teaching social skills is a common educational objective for learners with ASD. One strategy that can be used in teaching empathy is video modeling

where a video demonstration is watched by an individual to imitate the target behavior of the model (Delano & Snell, 2006). Video modeling techniques help learners with ASD to practice what was taught to them since videos allow the repetition of the model and precise procedures (Corbett & Abdullah, 2005) and has been proven to effectively develop complex social skills among learners with ASD (Nikopoulos & Nikopolous-Smyrni, 2008). Another method that can be used is role playing where the participant practices newly acquired or previously learned behavior (Gresham, Van, & Cook, 2006) in their usual environment and then presented with both positive and corrective feedback (Leaf et al., 2012). With the positive effects of both strategies, the study aimed to combine the two to develop empathy among learners with ASD.

Several interventions focused on social skills have been improved and utilized to help learners with ASD to improve along different areas. However, little research has been done to develop empathy using these combined interventions. Combining video modeling and role-playing could help learners with ASD to recognize nonverbal cues in social situations, manage and communicate their emotions, and respond appropriately to situations thereby increasing the level of empathy of learners with ASD.

1.2 Literature Review

Autism Spectrum Disorders

Autism Spectrum Disorder (ASD) is characterized, in varying degrees, by having persistent deficits in social communication and interaction, and restricted and repetitive patterns of behavior. Placement of an individual in the spectrum is determined by symptoms, skills, level of disability, and functioning level as determined by the American Psychiatric Association's

Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2013). ASD is classified into a continuum: Level 1: Requiring Support, Level 2: Requiring Substantial Support; and Level 3: Requiring Very Substantial Support.

DSM V provides the following criteria as a guide to diagnosing ASD:

- Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):
- Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):
- Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities or may be masked by learned strategies in later life).
- Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning (American Psychiatric Association, 2013).

History of Autism

In the early 1800s, the experiences with the Wild Boy of Aveyron, who was named Victor, was documented by Itard. Victor was found wandering near Saint Sernin sur Rance, France and was taken in multiple times but was able to escape his captors each time. He eventually came out from the forest and was estimated that he was 12 years old. Because of staying in the forest for a long time, he did not develop his speech, lack food preferences and had multiple scars on his body. A young medical student Itard wanted to fully civilize and teach

speech and human emotions to the wild boy. He considered that empathy and language are the two things that separated humans from animals. However, there was a slow improvement in the skills of Victor which led to the abandonment of the experiment. Victor died in 1828 in Paris. (Wolff, 2003)

Several researchers investigated the characteristics of individuals with ASD following the study of Itard, including Bleuler who coined the term schizophrenia. This served as the basis of Kanner for the development of the definition of autism. In 1943, Leo Kanner, an American child psychiatrist, described 11 children as individuals who were highly intelligent but exhibited difficulties in social interactions, in spontaneous activity, in communicating, and in adapting to changes in routines and This condition was later named as “early infantile autism” by Kanner. A year after, Hans Asperger, a German scientist, investigated children who had the same characteristics as Kanner’s children but his children spoke like grownups. Their research formed as the foundation of the modern study of autism. In 1967, Bruno Bettelheim claimed that the problem in the children was due to uncaring or detached mothers. This claim was argued by Bernard Rimland who said that autism was a biological condition and was not related to parent-child bond. Autism became known in the 1970s where the Erica Foundation started to treat psychotic children with education and therapy. People were still confused mental retardation and psychosis with autism. (Wolff, 2003)

Autism was then added in the Diagnostic and Statistical Manual of Mental Disorders – Third Edition (DSM-III) in 1980s as “infantile autism” and served as a tool for the doctors to diagnose autism and differentiate the disability from schizophrenia. It was renamed “autistic disorder” in 1987 which gave more extensive description of the diagnosis. Asperger’s syndrome

and Pervasive Developmental Disorder – Not Otherwise Specified were added to DSM in 1994 where individuals tend to be more highly functioning. In 2013, DSM has been updated and explained the subcategories of the condition into one umbrella diagnosis of autism spectrum disorder (ASD) and is defined by two categories: social communication and/or interaction impairment and presence of restricted and/or repetitive behavior. (Wolff, 2003)

Social Skills

Social skills are defined as a set of abilities that encourage favorable social relationships, promote peer acceptance, develop friendship, initiate adjustment in schools, and let students handle and manage demands of the social environment (Gresham et al., 2006). These also involve an array of skills related to learning that let students study unaided, function in groups, create and sustain friendships, and respond properly to adult comments (Gresham, Sugai, & Horner, 2001). Moreover, McKeachie (2003) noted that social skills are favorable behaviors that are acceptable by society and are beneficial both to the child with ASD and to others since these help them during social interaction and enable them to know what to say, how to make good choices, and how to behave in diverse situations (National Association of School Psychologists Center, 2002). In addition, Traquena (2009) mentioned that social skills like being courteous, cooperative, helpful, and sharing of materials and sense of responsibility could be enhanced for learners with ASD.

Learners with ASD are confused with understanding and using gestures, facial expressions, and body language, as well as understanding and using social conventions (NASET, 2007). Joaquin (2007) also explained that learners with ASD manifest social skills deficits such as exhibiting social isolation, limited reciprocal interaction, and self – absorption. Amin and

Oweini (2013) cited that children who lack social communication skills exhibit restricted skill in initiating and maintaining conversation, asking, listening and responding to teachers and peers, and having peer interaction. (Carter, Ornstein-Davis, Klin & Volkmar, 2005). Ogilvie and Dieker (2010) also found that there was a positive impact on the social skills among three students with ASD in middle school after being shown videos of models and participation in role plays with peer mentors. Such positive impacts included asking a question, initiating greeting to peer/teacher, engaging in a conversation, questioning, and understanding instructions.

One of the most essential outcomes for learners with ASD is improving social functioning. Learners with ASD may be at risk because of inadequacy of social skills which may result to isolation from peers and family, emotional and behavioral problems, and academic underachievement (Klin, Volkmar, & Sparrow, 2000). Furthermore, social skills cannot be learned by learners with ASD simply by observation. It is necessary to target the specific behavior and provide support to use the skills within different social situations.

Empathy

Empathy is defined as matching the emotional state experienced by another individual (Yirmiya, Sigman, Kasari, & Mundy, 1992). It is also defined as the eagerness to recognize emotions and thoughts of another person, and to respond affectively and appropriately to another's situation than one's own (Baron-Cohen & Wheelwright, 2004).

Lawrence, Shaw, Baker, Baron-Cohen, and David (2004) cited that empathy has two strands: (1) cognitive empathy – the intellectual concern of another's mental situation; and (2) emotional empathy – an emotional response to emotional responses of other. Cognitive empathy is the ability to comprehend and anticipate the behavior of others (Smith, 2009) which is more

focused on intellect and does not essentially need sensing the feelings of others (Decety, 2010). Shamay-Tsoory (2011) added that it involves perspective-taking and mentalizing. On the other hand, emotional empathy, also labelled as affective empathy, is defined as the ability to distinguish the emotions of others (Shaw, 2010), experience sharing of internal states of other persons (Zaki & Ochsner, 2012), and facilitate prosocial responses such as showing concern and offering comfort and sensing other's feelings when others experience difficult situations (Decety, 2010).

Furthermore, empathy can also be explained using simulation theory and Theory of Mind. In simulation theory, experiential access is provided by empathy where an individual can copy, imitate, and simulate actions and feelings of others. In this theory, empathy is defined as the skill to expect and describe the action of others which is dependent to the ability to imagine oneself in another person's situation (Zahavi, 2008). Moreover, Theory of Mind is defined as the manner of making recognitions to the intentional state of others (Adams, 2001) and is similar to cognitive empathy (Lawrence et al., 2004).

The first step in empathy is recognizing emotions because it can help a person to act appropriately once he/she knows what the other is feeling (Rogers et al., 2007). Hoffman (1977) developed a theory on empathy development that includes four stages: global empathy, egocentric empathy, empathy for others, and empathy for another's life condition. First stage, global empathy, happens in the first year of children where they may copy emotions they witness (e.g., by crying when another infant is crying); but it is instinctive and indistinguishable. Egocentric empathy happens when the child actively offers help that he or she finds comforting for other people. Empathy for others takes place when the child starts to recognize other person's

feeling and become aware that other's feelings can be different from his/hers. This recognition allows them to give appropriate feedback towards another person. The last stage, empathy for another's life condition, occurs when the child recognizes that one's feeling can be rooted from a previous situation than just due to an immediate situation.

Håkansson (2003) found that empathy is the only phenomenon that allows people to share and understand the consciousness of others and respond to it with an appropriate emotion (Baron-Cohen & Wheelwright, 2004). Sucksmith et al. (2013) did a research study on empathy and recognition of emotion where it was found that there was an impaired performance in recognizing basic emotions (happy, sad, angry, afraid and disgusted). Furthermore, Rueda, Fernandez-Berrocal, and Baron-Cohen (2015) explored the emotion recognition of people with ASD and found that they recognized negative emotions more than positive emotions. It was supported by Izard et al (2002) where they stated that recognizing negative emotion was helpful for survival like defending one's self when someone was angry. It was also found by Pouw et al (2013) that aggressive behavior of learners with ASD is related to combination of impaired understanding of other's emotion and poor regulation of emotion. Learners with ASD, learners with conduct disorder, and a control group were compared to determine their emotion recognition, perspective-taking, and emotional affection. Results revealed that learners with ASD exhibited impairment in cognitive empathy while children with conduct disorder showed impairment in affective empathy (Schwenk et al, 2011).

Moreover, the ability of learners with ASD was likened with the ability of normally developing children to explore relations among empathic abilities, conservation, and intelligence. A study revealed that learners with ASD did well on the empathy-related measures (Yirmiya et

al., 1992). However, normally developing learners performed better than learners with ASD on identifying emotions, understanding perspective of others, and responding with empathy. Van Lange (2008) answered the question if empathy promotes interpersonal motivation. He studied and compared three models: empathy only activates altruism, altruism activates altruism and selflessness; and empathy activates altruism and egalitarianism. Results showed that a concern with another's well-being was greater in the two empathy conditions than in the no-empathy condition.

10 people with history of reading disability, 11 typically developing people, 15 high functioning adolescents, and adults with ASD were exposed to pictures for intervals in the range of micro-expressions to determine whether (a) the emotion shown was joyful or mad; (b) indistinct faces were male or female; and (c) neutral images were animals or objects. This was done to examine the skill of learners with ASD of obtaining emotional information from stimuli with exposure durations in the time range of micro-expressions. Result showed that individuals with ASD performed worse on extracting emotions rapidly, which could be a result of slow processing of emotion contributing to the difficulties in empathy (Clark, Winkielman, & McIntosh, 2008). Rump, Giovannelli, Minshew, and Strauss, (2009) also investigated on the emotion recognition of learners with ASD and typically developing children by showing brief video displays of facial expressions that varied in subtlety. Results showed that typically developing learners were proficient in recognizing emotional expressions as matched to learners with ASD

In addition, Howe, Pit-ten Cate, Brown and Hadwin (2008) identified if the 39 preschool students with autism could understand one's feeling and share the emotional experience.

Southampton Test of Empathy for Preschoolers (STEP) combined eight video clips of learners in emotional situations to assess the ability to understand (STEP-UND) and to share (STEP-SHA) the emotional experience of a story character through his/her desire, facial expression, and verbal and nonverbal cues. The results revealed that STEP helped the students to have higher level of emotional understanding and empathic responding was more likely to display relevant facial emotions.

Moreover, story task was utilized by Deschamps, Been and Matthys (2014) to evaluate facets of cognitive empathy and affective empathy. This task involved watching of the vignette and interviewing each of the 27 learners with ASD and 29 typically developed (TD) learners on how the character felt (sad, mad, joyful, afraid or neutral) and to what extent (a little, average, very much) for cognitive empathy and listening to a story where they would also select between the five feelings and the intensity. Results showed that emotion recognition was adequate among learners with ASD, but social responsiveness was impaired as compared to TD learners.

Lockwood, Millings, Hepper, and Rowe (2013) examined 90 participants to determine whether crying caused beginning of caregiving and whether differences in cognitive and emotional empathy controlled the beginning of caregiving. They were exposed (24ms) to happy, sad, and crying faces and then presented with caregiving, neutral, and non-words to complete a task on verbal decision. Results showed that exposure to crying faces elicited slower reaction time among individuals who were low in cognitive empathy than sad or happy faces.

Recognizing how others feel and sharing their feelings are important skills to be learned to have a positive relationship with other people. Eisenberg and Fabes (1990) proved that learners who are more cooperative and have socially competent behavior have higher level of

empathy. Furthermore, empathy helps people to entertain how others think and feel (Baron-Cohen & Wheelwright, 2004).

Video Modeling

One of the tools used in social skills training is video modeling, a strategy in teaching behavior where children are asked to observe videos instead of live scenarios which allows concentration on the target behavior shown on video (McCoy & Hermansen, 2007). Repetitive viewing is a big advantage of video modeling. Videos can be stopped, repeated, and slowed down with a consistent, clear message each time, thus allowing the learner to learn, process, and practice skills that are necessary in a certain situation (Corbett, 2003). Important social cues, precise social and communicative behavior and chronological task completion can be emphasized through videos (Quill, 2000). The more the learner sees the appropriate behavior, the more likely it is for him/her to acquire/generalize a skill (Reichow & Volkmar, 2010).

Furthermore, Quill (2007) stated that they can process visual information better than verbal information since learners with ASD find the videos motivating and reinforcing (Charlop-Christy & Daneshvar, 2002). In addition, the use of videos is effective for learners with ASD that have limited verbal processing skills and high visual processing skills (Maione & Mirenda, 2006). Corbett and Abdullah (2005) noted that video modeling works with learners with ASD because of their preference with visually-cued instructions since they respond more readily with visual information. Procedures of video modeling reinforce and motivate learners with ASD who have preference for visual stimuli and selective attention (Corbett, 2003) since it allows learners to demonstrate newly acquired and previously learned skills with minimal errors (Miltenberger, 2004) by precisely repeating observed behavior through practice resulting to retention and

production of behavior (Corbett, 2003). It was also found that learners with ASD learned efficiently through video modeling methods since it reduced distraction (Sherer et al, 2001); thus, relevant cues were given focus (Charlop-Christy & Freeman, 2000). Delano (2007) also noted that skills acquired using video modeling can be used with great consistency across settings, persons and stimuli.

Charlop, Dennis, Carpenter & Greenberg (2010) used video modeling to promote appropriate expressive skills of three learners with autism during interactions. The study focused on four target behaviors: verbal comments, facial expression, gestures, and intonation. Each learner has an assigned video that shows two individuals interacting in a play setting three to four times. Results show that the learners acquired quickly the socially expressive behavior and exhibited generalization of the target behaviors in probes across setting, stimuli and persons.

Video modeling and vivo modeling was compared by Charlop-Christy, Le, and Freeman (2000) to determine which is more effective among learners with ASD ages 7 - 11. Results revealed that video modeling is more effective than in vivo modeling. Through video modeling, four out of five learners acquired the skill faster and all the participants successfully generalized skills taught using video modeling and none for vivo modeling. Ogilvie (2008) combined video modeling and peer mentoring to teach social skills to middle school students with ASD. Results indicated that there was an increase in the level of demonstration of skills of the learners with ASD.

In addition, video modeling has been utilized to educate learners with ASD on array of social skills. In particular, it is used in teaching complex verbal skills such as conversational speech, which have shown to be promising and effective (Nikopoulos & Keenan, 2004). Apple,

Billingsley, Schwartz and Carr (2005) found that using video modeling with self- management in teaching people with ASD increased the participant's behavior of giving compliments and initiating social interactions. Video modeling was also found effective in teaching role playing skills to learners with ASD. (Akmanoglu, Yanardag, & SemaBatu, 2014). Also, imitation skills (Dixon, Bergstrom, Smith, & Tarbox, 2010) and social initiation of school-aged children (Nikopolous & Keenan, 2004) was enhanced due to increased use of video modeling.

Gwilliam (2011) conducted a study on the effects of video modeling on socialization in children and adolescents with autism spectrum disorder. Results show that video modeling can be a useful strategy in developing socialization skills of children and adolescents with ASD since the intervention uses information regarding social interactions and behaviors and relates that knowledge with media that has been observed effective and motivating for children and adolescents with ASD. It also revealed that the strategy is easy to implement since it can be used in various settings and the technology used is easy to understand. Wilson (2013) also noted that video modeling requires minimal training and expertise to be conducted by the professionals and is affordable since it costs less time and resources to create a video model than a vivo model.

Video modeling is an effective intervention used to teach a variety of skills to learners with ASD since it does not require social interaction during learning; and it uses an engaging medium, television, which is presented in a simple and systematic way (Charlop- Christy, Le & Freeman, 2001). The use of visual aids, concrete rule-based presentations of social behaviors, and demonstration of examples of appropriate social behaviors and inappropriate social behaviors for comparison are observed to be useful in teaching learners with ASD (Charlop- Christy & Daneshvar, 2002).

Role Playing

Role play is one of the major forms of simulation where the learner is immersed through incorporating real-life problems and situations (Clapper, 2010). Driscoll (2005) claimed that role playing was derived from the constructivist learning paradigm where to understand experiences, knowledge should be constructed by learners. According to Cherif, Verma, and Somervill, (1998), role playing is divided into four stages: (1) Teacher prepares and explains the activity; (2) Students prepare for the activity; (3) Students participate in a role-playing activity; and (4) Teacher and students discuss the whole process.

Role playing is proven to be an essential part of teaching not only social skills but also an array of skills among learners with and without ASD (Schrandt, Townsend, & Poulson, 2009). Through this strategy, simulated opportunities are provided by the teacher for the participant to exhibit the social skill as well as comments based on the participant's performance during role playing (Leaf et al, 2012). In addition, social behavior of participants improves because role playing provides opportunities to practice the target social skills; it also permits participants to receive both positive and corrective feedback (Leaf et al, 2012); it encourages people to engage in an interaction (van der Meulen Rodgers, 1996) to determine strengths, difficulties, and outcome of conduct or attitude (Galbraith & Zelenak, 1991), and to teach communication skills (Jackson & Black, 2011). It also uses realistic scenarios that help students acquire knowledge needed (McKeachie, 2003).

Lohrman and Talerico (2004) utilized role playing with positive reinforcement in teaching positive behaviors. Participants joined the role-playing activities where they performed the appropriate and inappropriate behaviors while receiving positive reinforcement. Results

showed that disruptive behaviors significantly decreased; and there was an increase in positive behaviors (Dixon, Bergstrom, Smith & Tarbox, 2010). Gutman, Raphael-Greenfield, and Rao (2012) studied the effect of a motor-based (facial expressions, tonal inflection and body language) role-play intervention on the social skills of adolescents with high-functioning autism, and found out that it helped the participants to interpret other's emotions and share their own ideas. Moreover, Leaf et al. (2016) utilized role playing to teach social communication skills where the researcher demonstrated the appropriate behavior twice and inappropriate behavior twice and found that it increased their social communication skills.

Role playing is an intervention that helps children to practice target behavior and immerse themselves in social situations. Opportunities where experiences are analyzed and emotions are involved are provided which encourage participants to examine situations in a different perspective (Nickerson, 2008). Basic behavioral strategies combined with role playing help in increased skill acquisition (Dixon, Bergstrom, Smith & Tarbox, 2010).

Synthesis

One of the most essential outcomes for learners with ASD is improving social functioning. Having the ability to recognize what others feel helps learners with ASD to develop positive relationship among peers. Learners with ASD do not acquire social skills by just observing and participating in activities. It is necessary to target the specific behavior and provide support to use the skills within different social situations.

Learning through video modeling has been an effective and useful treatment approach for learners with ASD since it motivates and reinforces children to determine and imitate the target behavior. Role playing helps students to identify what they know and what they still need to

know. Combining video modeling and role playing of social situations helps learners with ASD to practice appropriate behavior, reaction and verbal responses (Storey, 2002). Through practice, social skills become more familiar that the students feel confident when they find themselves in real social situations.

1.3 Conceptual Framework

The researcher developed a conceptual framework that shows that combining video modeling and role playing, which both take advantage of the components of social leaning theory, the level of empathy of the learners with ASD will develop.

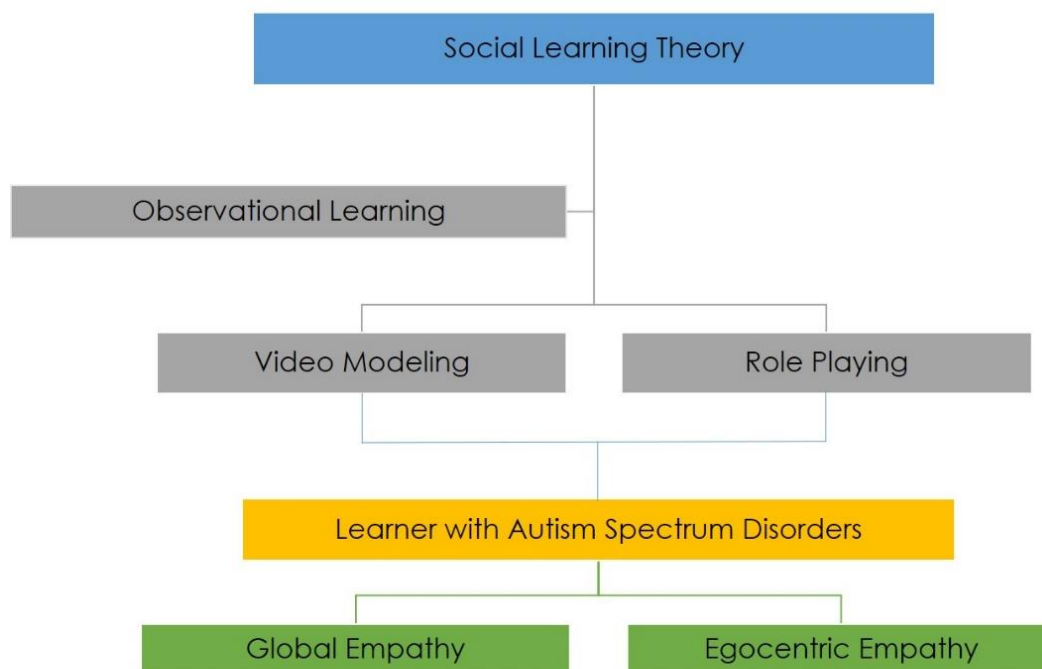


Figure 1. Conceptual Framework of the study

Bandura (1977) developed social learning theory/social cognitive theory which is the study of how people manage information acquired in social situations. One of the aspects of this theory is observational learning where learning occurs when a person observes other people behaving in a particular way and then be able to retain and replicate the desired behavior perceived in others. It has four components: attention, retention, reproduction and motivation. Attention is the process where the learner concentrates on the task or information as it is being exhibited. Retention is where the acquired task or information is retained in memories with the use of imagery and language. Reproduction involves the ability to imitate previously learnt task or information when required. The final component motivation serves as the reason for learning since it originates from the observation of another person's action is being rewarded or punished. According to Bellini (2006), motivation is vital for learners with ASD as they may not focus on the task or information they are not fascinated with.

Social skills instruction executed with components on social learning theory is one technique that has recognized success (Bandura, 1977). Video modeling and role-playing take advantage of the four components of modeling described by Bandura (1977) with the additional advantage of repetitive viewing since videos can be stopped, repeated, and slowed down with a consistent, clear message each time allowing the learner to learn, process, and practice skills that are necessary (Corbett, 2003). It incorporates showing desired behavior (modeling) and role-playing (reproduction) through videos and illustrations (attention and motivation). Corbett and Abdullah (2005) noted that video modeling works with children with autism because of their preference with visually-cued instructions since they respond more readily with visual information. Also, role-playing provides opportunities to practice the target social skills and to

receive both positive and corrective feedback (Leaf et al, 2012). Social behavior of learners improves because role playing provides opportunities to practice the target social skills; it also permits participants to receive both positive and corrective feedback (Leaf et al, 2012); it encourages people to engage in an interaction (van der Meulen Rodgers, 1996) to determine strengths, difficulties, and outcome of conduct or attitude (Galbraith & Zelenak, 1991), and to teach communication skills (Jackson & Black, 2011). It also uses realistic scenarios that helps students acquire knowledge needed (McKeachie, 2003).

The use of visual aids, concrete rule-based presentations of social behaviors, and demonstration of examples of appropriate and inappropriate social behaviors for comparison are observed to be useful in teaching learners with ASD (Charlop-Christy & Daneshvar, 2002) since learners with ASD can process visual information better than verbal information (Quill, 2007). Video modeling was also found effective in teaching role playing skills to learners with ASD. (Akmanoglu, Yanardag, & SemaBatu, 2014). Gwilliam (2011) found that video modeling can be a useful strategy in developing socialization skills of children and adolescents with ASD since the intervention uses information regarding social interactions and behaviors and relates that knowledge with media that has been observed effective and motivating for children and adolescents with ASD.

Strategies video modeling and role-playing, that belong to multimedia category, could be an effective medium in assisting students to develop empathy since it could also bring about various positive changes when introduced in the classroom. Both strategies proved that they helped learners with ASD to practice positive social behavior, responses, and skills which would help them in real life social situations. Furthermore, both strategies allow learner to concentrate

on one skill or behavior at a time since they can watch the videos or do role-play as many times as they need to learn the desired skill; and can be used to go over newly acquired or previously learned skill or behavior or reduce challenging behavior.

Autism spectrum disorder (ASD) is a continuum of neurodevelopmental disorder which is characterized to have communication and social interaction deficits among individuals with autism (American Psychiatric Association, 2013). Learners with ASD lack the ability to connect with others, communicate thoughts and feelings, have limited social interaction and have poor social skills in understanding other people, behaving appropriately in social situations, identifying social cues such as facial expressions, following and understanding social rules (American Psychiatric Association, 2013). One of these skills is empathy. Cotton (2001) defined empathy as the ability to share and understand other person's feelings and perspective through verbal and/or nonverbal communication. Sharing and understanding emotions of others is important to develop successful mutual relationships (Dziobek et al., 2008). Krznaric (2014) said that empathy has the power to create fundamental change in the society since it can transform relationships. Social communication and interaction skills allows learners with ASD to initiate and maintain positive social relationship and cope effectively with their environment (Erwin, Kathryn, & Purves, 2004) which are all important in dealing with people, building relationships and in learning. Having poor social interaction and communication skills may lead to difficulties such as recognizing social cues, engaging in social interactions (Cotugno, 2009); having interpersonal relationships (Rashid, 2010).

Hoffman (1977) developed a theory on empathy development that has four levels namely: global empathy, egocentric empathy, empathy for others, and empathy for another's life

condition. First level, global empathy, happens in the first year of children where they may copy emotions they witness (e.g., by crying when another infant is crying); but it is instinctive and indistinguishable. Egocentric empathy, the second level, happens when the child actively offers help that he or she finds comforting for other people. This study only used the first two levels of empathy development to determine if there was an improvement in the level of empathy of the participants.

One of the most essential outcomes for learners with ASD is improving social functioning. Having the ability to recognize what others feel helps learners with ASD to develop positive relationship among peers. Learners with ASD do not acquire social skills by just observing and participating in activities. It is necessary to target the specific behavior and provide support to use the skills within different social situations. Developing empathy is useful because when a child with ASD recognizes and understands the feelings and thoughts of self and others, he/she will be able to communicate effectively and relate well to others which leads to a more meaningful and smoother social interactions. (Goleman, 1995). Awareness and expression of their own emotions and feelings through modeling and encouragement precede the improvement of empathy; and prosocial behavior is developed because of empathy (Hodges et al., 2010). Moreover, sharing the affective experiences of others is a part of empathy (Singer & Lamm, 2009) and to help an individual to understand one another and feel the same way (Ioannidou & Konstantikaki, 2008).

Learning through video modeling has been an effective and useful treatment approach for learners with ASD since it motivates and reinforces children to determine and imitate the target behavior. Role playing helps students to identify what they know and what they still need to

know. Combining video modeling and role playing of social situations helps learners with ASD to practice appropriate behavior, reaction and verbal responses (Storey, 2002). Through practice, social skills become more familiar that the students feel confident when they find themselves in real social situations.

1.4 Research Problems

In line with the study's objective of developing an intervention program where video modeling and role-playing are combined towards the development of empathy among learners with ASD, the researcher sought to answer the following questions:

1. How was the level of empathy of the participants compared before and after the use of the combined intervention?
2. What progress is evident in the development of empathy among learners with ASD?

1.5 Definition of Terms

For clearer understanding of the terms used in this study, below are their meanings:

Autism Spectrum Disorder – refers to having varying degrees of deficits in the ability to connect with others and communicate thoughts and feelings.

Challenging behavior – refers to the unusual behavior portrayed by the participants such as being aggressive, not minding one's own business, giving unnecessary comments, and limited to no interaction.

Empathy – refers to recognizing other’s facial expressions and body language, being aware of how others feel, communicating own emotion and responding to emotion of others appropriately.

Hoffman’s Stages of Empathy Development – refers to the stages of empathy development which includes four stages: global empathy, egocentric empathy, empathy for others, and empathy for another’s life condition.

Intervention program – refers to a planned set of methods that are aimed to teaching specific set of social skills to learners with ASD.

Positive behavior – refers to favorable behavior such as engaging with other people, initiating social interactions, and responding appropriately to a certain situation.

Role playing– refers to an activity where participant will practice and perform the target behavior.

Social skills – refers to favorable behaviors that help learners with ASD to connect and respond in a variety of social situations.

Social interaction – refers to a friendly, comfortable relationship between two or more people

Video modeling – refers to a technique where the learner watches a demonstration of the target behavior and then mimics the behavior of the model with the help of prompts and feedbacks.

Chapter 2

METHODOLOGY

2.1 Research Design

The study was a combination of qualitative and quantitative research. Triangulation method was used to confirm the findings of this study. Qualitative data was gathered through unstructured observations of the researcher and interview of the teachers which provided an insight of the development on the level of empathy of each participant. For quantitative data, single-subject design (A-B-A) was used to determine the effect/s of combining video modeling and role-playing and vice versa in developing the empathy of learners with ASD.

At the onset of the study, baseline (A) observations and initial responses to interviews and scales were taken to assess the participants in the initial state. Two sequences of treatment (B), video modeling - role playing and role-playing – video modeling, were employed. The participants were assessed using the same outcome variables (A) given during the baseline phase to determine the effectiveness of the treatment.

2.2 Participants

Students

Through purposive sampling, four elementary students were recruited from Malvar Central School, considering the following criteria: (a) ages 6 to 13; (b) received prior diagnosis meeting the autism spectrum disorder DSM V criteria (American Psychiatric Association, 2013); and (c) demonstrated no or low significant language or communication deficits so that they could somehow share their thoughts and answer simple questions. All of the participants belong to a

self-contained class. Pseudonyms were used to ensure privacy and confidentiality of the participants, and they were randomly assigned to video modeling - role playing (VMRP) sequence and role-playing - video modeling (RPVM) sequence.

Table 1

Participant's profile					
Participant	Sex	Age	Level of Autism	Schedule	Sequence
Participant 1	M	6	Level 1: Requiring support	AM	RPVM
Participant 2	M	6	Level 1: Requiring support	AM	RPVM
Participant 3	M	7	Level 1: Requiring support	PM	VMRP
Participant 4	M	9	Level 1: Requiring support	PM	VMRP

Table 1 shows the profile of the participants. Participant 1 and 2 are both six years old and belong to the morning session while Participant 3 and 4 are seven and nine years old respectively and belong to the afternoon session. All of the participants are in the first level of autism, described as requiring support.

Parents and Teachers

Parents and teachers of each participant were asked to answer the Autism Social Skills Profile and Empathy Spectrum Quotient before and after the intervention. The teachers were interviewed to determine if there were any effects on the level of empathy of each participant.

Two teachers were interviewed. Teacher A handles the AM class where the two participants belong, and Teacher B handles the PM class where the other two participants belong. Teacher A has been teaching learners with special needs for two years and Teacher B has been teaching learners with special needs for eight years.

2.3 Setting

The school of the participants is located in Malvar, Batangas. It has a Special Education department that manages a self-contained class that has adaptive and academic tracks. It aims to develop and maximize the learning competencies such as functional and social skills with the goal of mainstreaming in the regular school system, and instill values to make the learners with exceptionalities useful and effective member of the society. The kindergarten class is a self-contained class which consist of three to five students. The class is a mixture of learners with ASD, ADHD, Down Syndrome and Learning disabilities. The intervention served as an adjunct to current interventions being implemented in the class such as discrete trial training and that focus on the social skills of the learners with exceptionalities.

2.4 Tools and Instruments

The materials that were used are videos that show social situations, role playing guide, the Autism Social Skills Profile, and the Empathy Quotient.

Video Animation

Five video animations showed positive behavior on a particular social situation, such as: a classmate did not do well in a test, a friend has a new pencil case, a friend got involved in a minor accident, a classmate did not have crayons, and a friend left his food at home. These scenarios were based on the items in Autism Social Skills Profile and Empathy Spectrum Quotient. Each video animation focused on one social skill only and lasted for two to three minutes. Each video was evaluated by a SPED professor, occupational therapist, and college professor using a rubric (Appendix N). A tablet was used to view the video animation.

Role playing guide and illustration

This was used for the role-playing intervention (Appendix N). It included the picture of the target behavior and the researcher's script during the role-playing process. It was divided into three parts: briefing (introduction), demonstration, and debriefing. The target behaviors included taking turns, recognizing personal space, not interrupting a conversation, getting frustrated, and engaging in a conversation. These target behaviors were also based on the items in Autism Social Skills Profile and Empathy Spectrum Quotient. Likewise, each guide was evaluated by a SPED professor, occupational therapist, and college professor using a rubric (Appendix P & Q).

Table 2

Validator's profile

Name	Present Position	Institution/ Affiliation	No. of years in service	Highest Educational Attainment
Validator 1	Professor	Philippine Normal University – Manila	35	Doctorate degree
Validator 2	Professor	De La Salle University Manila	10	Master's degree
Validator 3	Occupational Therapist	University of Sto. Tomas	5	Bachelor's degree

Table 2 presents the profile of the experts who validated the video animation, illustration, and role-playing guide. The first validator is a professor in Philippine Normal University – Manila and has been teaching for 35 years. The second validator is a professor in De La Salle University Manila and has been teaching for 10 years. The third validator is an occupational therapist who graduated from University of Sto. Tomas and has been practicing for five years.

Autism Social Skills Profile

Autism Social Skills Profile was developed by Scott Bellini. It is a 49-item with 4-point

scale (Never, Sometimes, Often, Very Often), 1 being the lowest and 4 being the highest that is used to explain ability or behaviors that a child might exhibit during social exchanges or in social conditions independently, without any prompts or assistance from others over the last three months. If there is a need for additional information on a specific skill, a “brief description” is provided (Appendix F). Items have high internal consistency with a Cronbach’s alpha level of .926 and shows good test-retest reliability.

This was answered by the teachers and parents before and after the intervention. This measure was used with the written permission of the author (Appendix J). It was scored with the guidance of a psychometrician.

Empathy Spectrum Quotient

Empathy - Spectrum Quotient for children is a 55-item questionnaire about real life conditions, occurrences, and activities where skills on empathizing and systemizing were required. It was developed by Bonnie Auyeung, Carrie Allison, Simon Baron-Cohen, and Sally Wheelwright in 2012 based on the adult empathy-systemizing quotient scale that was developed by Baron-Cohen and Wheelwright in 2004 to determine trends in gender-typical behavior of adults. It has a four-point response format (“I strongly agree” - “I strongly disagree”) with a high internal consistency of ($\alpha = 0.93$) and shows good test-retest reliability. The scale is a combination of empathizing and systemizing items. The scale includes 27 EQ-C question and 28 SQ-C questions. The EQ-C comprised of cognitive and affective empathy. (Please see Appendix G).

This was answered by the teachers and parents before and after the intervention. This measure was used with the written permission of the author (Appendix J). It was scored with the

guidance of a psychometrician.

Observation guide

The researcher used an observation guide (Appendix M) to determine the behavior of each participant before and after the intervention. The researcher focused on three areas: expressing emotions, reacting to someone else's feelings and showing empathy. This helped the researcher identify the effects of the intervention in the development of empathy.

Interview questions

Three questions (on expressing emotions, reacting to someone else's feelings, and showing empathy) were asked before and after the intervention to determine if the participant performed at all the target behavior prior to the intervention, and if there was any development with the behavior of the child. The questions were prepared in advance and the session was conducted after class hours to avoid disturbing the schedule. (Please see Appendix K).

2.5 Data Gathering Procedure

The data gathering procedure was divided into three phases: pre-intervention, intervention, and post-intervention.

Pre-intervention

Baseline of each participant was collected for two weeks. No intervention was applied during the baseline assessment.

1. The researcher interviewed the teachers on the first week. Each interview lasted for less than 30 minutes.
2. Teachers and parents were asked to answer the Empathy Spectrum Quotient and the

Autism Social Skills Profile, and were requested to return the scales by the end of the first week.

3. The researcher started to observe the participants. The researcher observed how the participants interacted with other people during class period four times a week for two hours. Observation guide was used during this period.
4. During the two - week observation period, the researcher introduced herself so that the participants would be familiar with her. Researcher's observation and teacher's interview were used to collect data as to whether video modeling-role playing /role playing - video modeling intervention helped in the development of empathy among the participants.

Intervention

The participants were divided into two groups randomly, with each having two participants. The first group followed the role-playing – video modeling intervention, while the second group followed the video modeling – role playing intervention. This was done to determine which sequence was more effective in developing empathy among learners with ASD. Procedures in video modeling and role-playing were standardized to ensure that all the participants had the same experience. The intervention occurred in the assigned classroom, with one on one session between the researcher and each participant. Both morning and afternoon sessions occur after the participants' recess so they would not be distracted by their snacks and be able to focus more on task. Explanation of the target behavior is the same for all the participants as well as the feedback.

The combination of the video modeling scenario and role-playing task per session was based on the teacher's interview, researcher's observation, and results of ASSP and ESQ of each

participant. The intervention occurred for six weeks. There were four 30-minute sessions per week, and a SPED teacher was with the researcher and the participant during these sessions.

Correct responses were taught as the participant performed the target behavior he was working on. Positive feedback, approval or reward was provided on all the attempts as the participant became more and more like the behavior of the model.

Video modeling

1. The researcher told the participant about the target behavior assigned to him. The assignment of the target behavior depended on the initial teacher's interview and the observation of the researcher.
2. The researcher proceeded to playing the assigned video showing target behavior in a social situation. The researcher sat next to the participant to ensure that the child attended to the video. If the child looked away from the video, the researcher would say, "Pay attention."
3. The video was played twice per session. On the first viewing of the video, the researcher and the participant just watched the video
4. Then, the participant copied the actions along with the model on video on the second playing. Prompts were given by the researcher based on what the model did on the video. The imitation of the target behavior lasted for 10 minutes per session so the participant would be able to practice and understand the target behavior.
5. When the second viewing was done, the researcher asked the participant what happened in the video. This was done to determine if the participant understood what was just watched. The response/s of the participant was/were recorded. Prompts were given to the

participant to help him understand the target behavior better.

Role playing

1. The researcher asked the participant to do role-playing of a different situation that showed empathy. It was not the same situation as that in the video modeling to ensure that the participant would not just imitate what he just watched. As already mentioned, the scenario used was based on ESQ and ASSP.
2. Role-playing process was divided into three: briefing, demonstration, and debriefing.
3. In briefing stage, the researcher showed a picture of the assigned scenario in the classroom. The researcher asked the participant to look at the picture and asked him, “What is happening?” Then, the researcher gave the participant more details about the target behavior. The researcher coached the participant when the answer was not related to the question.
4. During demonstration stage, the researcher told the participant to demonstrate the appropriate behavior if the social situation would happen to him. The researcher modeled the target behavior first; then the participant demonstrated the target behavior. The participant was provided with the opportunity to practice the target behavior. Demonstration of the target behavior lasted for 10 minutes per session to allow the participant practice and understand the target behavior.
5. In debriefing stage, the participant was asked a question on how he felt after doing the activity. The response format was “I feel _____ (emotion) when I _____ (the action that the participant did) because _____.” This was done to see if the participant understood what he did. All the responses were recorded.

Post Intervention

Post intervention data of each participant was collected for two weeks. This was done to determine the effects of the intervention.

1. A week after completing the intervention for both groups, the researcher asked the teachers and parents to answer the Empathy Spectrum Quotient and the Autism Social Skills Profile once again.
2. The researcher interviewed teachers using the same interview questionnaire to determine if there was any improvement in the empathy level of each participant.
3. The researcher also did an observation of all the participants for two weeks in their classrooms using the observation guide to determine if the intervention contributed to the development of empathy.

Debriefing Plan

Debriefing plan was conducted after the post – intervention. It was done to explain to the parents and the participants the issues addressed by the study and the results and to thank them for participating in the study.

1. The researcher gave out and discussed the debriefing form to the guardians of the participants. Debriefing form included the objective of the study, the way in which the answers were evaluated, procedure and results.
2. Then, the researcher had another one-on-one session with each participant. The researcher thanked him for participating in the study and discussed the results of the study in a manner that the participant would understand.
3. The researcher explained as well why he was asked to watch videos and participate in

role playing tasks.

2.6 Data Research Procedure

This includes the three phases: preparatory phase, implementation phase, and evaluation phase.

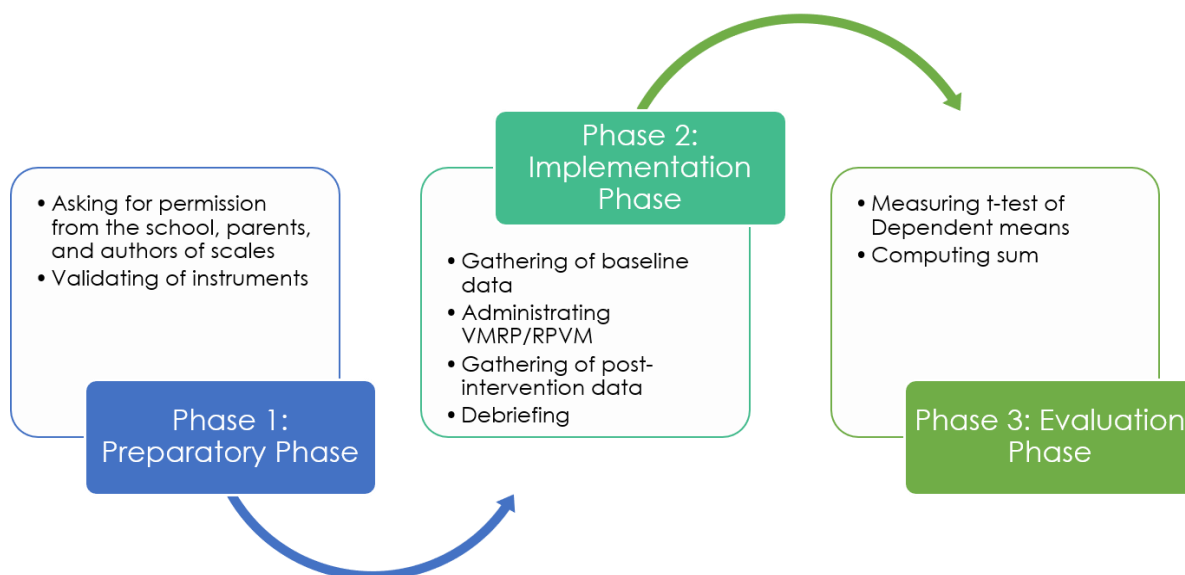


Figure 2. Data research procedure

Figure 2 shows the data analysis procedure of the study. It has three phases, preparatory phase, implementation phase, and evaluation phase. The preparatory phase included asking of permission from the school, parents and authors of the scale, and validating of instruments. Gathering of baseline data, administrating the intervention, gathering of post-intervention data, and debriefing were included in the implementation phase. Finally, the evaluation phase included measuring of t-test of Dependent means and computing mean.

Phase 1: Preparatory Phase

This is the phase where permission was asked and instruments were validated. Letter

addressed to principal of the school was provided seeking permission to conduct the study. After the letter was approved, the researcher sought the involvement of the parents. A letter was addressed to them, informing them about the objective of the study, duration, and benefits to their children. Then, the researcher requested the experts to validate the research instruments: video animation, role playing guide and pictures. They were given a letter to let them know what the study was about, purpose of the study and how they would evaluate all the instruments through the given rubric. Three rubrics were devised for the assessment of the instruments. All the rubrics have a scale of 1 to 4. The results were tallied, computed, and presented in table form to show the mean and corresponding verbal interpretation. The research instruments were presented to the experts for evaluation and approval before they were used. The researcher also asked for permission from the authors of Autism Social Skills Profile scale and Empathy Spectrum Quotient scale.

Phase 2: Implementation Phase

This phase involved the administration of the intervention, divided into three parts: baseline, intervention, and post-intervention. During baseline, preliminary one-on-one interview with teachers and researcher's observation was done simultaneously with the completion of Autism Social Skills Profile and Empathy Spectrum Quotient by the teachers and parents of the participants. This was done to establish the empathy skills of the participants before the intervention. Then, the video modeling – role playing was administered for six weeks, with two sequences, video modeling – role playing and role-playing – video modeling. This was done to determine which sequence was more effective in developing empathy among learners with ASD. Procedures in video modeling and role-playing were the same for both groups. Lastly, teachers

were interviewed again using the same questions to once again answer the Empathy Spectrum Quotient and the Autism Social Skills Profile. The researcher observed the participants for two weeks to determine if the intervention helped them to develop empathy. Debriefing was also conducted to explain to the participants why they were asked to participate and explain the results of the study in a manner that they would understand.

Phase 3: Evaluation Phase

This involved the evaluation of the effectiveness of implementing video modeling – role playing intervention on developing empathy among learners with ASD. The researcher, with the guidance of a psychometrician, measured the scores of each participant in Autism Social Skills Profile (ASSP) and the Empathy Spectrum Quotient (ESQ). To derive comprehensive and valid results of ASSP, t- test of dependent means was applied to determine if there was a significant difference between the level of empathy of the first group who followed the video modeling – role playing sequence and the level of empathy of the second group who followed the role-playing – video modeling sequence before and after the intervention. This was the formula used by the researcher in computing for the t-test:

$$t = \frac{\sum D}{\sqrt{\frac{N \sum D^2 - (\sum D)^2}{N-1}}}$$

where:

t = The *t*-statistic (*t*-test statistic) for a paired sample *t*-test

D = Differences between two paired samples

N = The sample size

Mean is the central value of a set. To calculate, add all the numbers, then divide by how many numbers there are. In this study, it was used to determine the empathizing skills of the participants before and after the involvement in the combined intervention. This was the formula used by the researcher to compute for mean:

where:

$\bar{x}$ = sample mean

Σ = add up

x = all the x -values

N = sample size

Presented next is the framework used for the

$$\bar{X} = \frac{\sum X}{N}$$

analysis of data.

Table 3

Research framework		
Research Question	Instruments	Analysis procedure
1. How can we compare the level of empathy of the participants before and after the use of the combined intervention?	Teacher's interview; observation guide; Autism Social Skills Profile and Empathy Spectrum Quotient	t-test of Dependent means; sum
2. Which sequence revealed a more positive outcome with regard to the level of empathy of the participants?	VMRP intervention	t-test of Dependent means; sum

Table 3 shows the analysis framework of the study. The first research question was answered using teacher's interview; observation guide; Autism Social Skills Profile; and Empathy Spectrum Quotient, results of which were analyzed by measuring the t-test of Dependent means and computing the sum. The second research question was answered using the intervention and was analyzed using t-test of Dependent means and sum.

2.7 Ethical Considerations

Letter of consent was obtained from the school (Appendix A). A meeting was arranged between the child's parents and special education teachers to provide them the purpose of the study, description of the procedure, and benefits of the intervention.

Written consent was obtained from all the parents (Appendix C). It included the identification and contact information of the researcher, research procedures, time required, and potential benefits. It also provided reiteration that participation was voluntary, and the participant was free to choose not to participate. The participants were informed that they could quit at any time without consequences of any kind if they chose to participate. Verbal assent was obtained from the participants (Appendix D). Each was told about the information of the researcher, purpose of the study, the reason why he was chosen to participate, time required and procedures of the research. Pseudonyms were used in the study. Results of the study absolutely remained confidential and used for educational purposes only.

Results of the study were presented at a thesis defense. Privacy and confidentiality were assured using pseudonyms. The identity of the participants was not revealed during the defense. All gathered data was stored in a safe storage that can be accessed by the researcher only. Results of the study were used for educational purpose only.

The researcher avoided any kind of bias in the data gathering, data analysis, data interpretation, and any other aspects of research where objectivity is expected and required. There were teachers during the implementation of the intervention to ensure that the researcher reported honest data and strictly followed the procedures of the intervention.

Chapter 3

RESULTS AND DISCUSSIONS

3.1 Results

This shows the quantitative and qualitative results of all the data gathered from participants, presented case by case. The manner of discussion begins with a focus on quantitative aspect that includes the results of Autism Social Skills Profile and Empathy Spectrum Quotient, followed by the qualitative aspect that includes the teacher's interview and researcher's observation.

Role Playing - Video Modeling Sequence

Case 1 Profile

Participant 1 (P1) is a six-year-old boy and the younger of the two boys. He was diagnosed at the age of four. He belongs in the morning self-contained class of Teacher A with five other students. His role-playing task was taking turns and the video he watched was about sharing food.

Shown first is the quantitative data of P1 showing the results of Autism Social Skills Profile in Figure 3 and 4 and Empathy Spectrum Quotient in figure.

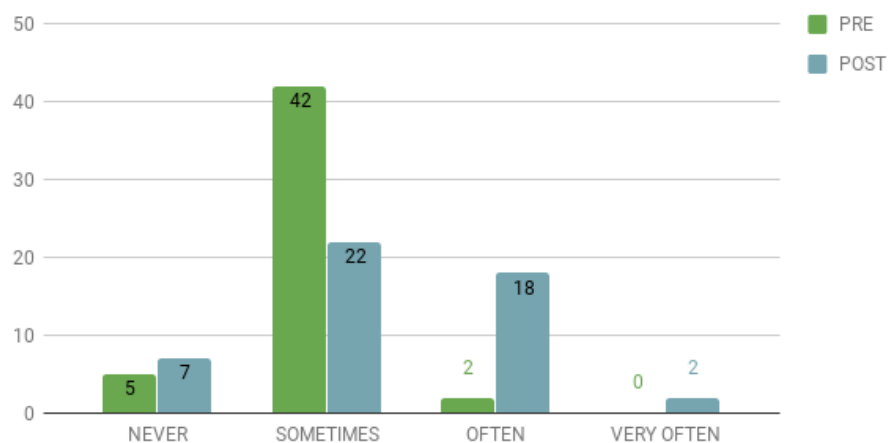
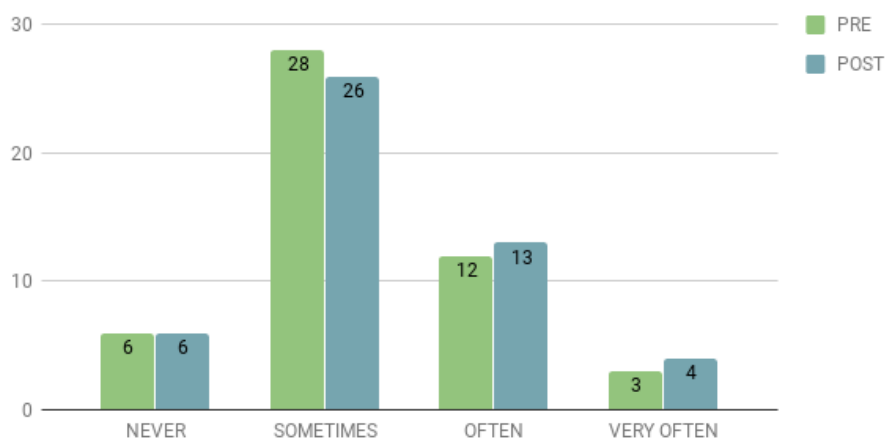


Figure 3: Distribution of Pretest and Posttest Scores by the Teacher

Figure 3 shows the results of ASSP before and after video modeling-role playing intervention answered by the teacher. It illustrates that before the intervention, five out of 49 skill areas were never or almost never exhibited and it became seven skill areas after the intervention. 42 out of 49 skills areas were sometimes or occasionally exhibited before the intervention and it decreased to 22 after the intervention. Then, two out of 49 skill areas were often or typically exhibited and it increased to 18 after the intervention. After the intervention, there were two skill areas that he very often or always exhibited. It shows that there was an increase in the social functioning of the participant.



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Figure 4: Distribution of Pretest and Posttest Scores by the Parent

Figure 4 shows the results of ASSP before and after video modeling-role playing simulation intervention answered by the parent. It illustrates that before and after the intervention, he never or almost never exhibited six out of 49 skill areas. There were 28 out of 49 skills areas that he sometimes or occasionally exhibits and it became 26 after the intervention. Then, there are 12 out of 49 skill areas that he often or typically exhibits and it increased to 13 skill areas after the intervention. There were three out of 49 skill areas that he very often or always exhibits before intervention and it increased to four after the intervention. It shows that there was an increase in the social functioning of the participant.

Table 4

Paired-Sample T-Test of ASSP answered by teacher and parent of Participant 1

		Mean	N	Std. Deviation	Std. Error Mean	t	Do	Sig. (2-tailed)
TCHR	PRE	1.6327	49	0.5662	0.08089	-4.47	48	.000
	POST	2.1224		0.6656	0.09509			
PRNT	PRE	1.6939	49	0.58467	0.08352	-3.928	48	.000
	POST	2.1224		0.63353	0.0905			

Table 4 shows the results of the paired-sample t-test conducted to compare the ASSP of Participant 1 before and after the role-playing - video modeling intervention. There was a significant difference in the scores IV level 1 ($M = 1.63$, $SD = .56$) and IV level 2 ($M = 2.12$, $SD = .66$) conditions; $t(48) = -4.47$, $p < .001$ ". The results of the parent's responses showed that there was a significant difference in the scores IV level 1 ($M = 1.69$, $SD = .58$) and IV level 2 ($M = 2.12$, $SD = .63$) conditions; $t(48) = -3.92$, $p < .001$. It shows that there was an increase in the social functioning of the participant.

Meanwhile, results of Empathy Spectrum Quotient of P1 is presented in Figure 5.

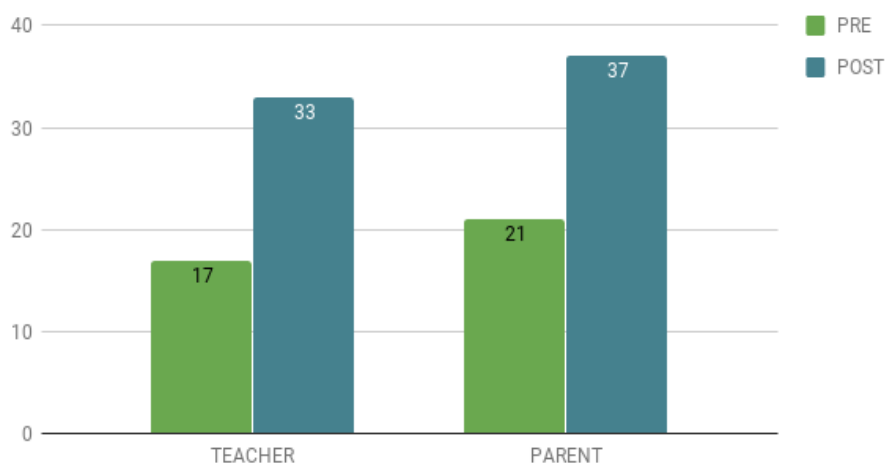


Figure 5: Total Pretest and Posttest Scores of Empathy Spectrum Quotient

Figure 5 illustrates the total scores of Participant A for empathy spectrum quotient. Before the intervention, his teacher gave him a score of 17. It increased to 33 after the intervention. His parent gave him 21 before the intervention. It increased to 37 after the intervention. It shows that there was an improvement in the empathy level of the participant.

Table 5

Paired-Sample T-Test of ESQ answered by teacher and parent of Participant 1

		Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2- tailed)
TCHR	PRE	0.3091	55	0.46638	0.06289	-4.047	54	.000
	POST	0.6		0.62657	0.08449			
PRNT	PRE	0.3818	55	0.56078	0.07562	-4.707	54	.000
	POST	0.6727		0.63987	0.08628			

Table 5 shows the results of the paired-sample t-test done to compare the ESQ of Participant 1 before and after implementing the role-playing - video modeling intervention. There was a significant difference in the scores IV level 1 ($M = .30$, $SD = .46$) and IV level 2 ($M = .60$, $SD = .62$) conditions; $t(54) = -4.04$, $p < .001$ ” according to the answer of the teacher. There was a significant difference in the scores IV level 1 ($M = .38$, $SD = .56$) and IV level 2 ($M = .67$, $SD = .63$) conditions; $t(54) = -4.70$, $p < .001$ ” according to the answer of the parent. It shows that there was an improvement in the empathy level of the participant.

After the quantitative data presentation, the qualitative aspect from the teacher’s interview and researcher’s observation is also presented. Table 6 shows the data from the teacher’s interview and researcher’s observation before the intervention while Table 7 shows the result of the teacher’s interview and researcher’s observation after the intervention.

Table 6

Summary of Participant 1’s behavior before the intervention based on teacher’s interview and researcher’s observation

Expressing emotions	
Teacher	Researcher
- Expresses emotions nonverbally - doesn't say how he feels even when asked - frowns all the time - hits classmates when upset - throws tantrums when he doesn't feel like doing tasks anymore.	- frowns all the time, especially when he's doing writing task - shrugs when he doesn't understand what the teacher is saying - puts his chin on his hand to show his boredom with the task. - has minimal eye contact

Reacting to someone else's feelings	
Teacher	Researcher
• gives unnecessary comments when a classmate is reprimanded • minds his classmates instead of focusing on his task • ignores classmates when it comes to playing with toys; always wants to be the first one to play with it	• does not do his task even if the teacher stopped talking and looking straight at him • has a hard time determining if his classmate is annoyed or upset
Showing empathy	
Teacher	Researcher
• resorts to physical aggression • does not have varied facial expressions • has difficulty recognizing facial expression and body language • laughs at his classmate instead of showing concern or offering comfort • does not wait for his turn	• does not recognize emotions of other people • does not realize something he says or does can hurt the feelings of another like pushing, giving unsolicited comments, not taking turns and not sharing

Based on the answers of the teacher and the researcher's observation prior to the intervention, it revealed that Participant 1 did not have a positive behavior. He displayed limited awareness of the emotions of others such as annoyance, anger, and upset so he did not respond in an appropriate manner. He was a bit aggressive and lacked awareness of facial expression and body language of others, so he missed conversational cues. He did not respond appropriately to certain situations such as when someone offered compliments, when someone offered help, or when someone asked for help. Also, he was always frowning; thus, his facial expressions did not match the emotion being expressed. It seemed like he did not understand that his actions such as pushing and giving unsolicited comments affected his classmate even more

Table 7

Summary of Participant 1's behavior after the intervention based on teacher's interview and researcher's observation

Expressing emotions	
Teacher	Researcher
• Expresses emotions nonverbally • Lessened tendency to push or hit his classmate • Tries to display a more positive attitude toward doing his task.	• has varied facial expressions • shows the OK sign when asked how he feels • still shrugs and puts his chin on his hand to show his boredom • tries to look in the eye when being talked to
Reacting to someone else's feelings	
Teacher	Researcher
• is gentler now with his classmates • lessened tendency to say anything when someone is being reprimanded • tries to keep quiet when teacher is reprimanding his classmate • lessened tendency to get upset when he needs to wait for his turn	• tries to keep quiet whenever he sees his teacher not talking or just staring at him • lessened manifestation of teasing his classmate who writes slowly whenever he sees her face that's about to cry • starts to be more compliant and shows ability to listen
Showing empathy	
Teacher	Researcher
• starts to show concern when someone is upset by keeping quiet • begins to have varied facial expressions • lessened tendency to hurt anyone anymore when he is upset • tries to share his food and things willingly	• starts to check if his classmates who dislikes coloring would cry before doing his task • lessened tendency to push classmates • starts to mind his own business instead of giving unnecessary comments • starts to share his supplies and food to those who don't have

Participant 1's challenging behavior lessened after the intervention. He learned how to wait for his turn, not to be aggressive, and stayed quiet when someone was being reprimanded. Also, he somehow understood that when someone was crying, the best thing to do was to keep quiet. It was observed that Participant 1 had more positive behavior because he tried to be more focused on his own task, more compliant and had lessened tendency to hurt his classmates. He

started to respond appropriately to certain situations such as helping.

Case 2 Profile

Participant 2 (P2) is a six-year-old boy and the youngest of three boys. He was diagnosed with autism at the age of three. He belongs in the morning self-contained class of Teacher A with five other students. His role-playing task was dealing with frustration, doing breathing exercise, and the video he watched was about sharing school supplies.

Figure 6 shows the results of P2's Autism Social Skills Profile.

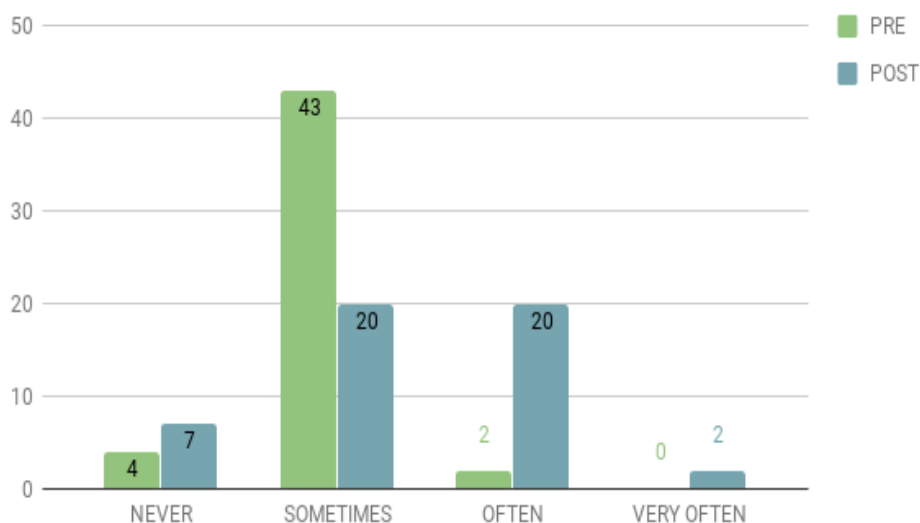


Figure 6: Distribution of Pretest and Posttest Scores by the Teacher

Figure 6 shows the results of ASSP before and after video modeling-role playing simulation intervention answered by the teacher. It illustrates that before the intervention, four out of 49 skill areas were never or almost never exhibited and it became nine skill areas after the intervention. 43 out of 49 skills areas were sometimes or occasionally exhibited before the

intervention and it decreased to 20 after the intervention. Then, two out of 49 skill areas were often or typically exhibited and it increased to 20 after the intervention. After the intervention, there were two skill areas that he very often or always exhibited. It reveals that social functioning of the participant was developed.

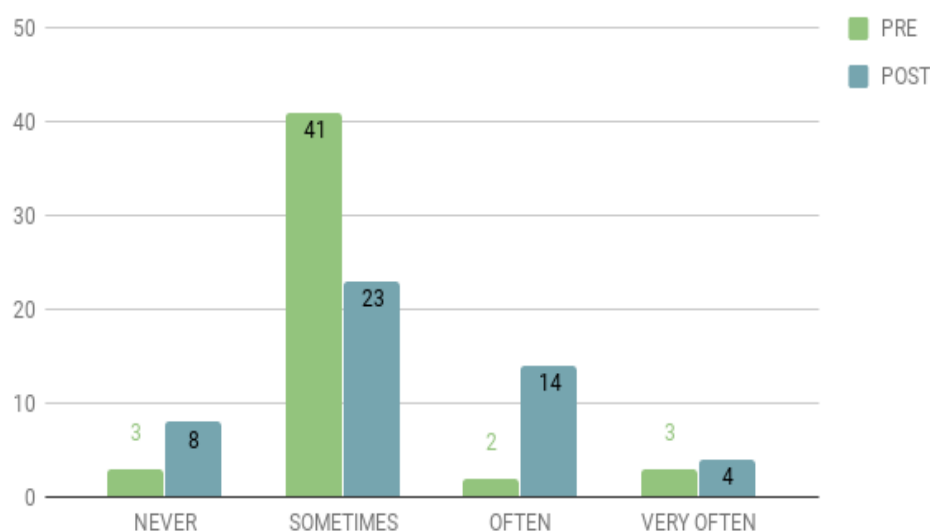


Figure 7: Distribution of Pretest and Posttest Scores by the Parent

Figure 7 shows the results of ASSP before and after video modeling-role playing simulation intervention answered by the parent. It illustrates that before the intervention, he never or almost never exhibited three out of 49 skill areas and it increased to eight after the intervention. There were 41 out of 49 skills areas that he sometimes or occasionally exhibits and it became 23 after the intervention. Then, there are two out of 49 skill areas that he often or typically exhibits and it increased to 14 out of 49 skill areas after the intervention. There were three out of 49 skill areas that he very often or always exhibits before intervention and it increased to four after the intervention. It reveals that the social functioning of the participant was developed.

Table 8

Paired-Sample T-Test of ASSP answered by teacher and parent of Participant 2

		Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
TCHR	PRE	1.9592	49	0.35114	0.05016	-3.577	48	0.001
	POST	2.3469		0.77865	0.11124			
PRNT	PRE	2.102	49	0.58612	0.08373	-1.844	48	0.071
	POST	2.2857		0.84163	0.12023			

Table 11 shows the results of the paired-sample t-test done to compare the ASSP scores of Participant 2 before and after implementing the role-playing - video modeling intervention. There was a significant difference in the scores IV level 1 ($M = 1.95$, $SD = .49$) and IV level 2 ($M = 2.34$, $SD = .77$) conditions; $t(48) = -3.57$, $p < .001$ ". However, responses of parent showed that there was no significant difference in the scores IV level 1 ($M = 2.10$, $SD = .58$) and IV level 2 ($M = 2.28$, $SD = .84$) conditions; $t(48) = -1.84$, $p = .071$ ". It shows that there was an increase in the social functioning of the participant.

As regards Empathy Spectrum Quotient, results are shown in Figure 8.

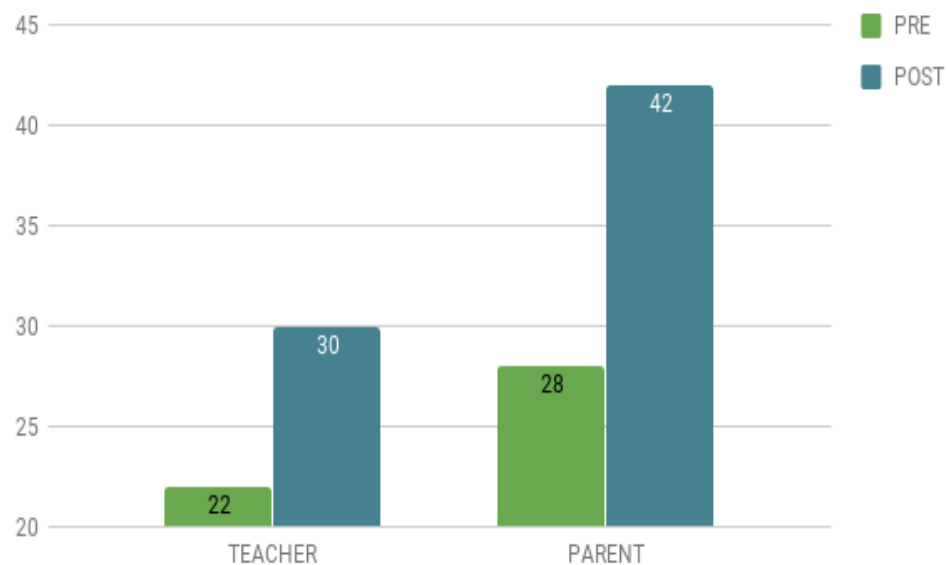


Figure 8: Total pretest and posttest scores for empathy spectrum quotient.

Before the intervention, his teacher gave him a score of 22. It increased to 30 after the intervention. His parent gave him 28 before the intervention. It increased to 42 after the intervention. It reveals that the level of empathy of the participant was developed.

Table 9

Paired-Sample T-Test of ESQ answered by teacher and parent of Participant 2

		Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2- tailed)
TCHR	PRE	0.4	55	0.49441	0.06667	-2.408	54	0.019
	POST	0.5455		0.57149	0.07706			
PRNT	PRE	0.5091	55	0.6047	0.08154	-3.651	54	0.001
	POST	0.7636		0.66566	0.08976			

Table 13 shows the results of the paired-sample t-test done to compare the ESQ of Participant 2 before and after implementing the role-playing - video modeling intervention results. There was a significant difference in the scores IV level 1 ($M = .40$, $SD = .49$) and IV level 2 ($M = .54$, $SD = .57$) conditions; $t(54) = -2.40$, $p = .019$ ” according to the answer of the teacher. Also, there was a significant difference in the scores IV level 1 ($M = .50$, $SD = .60$) and IV level 2 ($M = .76$, $SD = .76$) conditions; $t(54) = -3.65$, $p < .001$ ” according to the answer of the parent.

Table 10

Summary of Participant 2’s behavior before the intervention based on teacher’s interview and researcher’s observation

Expressing emotions

Teacher	Researcher
- expresses emotions nonverbally - fidgets when bored - throws tantrums when he doesn’t feel	- cries when he’s frustrated with his task - throws tantrums when he doesn’t want to write anymore

like doing tasks anymore	• likes to stick his tongue out, his way of teasing.
• sticks his tongue out to tease classmate	
Reacting to someone else's feelings	
Teacher	Researcher
• stares when someone is crying or being reprimanded instead of focusing on own work	• ignores teacher's looks which means to focus on task
• doesn't offer comfort nor show concern	• insists on playing with classmates even if they are upset or teacher asks him to focus
• sometimes gets distracted when his classmate initiates talking	• sticks his tongue out to his classmate, annoying the classmate even more.
Showing empathy	
Teacher	Researcher
• has little awareness of the emotions	• doesn't show any concern to his peers' feelings when they are crying or being reprimanded
• reacts inappropriately to situations	• stares at the classmate or laughs at him instead of offering comfort
• does not show concern when someone is crying	• does not realize something he says or does can hurt the feelings of another like not focusing on task and insisting to play at the wrong time
• has limited social interaction	
• throws tantrums	
• does not follow schedule	

Table 10 shows the summary of the teacher's interview and researcher's observation before the intervention. It revealed that Participant 2 threw tantrums often, did not show concern nor offered comfort, and did not express his emotions verbally. He also displayed limited awareness of the emotions of others, so he did not respond in an appropriate manner to certain situations such as when someone needed to focus on task, and when someone asked for help. He lacked awareness of facial expression and body language of others. He did not realize something he said or did could hurt the feelings of another like laughing at classmate.

Table 11

Summary of Participant 2's behavior after the intervention based on teacher's interview and researcher's observation

Expressing emotions	
Teacher	Researcher
- lessened manifestation of tantrums - lessened tendency to stick his tongue out anymore - starts to express his emotions more nonverbally	- enjoys dancing time very much. - starts to look at others to initiate play - smiles when told that he looks good
Reacting to someone else's feelings	
Teacher	Researcher
- starts to focus on his work instead of staring - appreciates compliments from adults by smiling - tries to engage in reciprocal exchanges by giving comments on his classmate's new haircut or bag.	- starts to understand that he needs to do his task once the teacher starts to look at him. - Tries to focus on own work when he sees his classmates focused - laughs when someone laughs - lessened tendency to give unnecessary comments or stick his tongue out when someone is reprimanded
Showing empathy	
Teacher	Researcher
- starts to encourage his classmates to pack away the toys after playing - tries to understand now that throwing tantrums won't help him get what he wants - starts to do breathing exercises or finishes the task then rests. - tries to share his things and food	- starts to communicate with classmates by telling them to focus and hurry up instead of initiating play - starts to encourage his classmate to go inside the room every morning without asking him to do so. - somehow seems to understand now that not focusing on his task upsets his teacher - starts to share his supplies and food

After the intervention, Participant 2 started to become more mindful of his actions because he started to do breathing exercises instead of throwing tantrums, engage in reciprocal exchanges and share his food and things. He also had more knowledge on understanding facial expressions and body language since he tried to have positive interaction with his classmates by

starting to focus on his own work and having minimal manifestation of throwing tantrums. He also started to respond appropriately and encourage classmate to focus on task and get inside the room.

Video Modeling - Role Playing Sequence

Case 3 Profile

Participant 3 (P3) is a nine-year-old boy and an only child. He was diagnosed with autism at the age of five. He belongs in the afternoon self-contained class of Teacher B with five other students. His video was about asking for permission and his role-playing task was about not interrupting people who are having a conversation.

Figure 9 shows the results of P3's Autism Social Skills Profile.

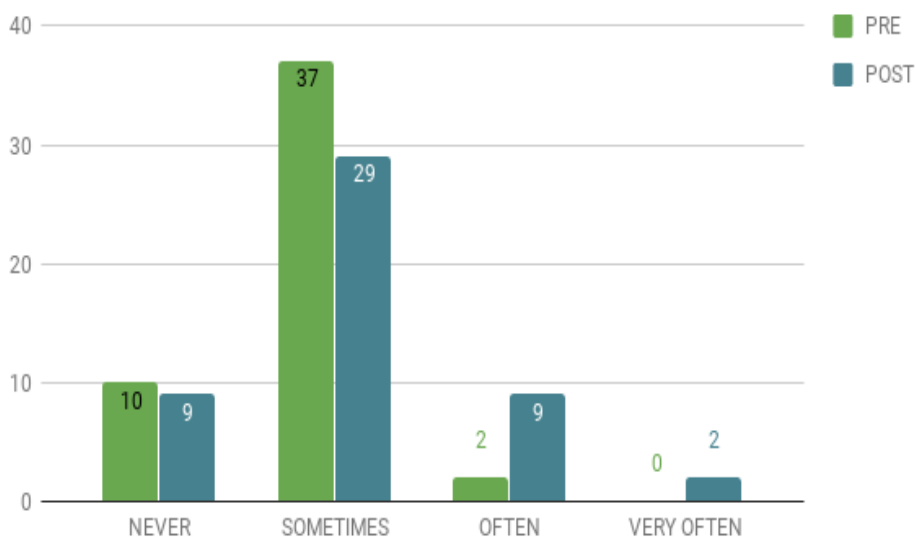


Figure 9: Distribution of Pretest and Posttest Scores by the Teacher

Figure 9 shows the results of ASSP before and after video modeling-role playing intervention answered by the teacher. It illustrates that before the intervention, 10 out of 49 skill

areas were never or almost never exhibited but it became 9 skill areas after the intervention. 37 out of 49 skills areas were sometimes or occasionally exhibited before the intervention and it decreased to 29 after the intervention. Then, two out of 49 skill areas were often or typically exhibited and it increased to nine after the intervention. After the intervention, there were two skill areas that he very often or always exhibited. It shows that there was an increase in the social functioning of the participant.

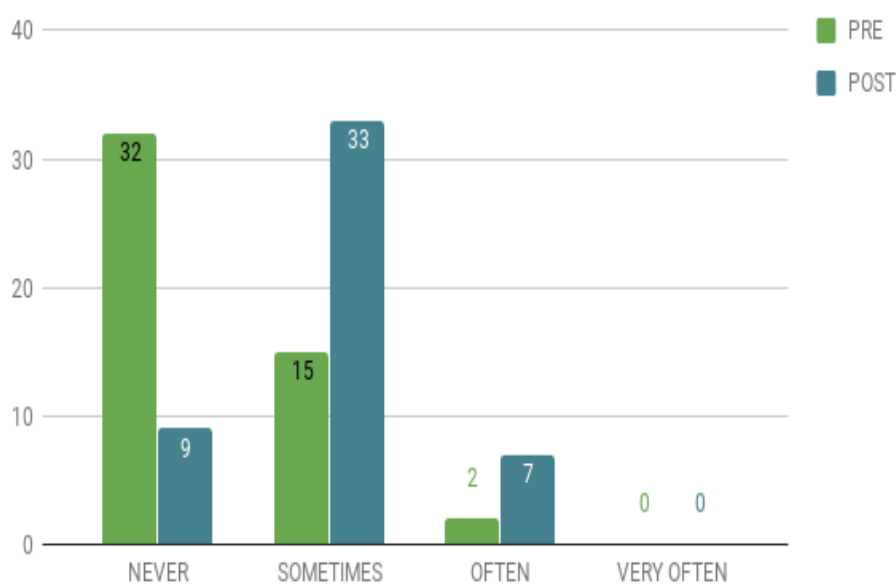


Figure 10: Distribution of Pretest and Posttest Scores by the Parent

Figure 10 shows the results of ASSP before and after video modeling-role playing intervention answered by the parent. It illustrates that before the intervention, he never or almost never exhibited 32 out of 49 skill areas and it decreased to seven after the intervention. There were 15 out of 49 skills areas that he sometimes or occasionally exhibits and it became 33 after the intervention. Then, there are two out of 49 skill areas that he often or typically exhibits and it increased to seven out of 49 skill areas after the intervention. There were no skill areas that he

very often or always exhibits before and after the intervention. It shows that there was an increase in the social functioning of the participant.

Table 12

Paired-Sample T-Test of ASSP answered by teacher and parent of Participant 3

		Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
TCHR	PRE	1.8367	49	0.47201	0.06743	-2.131	48	0.038
	POST	2.0816		0.73134				
PRNT	PRE	1.3878	49	0.57068	0.08153	-4.753	48	0
	POST	1.9592		0.57588				

Table 12 shows the results of the paired-sample t-test done to compare the ASSP of Participant 3 before and after implementing video modeling - role playing intervention. There was a significant difference in the scores IV level 1 ($M = 1.83$, $SD = .47$) and IV level 2 ($M = 2.08$, $SD = .73$) conditions; $t(48) = -2.13$, $p = .038$. Responses of parent revealed that there was a significant difference in the scores IV level 1 ($M = 1.38$, $SD = .57$) and IV level 2 ($M = 1.95$, $SD = .57$) conditions; $t(48) = -4.75$, $p = .000$. It shows that there was an increase in the social functioning of the participant.

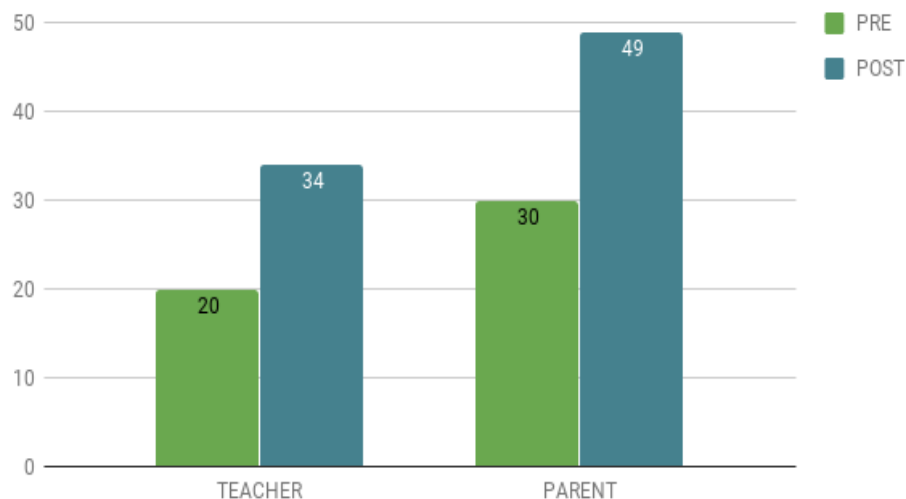


Figure 11: Total Pretest and Posttest Scores of Empathy Spectrum Quotient

Figure 11 illustrates the total scores of Participant C for empathy spectrum quotient. Before the intervention, his teacher gave him a score of 20. It increased to 34 after the intervention. His parent gave him 30 before the intervention. It dramatically increased to 49 after the intervention. It reveals that the level of empathy of the participant improved after the intervention.

Table 13

Paired-Sample T-Test of ESQ Answered by Teacher and Parent of Participant 3

		Mean	N	Std. Deviation	Std. Error Mean	t	Df	Sig. (2- tailed)
TCHR	PRE	0.3636	55	0.52223	0.07042	-3.934	54	0
	POST	0.6182		0.59289	0.07994			
PRNT	PRE	0.5455		0.68902	0.09291	-5.339		0
	POST	0.8909		0.76189	0.10273			

Table 13 shows the results of the paired-sample t-test done to compare the ESQ of Participant 3 before and after implementing video modeling - role playing intervention. There was a significant difference in the scores IV level 1 ($M = .36$, $SD = .52$) and IV level 2 ($M = .61$, $SD = .59$) conditions; $t(54) = -3.93$, $p < .001$ according to the answer of the teacher. There was a significant difference in the scores IV level 1 ($M = .54$, $SD = .68$) and IV level 2 ($M = .89$, $SD = .76$) conditions; $t(54) = -5.33$, $p < .001$ according to the answer of the parent. It reveals that the level of empathy of the participant improved after the intervention.

As regards qualitative aspect, Table 14 and 15 shows the summary of Participant 3's behavior before and after the intervention based on teacher's interview and researcher's observation

Table 14

Summary of Participant 3's behavior before the intervention based on teacher's interview and researcher's observation

Expressing emotions	
Teacher	Researcher
• has a poker face • expresses emotions nonverbally • has minimal eye contact • shouts out of the blue • kicks his chair when upset	• does not have appropriate facial expression • shouts when someone is crying or being reprimanded • smiles even when reprimanded • looks at the face and does not nod or shake his head when asked a yes or no question
Reacting to someone else's feelings	
Teacher	Researcher
• seems to be in a world of his own; gazes at space • shouts even more when told not to shout • doesn't react appropriately when somebody is crying or upset	• stares at nothingness even if the teacher is looking straight at him • has the tendency to say words not related to the lesson even if the teacher signaled him to keep quiet or when the teacher was already standing in front of him.
Showing empathy	
Teacher	Researcher
• has limited social interaction • has difficulty recognize facial expression and body language • reacts inappropriately to situations • does not show any interest to his peers	• does not recognize emotions of other people • doesn't adjust his behavior based on peers' action or facial expressions • ignores classmates and does his own thing • doesn't show any concern to his peers' feelings when they are crying or being reprimanded

Table 14 shows the summary of the teacher's interview and researcher's observation before the intervention. It reveals that Participant seems to have a little understanding of facial expressions and body language because he had difficulty recognizing if the teacher was upset or when the classmates were happy. He lacks awareness of facial expression and body language of

others, so he did not respond appropriately to certain situations such as when someone was being reprimanded and when someone needed help. He also doesn't express his emotions verbally and usually has poker face. He also seems like he has a world of his own as if he has no interest in interacting with others. It seems like he is socially indifferent.

Table 15

Summary of Participant 3's behavior after the intervention based on teacher's interview and researcher's observation

Expressing emotions	
Teacher	Researcher
• has varied facial expressions • tries to smile more often when being talked to • lessened tendency to move his chair when reprimanded • starts to look in the eye when interacting	• has varied facial expressions • starts to stand up and walk instead of moving his chair aggressively when he's upset • starts to nod or shake his head instead of just staring at his teacher when asked a yes or no question
Reacting to someone else's feelings	
Teacher	Researcher
• starts to interact with his classmates by joining games • tries to stay quiet when someone is reprimanded instead of shouting • starts to demonstrate more interest and awareness of his surroundings by joining classmates who are playing instead of just sitting down in his chair	• lessened tendency to shout when he saw his teacher looking at him or when somebody is standing up • starts to wait quietly on his seat and more focused on his work when he sees his teacher looking at him • tries to have an interaction with classmates by joining them
Showing empathy	
Teacher	Researcher
• starts to share his school supplies • starts to wait for his turn to have his notebook checked • tries to help classmates by offering food	• starts to share his food and school supplies • tries to wait patiently for his classmate to finish using his crayons instead of just grabbing it

Table 15 shows the summary of the teacher's interview and researcher's observation after the intervention. Participant 3's facial expressions vary now and interacts more with his classmates. He starts to respond appropriately to certain situations such as sharing and helping someone in need. He also started interacting with his classmates by joining them when it's playtime instead of ignoring them. There was also lessened tendency of shouting and being impatient. He starts to refrain from shouting and wait for his turn

Case 4 Profile

Participant 4 (P4) is a seven-year-old boy and an only child. He was diagnosed at the age of four. He belongs in a self-contained class with five other students in the afternoon. His video was about helping a friend who slipped on the floor and his role-playing task was respecting personal space.

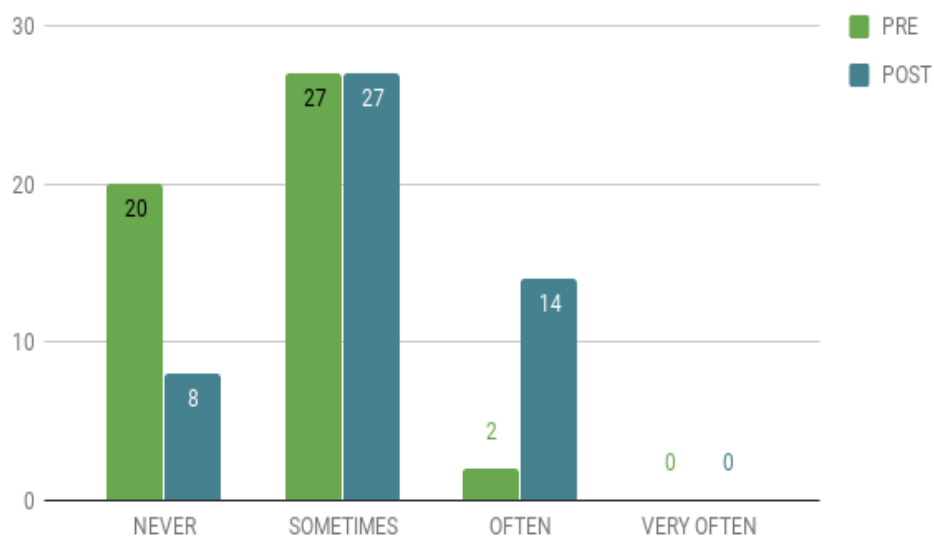


Figure 12: Distribution of Pretest - Posttest Scores by the Teacher

Figure 12 shows the results of ASSP before and after video modeling-role playing simulation intervention answered by the teacher. It illustrates that before the intervention, 20 out

of 49 skill areas he never or almost never exhibits those skills or behavior but it became 8 out of 49 skill areas after the intervention. 27 out of 49 skills areas, he sometimes or occasionally exhibits these skills or behavior before and after the intervention. Then, 2 out of 49 skill areas he often or typically exhibits and it increased to 14 out of 45 skill areas after the intervention. There were no skill areas that he very often or always exhibits before and after the intervention. It shows that the social functioning of the participant somehow improved.

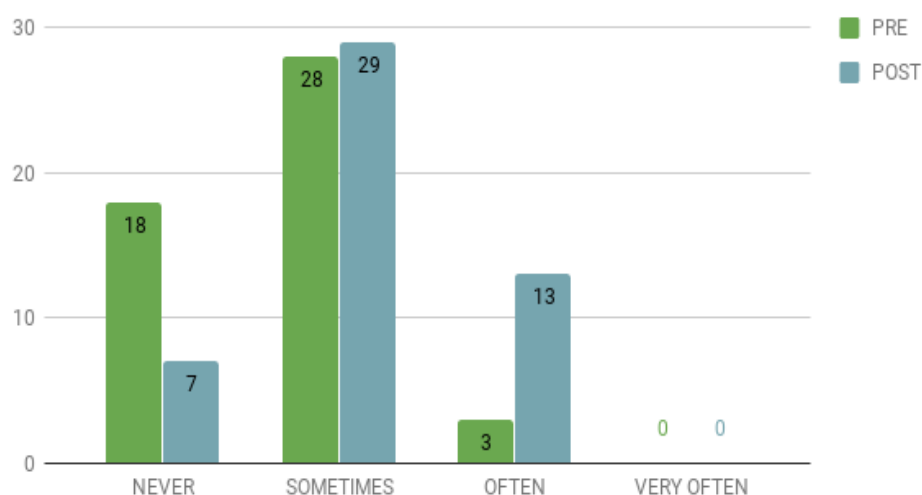


Figure 13: Distribution of Pretest - Posttest Scores by the Parent

Figure 13 shows the results of ASSP before and after video modeling-role playing simulation intervention answered by the parent. It illustrates that before the intervention, he never or almost never exhibits 18 out of 49 skill areas but it became 7 after the intervention. There are 28 out of 49 skills areas that he sometimes or occasionally exhibits and it became 29 after the intervention. Then, there are 3 out of 49 skill areas that he often or typically exhibits and it increased to 13 out of 49 skill areas after the intervention. There was no skill area that he very often or always exhibits before and after the intervention. It shows that the social functioning of the participant somehow improved.

Table 16

Paired-Sample T-Test of ASSP answered by teacher and parent of Participant 4								
		Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
TCHR	PRE	1.6327	49	0.5662	0.08089	-4.47	48	0
	POST	2.1224		0.6656				
PRNT	PRE	1.6939	49	0.58467	0.08352	-3.928	48	0
	POST	2.1224		0.63353				

Table 16 shows the results of the paired-sample t-test done to compare the ESQ of Participant 4 before and after implementing video modeling - role playing intervention. There was a significant difference in the scores IV level 1 ($M = 1.63$, $SD = .56$) and IV level 2 ($M = 2.12$, $SD = .66$) conditions; $t(48) = -4.47$, $p < .001$. Moreover, there was a significant difference in the scores IV level 1 ($M = 1.69$, $SD = .58$) and IV level 2 ($M = 2.12$, $SD = .63$) conditions; $t(48) = -3.92$, $p < .001$ according to the responses of the parent. It shows that the social functioning of the participant somehow improved.

Additionally, Figure 14 tells the result of Empathy Spectrum Quotient of P4.

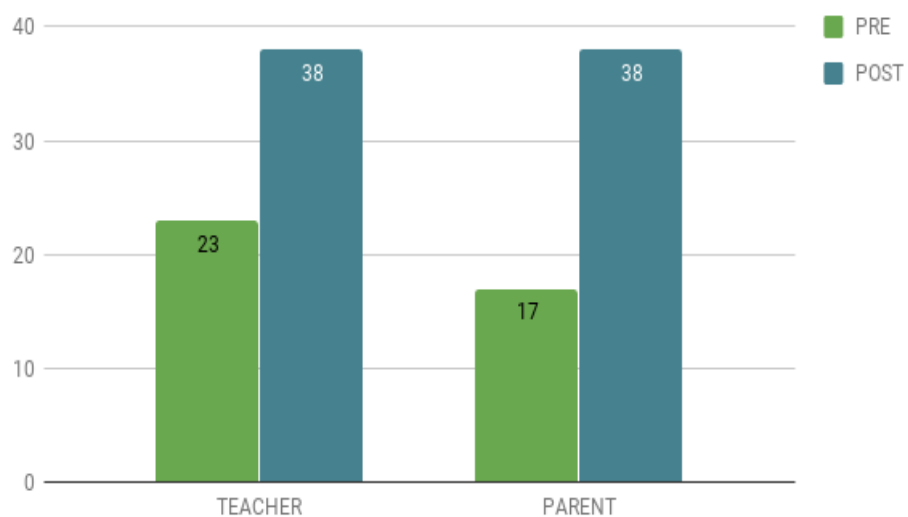


Figure 14: Total Pretest and Posttest Scores of Empathy Spectrum Quotient

Figure 14 illustrates the total scores of Participant D for empathy spectrum quotient. Before the intervention, his teacher gave him a score of 23. It increased to 38 after the intervention. His parent gave him 17 before the intervention. It dramatically increased to 38 after the intervention. This reveals that the level of empathy of the participant improved.

Table 17

Paired-Sample T-Test of ESQ answered by teacher and parent of Participant 4

		Mean	N	Std. Deviation	Std. Error Mean	t	Df	Sig. (2-tailed)
TCHR	PRE	0.4182	55	0.49781	0.06712	-3.849	54	0
	POST	0.6909		0.53998	0.07281			
PRNT	PRE	0.3091	55	0.50452	0.06803	-4.341	54	0
	POST	0.6909		0.6047	0.08154			

Table 17 shows the results of the paired-sample t-test done to compare the ESQ of Participant 4 before and after implementing video modeling - role playing intervention. There was a significant difference in the scores IV level 1 ($M = .41$, $SD = .49$) and IV level 2 ($M = .69$, $SD = .53$) conditions; $t(54) = -3.84$, $p < .001$ according to the answer of the teacher. There was a significant difference in the scores IV level 1 ($M = .30$, $SD = .50$) and IV level 2 ($M = .69$, $SD = .60$) conditions; $t(54) = -4.34$, $p < .001$ according to the answer of the parent. This reveals that the level of empathy of the participant improved.

Table 18 and 19 shows the summary of Participant 4's behavior before and after the intervention based on teacher's interview and researcher's observation

Table 18

Summary of Participant 4's behavior before the intervention based on teacher's interview and researcher's observation

Expressing emotions	
Teacher	Researcher
• has a poker face • is not able to express his emotions appropriately all the time • has minimal eye contact • pushes random strangers	• has minimal eye contact • has poker face most of the time; doesn't show if he's happy or upset • doesn't nod nor shake his head when asked with a yes or no question
Reacting to someone else's feelings	
Teacher	Researcher
• seems to be in a world of his own; gazes at space • plays even more when told not to play • doesn't react appropriately when somebody is crying or upset	• needs constant reminder in complying with the rules inside the classroom • doesn't wait for his turn to play with a toy; annoys classmates by touching the toy they're playing with • seems to have a world of his own
Showing empathy	
Teacher	Researcher
• has difficulty recognizing facial expression and body language • does not have varied facial expressions • has limited social interaction • resorts to physical aggression • has little awareness of the emotions	• does not realize how something he says or does can hurt the feelings of another like not following schedule, not writing his name properly, touching things without permission, laughing when someone is reprimanded • doesn't understand why his classmates would stop playing when they accidentally hurt themselves or when told to go back to their seats

Table 18 shows the summary of the teacher's interview and researcher's observation before the intervention. It reveals that Participant 4 seemed to have a little understanding of facial expressions and body language because he had difficulty recognizing if the teacher was upset or when the classmates were happy. He lacks awareness of facial expression and body language of others, so he did not respond appropriately to certain situations such as when someone was being reprimanded and when someone needed help. He does not wait for his turn

or share the toys in the room. He also has the tendency to push strangers out of the blue. It seemed that he did not understand the concept of how his actions affected the feeling of others.

Table 19

Summary of Participant 4's behavior after the intervention based on teacher's interview and researcher's observation

Expressing emotions	
Teacher	Researcher
• has varied facial expressions • starts to smile more when he plays with his classmates • starts to look in the eye • lessened tendency to push strangers out of the blue	• facial expressions vary now • starts to smile when talked to and when he tells a story or when being read to • starts to look at the classmate intently then smile when the classmate looks at him to initiate play
Reacting to someone else's feelings	
Teacher	Researcher
• starts to interact with his classmates by sharing a book that he is looking at or a to he is playing with • lessened tendency of shouting, when someone is reprimanded • tries to demonstrate more interest and awareness of his surroundings by initiating play	• starts to check first the face of his classmates before initiating play • starts to allow somebody to join him play even if the classmate is just looking at him • starts to understand that when teacher stops talking, he must do his task
Showing empathy	
Teacher	Researcher
• starts to encourage other people to focus on their food instead of staring at their classmate • tries to help his classmates picking up what fell on the floor • starts to ask if a classmate involved in a minor accident is okay	• starts to understand when teacher is about to get mad because he rushes to his seat and holds his pencil when he sees his teacher looking at him • lessened tendency to laugh when somebody is being reprimanded • seems to understand why classmates get upset when he touches their things

Table 19 shows the summary of the teacher's interview and researcher's observation after the intervention. Participant 4 starts to respond appropriately to certain situations because he

could somehow understand and recognize facial expressions and body language of his teacher and peers. His facial expressions vary now and starts to have an interaction with his classmates. He starts to share his book or toy and respect personal space. His tendency to shout or laugh when someone is being reprimanded lessened as well. He seems to understand reasons why his teacher and classmates get upset when he is not focusing or touching somebody else's pencil without any permission.

3.2 Discussion

This section explains the implications of the study and answers the research questions for each case of participants in the study

The implications of the research findings of the investigation are applicable to both the learners with ASD and their teachers. The use of videos and role-playing guide as a tool in teaching a skill is a promising practice. Children who can focus on a video for several minutes without showing challenging behavior may respond well to video modeling interventions. Video modeling has been used to take full advantage of the strengths of learners with ASD as visual learners by gaining a child's attention and cutting down stimulus overselectivity (Charlop-Christy & Daneshvar, 2003); maximizes on the effectiveness of observational learning (Delano, 2007); and integrates the imitation skills of learners with ASD (Charlop-Christy & Daneshvar, 2003) since it also can be used for repetitive learning which employs the learning strengths of learners with ASD (Smith – Myles & Simpson, 2011).

Howe, Pit-ten Cate, Brown and Hadwin (2008) found that watching of video clips of learners in emotional situations helped the students to have higher level of emotional

understanding and empathic responding was more likely to display relevant facial emotions. Håkansson (2003) found that empathy is the only phenomenon that allows people to share and understand the consciousness of others and respond to it with an appropriate emotion (Baron-Cohen & Wheelwright, 2004). Eisenberg and Fabes (1990) proved that learners who are more cooperative and have socially competent behavior have higher level of empathy. Furthermore, empathy helps people to entertain how others think and feel (Baron-Cohen & Wheelwright, 2004). The intervention provided a framework for employing a social skills approach which incorporates video modeling and role-playing. The structure and detail provided for the implementation of this intervention may help teachers in facilitating development of empathy among learners with ASD. It also provides a basis implementing social skills instruction that can be further developed to develop empathy of learners with ASD.

Moreover, social behavior of participants improves because role playing provides opportunities to practice the target social skills; it also permits participants to receive both positive and corrective feedback (Leaf et al, 2012); it encourages people to engage in an interaction (van der Meulen Rodgers, 1996); to determine strengths, difficulties, and outcome of conduct or attitude (Galbraith & Zelenak, 1991); to lessen disruptive behavior (Lohrman & Talerico, 2004); to increase positive behavior (Dixon, Bergstrom, Smith & Tarbox, 2010) and to teach communication skills (Jackson & Black, 2011).

The use of video modeling and role-playing could result in fewer behavior disruptions in classroom, more positive interactions and more efficient learning. According to Reichow and Volkmar (2010), the more the learner sees the appropriate behavior, the more likely it is for him/her to acquire/generalize a skill. Also, video modeling often assists in faster skill acquisition,

maintenance, and generalization across settings, people, and materials. Corbett and Abdullah (2005) noted that video modeling works with learners with ASD because of their preference with visually-cued instructions since they respond more readily with visual information. This is significant to notice because generalization is often not achieved by children with autism using traditional prompting methods and in vivo instruction.

Furthermore, the technology used in implementing the intervention is easily accessible and cost-efficient since it can be done with a use of a gadget that can play videos and show pictures. It can be used in a variety of settings such as in school, at home and/or clinical setting. Videos can be played using smartphones, tablets and laptops. The above-mentioned gadgets are easy to use and the implementer just need to have a basic understanding of video recording and playing. Video modeling is practical because of ease of use, consistency, and availability of technology.

Research Question 1: How was the level of empathy of the participants compared before and after the use of the combined intervention?

Case 1

Participant 1 sometimes resorted to physical aggression and laughing at his classmate instead of showing concern or offering comfort. He did not understand why his classmates or teacher got upset while inside the classroom. He did not recognize body language of others all the time. His facial expressions did not vary because he was frowning all the time. *“Pasan nya ang daigdig palagi. Hindi nga poker face eh, simangot talaga.”*, his teacher said. He used to react when his teacher was talking to his classmate, which upset the classmate and teacher.

“Laging may sinasabi kahit hindi naman sya ang kinakausap. Para bang walang syang nagagawang mali. Pagsabihan mo ng isang beses, uulitin lang ulit. Hindi nakakatulong.”, his teacher said.

Through the intervention, behavior of Participant 1 improved and reached egocentric empathy, second stage of empathy development. He used to not wait for his turn when playing, which resulted to his classmates not wanting to play with him. According to his teacher, he was gentler with his classmates. He also stopped resorting to physical aggression when he was upset. *“Alam na nya kahit na hindi magandang ugali ang pananakit. Nanunulak pa rin minsan pag gusto talaga nyang kunin ang laruan pero nabawasan naman na.”* his teacher said. He also somehow showed concern when someone was upset. He now started to experience positive peer interaction because he could offer comfort by not saying anything when his teacher was reprimanding any of his classmates and by sharing. *“Hindi na sya si Mr. Simangot. Tumutulong na sya sa mga kaklase nya. Tumatahimik na sya kapag pinapaglitan ko yung kaklase nya pero minsan nagrereact pa rin lalo na kung yung ayaw nyang kaklase yung napagsasabihan.”* his teacher said. He started to wait quietly and focused on his task. He also started to share his food when someone did not have any, or his school supplies when his classmate forgot theirs at home.

Case 2

Participant 2 had little awareness of the emotions of people around him. He did not show concern when someone was crying nor show happiness when someone was happy. He knew how to express basic emotions such as happiness, fear, and sadness, but he did not understand the emotions of others. His teacher said *“Hindi nya naiintindihan bakit naiinis o masaya akung classmate nya. Nakatingin lang sya kapag may umiiyak. Minsan naman, umiiyak na yung*

classmate nya, gusto nya pang ayain maglaro.” He had limited social interaction which resulted to not having some positive interactions with his peers all the time. He also had the tendency to throw tantrums. *“Madali syang sumpungin. Pag sinumpong na yan, iiyak na sya tapos hindi na nya gagawin yung ipinapagawa ko sa kanya. Mahirap syang aluin.”*, his teacher said.

After the intervention, there was an improvement in social relationship of Participant 2 and reached second stage, egocentric empathy. His teacher noticed that he was more mindful of his actions. *“Hindi na sya ganun kadalas makialam kapag may kinakausap. Nakikinig sya o kaya naman tuloy pa rin sa paggawa ng task. Nakukuha na rin sya sa tingin. Hindi na kailangang paulit-ulit syang sabihan tulad noon.”*, his teacher said. His results in ASSP showed that his social skill such as recognizing facial expressions and nonverbal cues, maintaining appropriate distance when interacting with peers, helping others, and engaging to positive peer interactions improved. *“Natutuwa ako na naalala nya yung breathing exercises na tinuro sa kanya kapag malapit na syang umiyak. Nakatulong yun kasi hindi na nadidisrupt yug klase.”*, his teacher said. His score in ESQ improved as well. His understanding why other people got upset because of things and relationship with his peers improved. It was noticeable that he showed concern to his peers.

Case 3

Participant 3 was always minding his own business. It seemed like he had no interest to his peers. He did not play with them. *“Hindi nya pinapansin mga classmates nya kahit na sobrang lakas na nung tawa nila. Kapag may umiiyak, deadma lang din sya. Minsan naman, tatawanan nya yung umiiyak.”* his teacher said. He had difficulty understanding people’s facial expressions and body language. Expressing his own emotions was not very evident as well. He

still smiled even if the teacher was reprimanding him for not focusing or shouting. *“Naka poker face lang yan palagi. Hindi nya naipapakita yung tamang emosyon. Minsan nga kahit pinagsasabihan ko sya, ningingitian pa ako. Tapos kapag nainis sya sa akin, sisigaw sya bigla o kaya sisipain yung upuan nya.”* his teacher said. He also used to interrupt his teacher when he wanted her to check his notebook and did not say ‘excuse me.’

Through video modeling - role playing intervention, there was an improvement that occurred in the social relationship of Participant 3, and he reached the second stage, egocentric empathy. *“Natutuwa ako na nag-ooffer na sya ng pagkain nya kahit na hindi ko naman sinasabi. Nakakaramdam na sya kahit paano.”* his teacher said. His social performance such as recognizing facial expression and body language, helping others, and responding to questions directed at him started to improve. He tries to interact with his classmates where he lent them his things and he borrowed from them if he needed to. His ESQ score significantly improved after the intervention. He showed improvement in his relationship with peers. *“Mas nakakausap ko na sya ngayon kasi sumasagot na sya. Hindi na sya yung nakatitig lang sa akin. Napansin ko rin na nagsisimula na syang makilaro sa mga kaklase nya. Minsan mag-isa pa rin sya habang kumakain, minsan naman nakikisali na”* his teacher said.

Case 4

Participant 4 did not mind his classmates before the intervention. When being talked to, he did not maintain eye contact and looked somewhere else. His teacher said, *“Kahit ako ang kumakausap sa kanya, hindi sya tumitingin. Kapag nararamdaman nyang nakatingin sa kanya katabi nya, iiwas yan ng tingin o kaya titingin sa baba o sa hawak nyang lapis. Lagi kong sinasabihan na tumingin.”* His facial expression did not vary which made it difficult to tell how

he felt. He showed lack of understanding, or did not understand the concept of how his actions affected the feeling of others because he would hit random people out of the blue on his way home, then would begin to laugh. *“Nanunulak o nanghahampas yan ng mukha o likod kahit na walang ginagawa sa kanya. Lagi kong sinasabi na hindi yun maganda pero parang tuwang tuwa sya pag nakikita nyang nagugulat yung nasasaktan nya.”* his teacher said.

After the video modeling - role playing intervention, Participant 4 reached the second stage, egocentric empathy. He started to offer comfort to his classmates. His score in ASSP showed that there was an improvement in maintaining interaction among peers and other people, engaging with peers, and having inappropriate behavior. He did not laugh at his classmates anymore; instead, he either stayed quiet or helped them with their situation. *“Nagsisimula na syang tumulong sa classmates nya. Hindi na sya ganun nagrereact kapag kinakausap ko classmate nya. May isang beses, tinulungan nya yung classmate nya na pulutin yung crayons sa sahig. Nagulat ako kasi madalas deadma sya.”* his teacher said. His teacher noticed that there was a significant improvement in how he interacted with his peers. His emotions varied now which made it easier for his classmates to tell if he was happy or not with what they were doing. It was observed that he started initiating interaction with his classmates. He would invite them to play and read with him. *“Nagulat ako na pumayag sya na may kasama syang magtingin sa mga libro. Madalas kasi gusto nya na sya lang ang titingin sa pictures.”*, his teacher said.

Research Question 2: What progress is evident in the development of empathy among learners with ASD?

Case 1

Participant 1 started to wait for his turn during playtime which made his classmates start to want to play with him more. It did not upset him anymore when he must wait for his turn. His teacher noticed that he started to allow others to join him when he plays and waits for his turn to play with a certain toy. He also has lessened the tendency of pushing classmates when he is upset. His facial expressions varied instead of just having a frowning face all the time. His teacher said *“Hindi na sya laging nakasimangot ngayon. Nagugulat ako na ngumingiti na sya.”* He also started to look at the faces of his classmates and somehow understood why one of his classmates cried. His giving of unnecessary remarks when someone is reprimanded is lessened. He also started to willingly share his food and his school supplies. The teacher also noted that *“Nangunguna na syang mag-alok ng pagkain kapag nagtatanong ako kung sinong may extra. Nakakatuwa.”*

Case 2

Participant 2 started to have a more positive peer interaction since his reaction starts to become appropriate to the situation. He also started to understand what other people's facial expressions and body language meant because he did not need to be reminded always. One look from the teacher and he knew what he needed to do. His teacher said that *“Ngayon, isang tingin ko lang alam na nya na kailangan nyang bumalik sa ginawa nya. Kahit papaano, naiintindihan na nya yung titig ko.”* He did not interrupt his classmates anymore. His tendency to ignore or laugh at classmates also lessened. He used to throw tantrums when he is upset but it is now

lessened. His tendency to cry or shout when he's upset lessened and started to resort to doing breathing exercises. *"Nagugulat ako na bigla syang tatahimik tapos hihinga ng malalim. Natatandaan nya yung tinuro mo."* according to his teacher.

Case 3

Participant 3 started to engage and interact with his peers. The teacher noticed that he started to engage with his classmates. His teacher said *"Loner lang yan dati. May sariling mundo. Ngayon nakikisali na. Dagdag ingay pero ang mahalaga nakikilaro na sya. Nakikisaya na sa mga kaklase."* He started to look at what they were currently doing then tries to join them. His teacher noticed that he began approaching his classmate and started interacting with them by offering his food or school materials when one of his classmates had none or left his/hers at home. He tries to understand why some things upset people such as being reprimanded or when their guardians leave them in school. He also started to show concern to his classmates who were either crying or did not have the needed materials. His emotions started to vary now as when he used to have poker face most of the time before. *"Kahit pinapagalitan ko yan, ningingitian lang ako. Kung hindi man, dadabugan pag wala sa mood. Ngayon, kahit papaano ay nagbabagobago na. Nagmumukhang malungkot na kapag napagsasabihan. Yumuyuko na ang ulo imbes na magdabog"* his teacher said.

Case 4

Participant 4 started to recognize facial expression and body language since he started to have a more positive relationship with his peers because he somehow knew how to react appropriately in situations like when someone was being reprimanded, when someone was eating, or when someone dropped something. His emotions started to vary where his teacher

noticed that he starts to laugh when his classmates are laughing as well. His teacher said “Noon, *blank stare lang mapapala mo sa kanya kahit na binabati mo sya. Parang hindi nya naiintindihan na nakangiti ka kasi masaya ka. Ngayon, nagsisimula na rin ngumiti yan pag nakangiti ako o yung kaklase nya. Nagsisimula na syang kumopya ng mukha.*” His tendency to hit or somebody and to stand too close a classmate also lessened. His teacher added “*Masaya ako na hindi na sya nananakit. Ang hirap rin kasing magpaliwanag sa mga taong hindi nakakaintindi ng sitwasyon nya.*”

Chapter 4

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

4.1 Summary of the study

Development of empathy is a gradual process. There is a need to develop interventions that target development of empathy given that learners with ASD are known to want in social interaction and communication skills. The 10-week intervention focused on the development of empathy in which combination of video modeling and role playing was utilized. Different studies have reported substantial changes among learners with ASD who have received interventions such as video modeling and role-playing. Learning through video modeling has been an effective and useful treatment approach for individuals with autism since it motivates and reinforces children to determine and imitate the target behavior. Role playing helps students to identify what they know and what they still need to know.

The goal of the study was to develop an intervention program where video modeling and role-playing was combined towards the development of empathy among learners with ASD. Recognizing how other feel, communicating own emotions, and responding to emotion of others appropriately resulted to having positive relationship among their peers. There were four participants ages 6 to 13 from Malvar Central School. They were grouped into two. The first group followed the role-playing - video modeling sequence and the second group followed the video modeling - role playing sequence. Baseline data and post intervention data were gathered for two weeks each and the intervention lasted for six weeks, four times a week, 30 minutes per session. Autism Social Skills Profile and Empathy Spectrum Quotient were answered by the teachers and parents of the participants before and after the intervention. Teacher's interview and

researcher's observation were also gathered to support the data.

4.2 Summary of results

Based on the analysis and interpretation of data, following is the summary of the results.

By comparing the pretest and posttest scores in ASSP and ESQ, teacher's interview and researcher's observation before and after the intervention of each participant, the extent of the development of empathy that occurred in each participant as well as the impact of the intervention to their classroom behavior was observed. There was a positive impact on the peers of each participant since there was an improvement in classroom behavior.

1. Prior to the intervention, Participants 1 and 2 were not minding their own business where they gave unnecessary comments or laughed when someone was being reprimanded. On the other hand, Participants 3 and 4 seemed to have a world of their own and had limited to no interaction with their classmates. Also, Participant 1 and 4 used to resort to hitting and pushing peers when upset. Participant 2 and 3 would throw tantrums. All the participants seemed to have a little understanding of facial expressions and body language.
2. All the participants lacked awareness of nonverbal cues of others, so they did not respond appropriately to certain situations such as when someone was being reprimanded and when someone needed help. It seemed that they did not understand the concept of how their actions affected the feeling of others.

3. All the participants were able to react appropriately to situations as they were more aware of the emotions of their peers since they could now recognize facial expressions and body language after the combined intervention.
4. Their responses did not trigger any negative behavior of their classmates and were not aggressive. They were more willing to share what they had, waited for their turn to play, and initiated interaction. Also, they started to manage and communicate their emotions thereby improving their relationships with peers and with the social environment.

4.3 Limitations of the study

The study had some deficiencies in investigating the effect of combining video modeling and role-playing in the development of empathy among learners with ASD.

1. The study is primarily concerned with the concurrent and immediate effects of combining video modeling and role-playing on the development of empathy among learners with ASD.
2. The study only used a small number of participants. The participants were four elementary students who exhibited behaviors of ASD. The school was chosen because it is the pioneer SPED center in the third district of Batangas. There was no controlled group in the study.
3. The study only used video animations, illustrations and role-playing guide and combined the two interventions. The videos, while validated by a panel of experts, resulted to several limitations because it cartoons were used instead of real persons.
4. The researcher focused on development of empathy since the researcher believes that it

should be given more concern among learners with ASD. It is assumed that it would improve the daily functioning of life in terms of child's social interaction with people.

5. The schedule of classes had been arranged at the beginning of the school year according to the DepEd curriculum. The researcher was not able to control the activities that happened before the intervention.

4.4 Conclusion

Considering the findings of the study, the following conclusions are drawn:

1. **Combining video modeling and role-playing helped in the development of empathy among learners with autism spectrum disorders.**

Each participant displayed an improvement considered to be substantial in showing empathy such as recognizing facial expressions and body language, and offering comfort. All the participants also gained more positive experience and the classroom atmosphere improved because there was more engagement that occurred. Furthermore, they could determine what to say and what to do when interacting with other people.

2. **All the participants displayed egocentric empathy after the intervention.**

All the participants were able to reach the second level of Hoffman's stages of empathy development, known as egocentric empathy, where they offered comfort to their peers the way they knew what would comfort them such as taking turns, sharing food, and staying quiet when being talked to by the teacher.

3. **Using visual aids such as videos and illustrations contributed to the development of empathy among learners with autism spectrum disorders.**

The use of visual aids, concrete rule-based presentations of social behaviors, and demonstration of examples of appropriate and inappropriate social behaviors for comparison are observed to be useful in teaching learners with ASD (Charlop-Christy & Daneshvar, 2002) since learners with ASD can process visual information better than verbal information (Quill, 2007). Strategies video modeling and role-playing, that belong to multimedia category, could be an effective medium in assisting students to develop empathy since it could also bring about various positive changes when introduced in the classroom. Both strategies proved that they helped learners with ASD to practice positive social behavior, responses, and skills which would help them in real life social situations.

4.5 Recommendations

Based on the findings and conclusions of the study, the researcher presents the following recommendations:

1. **Assessment.** Ongoing measurement of the combined intervention must be documented to determine more benefits for the child. Individualized attention should be given to the child on a daily basis for regular monitoring of progress.
2. **Sampling size.** A study involving more participants has to be done to determine the effects of the intervention in a classroom setting. It would also help to determine if individualized attention is possible even for a bigger number of participants, or if the size would have any effect to the result of the intervention.
3. **Policy.** Use Filipino as a medium of instruction in future studies to determine if the language affects the result of the study

4. **Participants.** Use the combined intervention to other conditions such as learners with intellectual disability, Down Syndrome, etc.
5. **Research Design.** Include a control group design to determine the effects of the intervention to the control group.
6. **Tools and Instruments.** Use other multimedia materials aside from videos and pictures in teaching empathy.

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Appendix A

Letter to the Principal



Republic of the Philippines
 PHILIPPINE NORMAL UNIVERSITY
The National Center for Teacher Education
 College of Graduate Studies and Teacher Education Research
 SPECIAL EDUCATION SPECIALIZATION

Dear _____,

I am a student at Philippine Normal University-Manila completing my Master of Arts in Special Education- Intellectual Disabilities. I am writing to request your permission to perform a research study in your school. The title of my research is “Towards the Development of Empathy among Children with Autism”. The objective of the study is to determine the effects of combining video modeling and role playing in the development of empathy among children with autism.

If approval is granted, the gathering of data should take no longer than fifteen weeks and is to be done on your convenience. The study would involve observation of the participants in the natural setting, implementation of video modeling and role-playing intervention to the participants and completion of questionnaires and interviews of parents and teachers of the participants.

The intervention includes watching videos that will show empathy in different scenarios and then copying the behavior of the model in the video. Role playing task includes taking turns, recognizing personal space, not interrupting a conversation, getting frustrated, and giving comments. Autism Social Skills Profile and Empathy Spectrum Quotient are the questionnaires that will be answered by the parents and teachers of the participants.

The results of this study will remain unquestionably private and to be used on educational purposes only.

If you need any further information, please contact me at 09176276463/minlantin@gmail.com

I hope this would merit a favorable response.

Sincerely,

Armine Joy P. Lantin

Appendix B

Letter to the Expert for Validation of Instruments



Republic of the Philippines
 PHILIPPINE NORMAL UNIVERSITY
The National Center for Teacher Education
 College of Graduate Studies and Teacher Education Research
 SPECIAL EDUCATION SPECIALIZATION

Dear _____,

Good day!

The undersigned is presently working on her research “Towards the Development of Empathy” in partial fulfillment of the requirement for the degree of Master of Education - Special Education (Intellectual Disabilities) at Philippine Normal University.

In this regard, kindly evaluate the video animation, illustration and role playing guide if they are valid and appropriate enough to be used as an instrument for the video modeling – role playing intervention.

Your comments and suggestions are also solicited for the improvement of the instrument.

Your favorable reply will be appreciated.

Sincerely,

Armine Joy P. Lantin

Appendix C

Parent's Consent Form

Identification of Researcher & Purpose of Study

Your child is requested to participate in a research study conducted by Armine Joy P. Lantin from Philippine Normal University. The goal of this study is to develop an intervention program where video modeling and role playing is combined towards the development of empathy among children with ASD.

Research Procedures

You will be asked to authorize this agreement form once all your questions have been responded and after you allow your child to participate in this research study. This study consists of a questionnaire that will be given to you and your child's teacher. The teacher of your child will also be interviewed.

The intervention includes watching videos showing empathy in different scenarios and participating in role playing tasks.

Time Required

Two hours of your child's time per week as there will be four sessions per week will be required. The intervention will last for six weeks. A total of 24 hours is the total time expected for participation.

An hour of your time will be required for the completion of questionnaire.

Risks

The researcher does not see hazards from your child's participation in this study.

Benefits

Participating in this study include the following potential benefits: improvement of empathy skill of your child since he will be able to communicate his emotions and manage how he feels and respond appropriately to the emotion of other people.

Confidentiality

Results of the study will be presented at a thesis defense. Pseudonyms will be used to assure the privacy and confidentiality of your child's identity should the study be presented in a conference. Gathered data can be accessed by the researcher only. Results of the study will be used for educational purpose only.

Participation & Withdrawal

Involvement is voluntary. Your child can choose not to join or withdraw from the study if he wants to without facing consequences of any kind.

Questions about the Study

If you want further information about your child's participation in this study, please contact:

Researcher's Name: Armine Joy P. Lantin

Philippine Normal University

minlantin@gmail.com

09176276463

Giving of Consent

I have read this consent form and I allow my child to participate.

Name of Child (Printed)

(Printed Name)

(Signature)

(Date)

Appendix D

Informed Assent Agreement

Hello! My name is Mina and I am a student from Philippine Normal University. I am here to ask you to participate in my study entitled “Towards the Development of Empathy”.

The purpose of this research study is to develop an intervention program where video modeling and role playing is combined towards the development of empathy among children with ASD.

You are asked to be in this research study because you are already (6 to 13) years old.

This study will take place at your classroom and will last an hour per session. There will be four sessions for six weeks. We will spend time with each other for a total of 24 hours.

During this study, this is what will happen:

1. You will watch videos that show empathy in different scenarios (a classmate did not do well in test, a classmate has a new pencil case, a friend got involved in a minor accident, a friend does not have crayons, and a friend left his food at home) and then imitate the behavior of the model in the video.
2. You will also participate in a role playing task (taking turns, recognizing personal space, not interrupting a conversation, getting frustrated, and engaging in a conversation).

If you need to use the restroom or need a break, you just need to tell me.

If there is a development in empathy, you will be able to interpret other’s actions, recognize facial expressions and body language, manage and communicate their emotions thereby improving their relationships with peers and with the social environment.

Only I will know your answers. Your parents and teachers will not know.

Your (mom/dad/parents/guardians) have said it is okay for you to be in this research study. You do not have to be in this study if you do not want to. If you want to stop, you can tell us by saying, “I would like to stop”.

Please mark one of the choices below:

- _____ YES, I want to be in this study.
 _____ NO, I do not want to be in this study.

 Name or Signature of Subjects (*as appropriate*)

 Date

Appendix E

Debriefing Form

Debriefing Form: Towards the Development of Empathy

Thank you for agreeing to participate in this study! The general purpose of this research is to develop an intervention program where video modeling and role playing is combined towards the development of empathy among children with ASD.

You were invited since you are in the age bracket 6 to 13, received a prior diagnosis meeting the autism spectrum disorder DSM V criteria and demonstrated no or low significant language or communication deficits. In this study, you were asked to watch a video showing empathy in different scenarios and participate in role playing tasks for six weeks. Autism Social Skills Profile, Empathy Spectrum Quotient, teacher's interview and researcher's observation were utilized to evaluate if there is an improvement of your empathy skill after the intervention. Results revealed that your empathy skills improved because you're able to recognize facial expressions and body language and react appropriately to certain situations.

Thank you for your participation in this study.

Autism Social Skills Profile

Never	Sometimes	Often	Very Often
N	S	O	V

Skill Area	How Often?				Brief Description
1. Invites peers to join him/her in activities	N	S	O	V	
	1	2	3	4	
2. Joins in activities with peers	N	S	O	V	
	1	2	3	4	
3. Takes turns during games and activities	N	S	O	V	
	1	2	3	4	
4. Maintains personal hygiene	N	S	O	V	
	1	2	3	4	
5. Interacts with peers during unstructured activities	N	S	O	V	
	1	2	3	4	
6. Interacts with peers during structured activities	N	S	O	V	
	1	2	3	4	
7. Ask questions to request information about a person	N	S	O	V	
	1	2	3	4	
8. Ask questions to request information about a topic	N	S	O	V	
	1	2	3	4	
9. Engages in one-on-one social interaction with peers	N	S	O	V	
	1	2	3	4	
10. Interacts with group of peers	N	S	O	V	
	1	2	3	4	
11. Maintains the “give and take” of conversations	N	S	O	V	
	1	2	3	4	

12. Expresses sympathy for others	N	S	O	V	
	1	2	3	4	
13. Talks about or acknowledges the interests of others	N	S	O	V	
	1	2	3	4	
14. Recognizes the facial expressions of others	N	S	O	V	
	1	2	3	4	
15. Recognizes the nonverbal cues, “body language” of others	N	S	O	V	
	1	2	3	4	
16. Requests assistance from others	N	S	O	V	
	1	2	3	4	
17. Understands the jokes of humor of others	N	S	O	V	
	1	2	3	4	
18. Maintains eye contact during conversations	N	S	O	V	
	1	2	3	4	
19. Maintains an appropriate distance when interacting with peers	N	S	O	V	
	1	2	3	4	
20. Speaks with an appropriate volume in conversations	N	S	O	V	
	1	2	3	4	
21. Considers multiple viewpoints	N	S	O	V	
	1	2	3	4	
22. Offers assistance to others	N	S	O	V	
	1	2	3	4	
23. Verbally expresses how he/she is feeling	N	S	O	V	
	1	2	3	4	
24. Responds to the greetings of others	N	S	O	V	
	1	2	3	4	

25. Joins a conversation with two or more people without interrupting	N	S	O	V	
	1	2	3	4	
26. Initiates greetings with others	N	S	O	V	
	1	2	3	4	
27. Provides compliments to others	N	S	O	V	
	1	2	3	4	
28. Introduces self to others	N	S	O	V	
	1	2	3	4	
29. Politely asks others to move out of his/her way	N	S	O	V	
	1	2	3	4	
30. Acknowledges the compliments directed to him/her by others	N	S	O	V	
	1	2	3	4	
31. Allows peers to join him/her in activities	N	S	O	V	
	1	2	3	4	
32. Responds to the invitations of peers to join them in activities	N	S	O	V	
	1	2	3	4	
33. Allows others to assist him/her with tasks	N	S	O	V	
	1	2	3	4	
34. Responds to questions directed at him/her by others	N	S	O	V	
	1	2	3	4	
35. Experiences positive peer interactions	N	S	O	V	
	1	2	3	4	
36. Compromises during disagreements with others	N	S	O	V	
	1	2	3	4	
37. Responds slowly in conversations	N	S	O	V	
	1	2	3	4	
38. Changes the topic of conversation to fit self-interests	N	S	O	V	
	1	2	3	4	

39. Misinterprets the intentions of others	N	S	O	V	
	1	2	3	4	
40. Makes inappropriate comments	N	S	O	V	
	1	2	3	4	
41. Engages in solitary interests and hobbies	N	S	O	V	
	1	2	3	4	
42. Ends conversation abruptly	N	S	O	V	
	1	2	3	4	
43. Fails to read cues to terminate conversations	N	S	O	V	
	1	2	3	4	
44. Exhibits fear or anxiety regarding social interactions	N	S	O	V	
	1	2	3	4	
45. Experiences negative peer interactions	N	S	O	V	
	1	2	3	4	
46. Engages in socially inappropriate behaviors	N	S	O	V	
	1	2	3	4	
47. Exhibits poor timing with his/her social initiations	N	S	O	V	
	1	2	3	4	
48. Is manipulated by peers	N	S	O	V	
	1	2	3	4	
49. Engages in solitary activities in the presence of peers	N	S	O	V	
	1	2	3	4	

Appendix G

Empathy Spectrum Quotient

Child's Name: _____

Your Name: _____

Relationship to Child: ___Mother ___Father ___Guardian ___Other _____

Please read each statement very carefully and rate how strongly you agree or disagree with it by circling your answer. There are no right or wrong answers, or trick questions. In order for the scale to be valid, you must answer every question.

1. My child likes to look after other people.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
2. My child often doesn't understand why some things upset other people so much.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
3. My child doesn't mind if things in the house are not in their proper place.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
4. My child would not cry or get upset if a character in a film died.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
5. My child enjoys arranging things precisely (e.g. flowers, books, music collections).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
6. My child is quick to notice when people are joking.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
7. My child enjoys cutting up worms, or pulling the legs off insects.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
8. My child is interested in the different members of a specific animal category (e.g. dinosaurs, insects, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
9. My child has stolen something they wanted from their sibling or friend.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
10. My child is interested in different types of vehicles (e.g. types of trains, cars, planes, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree

11. My child does not spend large amounts of time lining things up in a particular order (e.g. toy soldiers, animals, cars).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
12. If they had to build a Lego or Meccano model, my child would follow an instruction sheet rather than "ploughing straight in".	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
13. My child has trouble forming friendships.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
14. When playing with other children, my child spontaneously takes turns and shares toys.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
15. My child prefers to read or listen to fiction rather than non-fiction.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
16. My child's bedroom is usually messy rather than organized.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
17. My child can be blunt giving their opinions, even when these may upset someone.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
18. My child would enjoy looking after a pet.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
19. My child likes to collect things (e.g. stickers, trading cards, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
20. My child is often rude or impolite without realizing it.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
21. My child knows how to mix paints to produce different colors.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
22. My child would not notice if something in the house had been moved or changed.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
23. My child has been in trouble for physical bullying.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree

24. My child enjoys physical activities with set rules (e.g. martial arts, gymnastics, ballet, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
25. My child can easily figure out the controls of the video or DVD player.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
26. At school, when my child understands something they can easily explain it clearly to others.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
27. My child would find it difficult to list their top 5 songs or films in order.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
28. My child has one or two close friends, as well as several other friends.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
29. My child quickly grasps patterns in numbers in maths.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
30. My child listens to others' opinions, even when different from their own.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
31. My child shows concern when others are upset.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
32. My child is not interested in understanding the workings of machines (e.g. cameras, traffic lights, the TV, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
33. My child can seem so preoccupied with their own thoughts that they don't notice others getting bored.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
34. My child enjoys games that have strict rules (e.g. chess, dominos, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
35. My child gets annoyed when things aren't done on time.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
36. My child blames other children for things that they themselves have done.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
37. My child gets very upset if they see an animal in pain.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree

38. My child knows the differences between the latest models of games-consoles (e.g. X-box, Playstation, etc.) or other gadgets.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
39. My child remembers large amounts of information about a topic that interests them (e.g. flags of the world, football teams, pop groups, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
40. My child sometimes pushes or pinches someone if they are annoying them.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
41. My child is interested in following the route on a map on a journey.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
42. My child can easily tell when another person wants to enter into conversation with them.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
43. My child is good at negotiating for what they want.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
44. My child likes to create lists of things (e.g. favorite toys, TV programs, etc).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
45. My child would worry about how another child would feel if they weren't invited to a party.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
46. My child likes to spend time mastering particular aspects of their favorite activities (e.g. skate-board or yo-yo tricks, football or ballet moves).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
47. My child finds using computers difficult.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
48. My child gets upset at seeing others crying or in pain.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
49. If they had a sticker album, my child would not be satisfied until it was completed.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
50. My child enjoys events with organized routines (e.g. brownies, cubs, etc.)	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree

51. My child is not bothered about knowing the exact timings of the day's plans.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
52. My child likes to help new children integrate in class.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
53. My child has been in trouble for name-calling or teasing.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
54. My child would not enjoy working to complete a puzzle (e.g. crossword, jigsaw, word-search).	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
55. My child tends to resort to physical aggression to get what they want.	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree

Appendix H

Autism Social Skills Profile Raw Scores

Pretest and Posttest scores of Participant 1 in Autism Social Skills Profile

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
SOCIAL RECIPROCITY								
Takes turns during games and activities	2	S	2	S	3	O	2	S
Maintains personal hygiene	3	O	2	S	3	O	2	S
Asks questions to request information about a person	2	S	2	S	2	S	2	S
Asks questions to request information about a topic	2	S	2	S	2	S	2	S
Maintains the “give and take” of conversations	2	S	1	N	2	S	2	S
Expresses sympathy for others	2	S	2	S	2	S	2	S
Talks about or acknowledges the interests of others	2	S	2	S	2	S	2	S
Recognizes the facial expressions of others	2	S	4	VO	3	O	3	O
Understands the jokes of humor of others	2	S	3	O	2	S	2	S
Maintains an appropriate distance when interacting with peers	2	S	2	S	4	VO	3	O
Speaks with an appropriate volume in conversations	2	S	3	O	3	O	3	O
Considers multiple viewpoints	1	N	1	N	1	N	1	N
Offers assistance to others	2	S	4	VO	3	O	4	VO
Verbally expresses how he/she is feeling	2	S	2	S	3	O	4	VO
Responds to the greetings of others	2	S	2	S	3	O	3	O
Joins a conversation with two or more people without interrupting	2	S	2	S	2	S	2	S
Initiates greetings with others	1	N	1	N	2	S	3	O
Provides compliments to others	1	N	1	N	2	S	2	S
Introduces self to others	1	N	1	N	2	S	3	O
Politely asks others to move out of his/her way	2	S	3	O	3	O	3	O
Acknowledges the compliments directed to him/her by others	2	S	2	S	2	S	2	S
Responds to questions directed at him/her by others	2	S	2	S	3	O	2	S
Compromises during disagreements with others	1	N	3	O	2	S	2	S
SOCIAL PERFORMANCE/AVOIDANCE								
Invites peers to join him in activities	2	S	2	S	2	S	2	S
Joins in activities with peers	2	S	2	S	3	O	3	O
Interacts with peers during unstructured activities	2	S	2	S	3	O	3	O
Interacts with peers during structured activities	3	O	4	VO	3	O	4	VO
Engages in one-on-one social interaction with peers	2	S	2	S	3	O	2	S
Interacts with group of peers	2	S	2	S	3	O	3	O
Allows peers to join him/her in activities	2	S	2	S	3	O	3	O
Responds to the invitations of peers to join them in activities	2	S	2	S	3	O	3	O

Experiences positive peer interactions	2	S	2	S	4	VO	4	VO
Engages in solitary interests and hobbies	2	S	3	O	2	S	2	S
Exhibits fear or anxiety regarding social interactions	2	S	1	N	1	N	1	N
Engages in solitary activities in the presence of peers	2	S	3	O	2	S	2	S
DETRIMENTAL BEHAVIOR								
Recognizes the nonverbal cues, "body language" of others	2	S	3	O	3	O	3	O
Changes the topic of conversation to fit self-interests	2	S	2	S	1	N	2	S
Misinterprets the intentions of others	2	S	3	O	1	N	1	N
Makes inappropriate comments	2	S	2	S	1	N	1	N
Ends conversation abruptly	2	S	3	O	2	S	2	S
Fails to read cues to terminate conversations	2	S	3	O	2	S	2	S
Experiences negative peer interactions	2	S	3	O	1	N	1	N
Engages in socially inappropriate behaviors	2	S	2	S	2	S	2	S
Exhibits poor timing with his/her social initiations	2	S	2	S	2	S	2	S
Is manipulated by peers	2	S	3	O	1	N	1	N
EXCLUDED ITEMS								
Requests assistance from others	2	S	2	S	2	S	2	S
Maintains eye contact during conversations	2	S	2	S	3	O	2	S
Allows others to assist him with tasks	2	S	2	S	2	S	2	S
Responds slowly in conversations	2	S	2	S	2	S	2	S

Legend: N – Never; S – Sometimes; O – Often; VO – Very Often

Pretest and Posttest scores of Participant 2 in Autism Social Skills Profile

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
SOCIAL RECIPROCITY								
Takes turns during games and activities	2	S	2	S	3	O	2	S
Maintains personal hygiene	3	O	4	VO	3	O	4	VO
Asks questions to request information about a person	2	S	2	S	2	S	2	S
Asks questions to request information about a topic	2	S	2	S	2	S	2	S
Maintains the “give and take” of conversations	2	S	2	S	2	S	2	S
Expresses sympathy for others	2	S	2	S	2	S	2	S
Talks about or acknowledges the interests of others	2	S	2	S	2	S	2	S
Recognizes the facial expressions of others	2	S	3	O	3	O	3	O
Understands the jokes of humor of others	2	S	2	S	2	S	2	S
Maintains an appropriate distance when interacting with peers	2	S	2	S	4	VO	3	O
Speaks with an appropriate volume in conversations	2	S	2	S	3	O	3	O
Considers multiple viewpoints	1	N	1	N	1	N	1	N
Offers assistance to others	2	S	4	VO	3	O	4	VO
Verbally expresses how he is feeling	2	S	2	S	3	O	4	VO
Responds to the greetings of others	2	S	2	S	3	O	3	O
Joins a conversation with two or more people without interrupting	2	S	2	S	2	S	2	S
Initiates greetings with others	2	S	2	S	3	O	3	O
Provides compliments to others	1	N	1	N	2	S	2	S
Introduces self to others	1	N	1	N	2	S	2	S
Politely asks others to move out of his way	2	S	2	S	3	O	3	O
Acknowledges the compliments directed to him by others	2	S	2	S	2	S	2	S
Responds to questions directed at him by others	2	S	2	S	3	O	2	S
Compromises during disagreements with others	1	N	2	S	2	S	2	S
SOCIAL PERFORMANCE/AVOIDANCE								
Invites peers to join him in activities	2	S	2	S	3	O	3	O
Joins in activities with peers	2	S	2	S	3	O	3	O
Interacts with peers during unstructured activities	2	S	2	S	3	O	3	O
Interacts with peers during structured activities	3	O	4	VO	3	O	4	VO
Engages in one-on-one social interaction with peers	2	S	2	S	3	O	2	S
Interacts with group of peers	2	S	2	S	3	O	3	O
Allows peers to join him in activities	2	S	2	S	3	O	3	O
Responds to the invitations of peers to join him in activities	2	S	2	S	3	O	3	O
Experiences positive peer interactions	2	S	2	S	4	VO	3	O
Engages in solitary interests and hobbies	2	S	2	S	2	S	2	S
Exhibits fear or anxiety regarding social interactions	2	S	2	S	1	N	1	N
Engages in solitary activities in the presence of peers	2	S	2	S	2	S	2	S

Pretest and Posttest scores of Participant 3 in Autism Social Skills Profile

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
SOCIAL RECIPROCITY								
Takes turns during games and activities	2	S	1	N	3	O	2	S
Maintains personal hygiene	3	O	1	N	3	O	2	S
Ask questions to request information about a person	2	S	1	N	2	S	2	S
Ask questions to request information about a topic	1	N	1	N	2	S	1	N
Maintains the “give and take” of conversations	2	S	1	N	2	S	2	S
Expresses sympathy for others	2	S	2	S	2	S	2	S
Talks about or acknowledges the interests of others	2	S	1	N	2	S	2	S
Recognizes the facial expressions of others	2	S	2	S	3	O	3	O
Understands the jokes of humor of others	2	S	1	N	2	S	2	S
Maintains an appropriate distance when interacting with peers	2	S	1	N	4	VO	2	S
Speaks with an appropriate volume in conversations	2	S	2	S	3	O	3	O
Considers multiple viewpoints	1	N	1	N	1	N	1	N
Offers assistance to others	2	S	1	N	2	S	2	S
Verbally expresses how he/she is feeling	2	S	1	N	2	S	3	O
Responds to the greetings of others	2	S	2	S	3	O	3	O
Joins a conversation with two or more people without interrupting	2	S	2	S	2	S	2	S
Initiates greetings with others	1	N	1	N	2	S	2	S
Provides compliments to others	1	N	1	N	2	S	2	S
Introduces self to others	1	N	1	N	1	N	2	S
Politely asks others to move out of his/her way	2	S	1	N	2	S	2	S
Acknowledges the compliments directed to him/her by others	2	S	1	N	2	S	2	S
Responds to questions directed at him/her by others	2	S	1	N	3	O	2	S
Compromises during disagreements with others	2	S	1	N	2	S	2	S
SOCIAL PERFORMANCE/AVOIDANCE								
Invites peers to join him/her in activities	1	N	1	N	2	S	2	S
Joins in activities with peers	1	N	1	N	2	S	2	S
Interacts with peers during unstructured activities	1	N	1	N	2	S	2	S
Interacts with peers during structured activities	2	S	1	N	2	S	2	S
Engages in one-on-one social interaction with peers	1	N	1	N	3	O	2	S
Interacts with group of peers	2	S	1	N	3	O	3	O
Allows peers to join him/her in activities	2	S	1	N	2	S	2	S
Responds to the invitations of peers to join them in activities	2	S	1	N	2	S	2	S
Experiences positive peer interactions	2	S	2	S	4	VO	3	O
Engages in solitary interests and hobbies	3	O	3	O	2	S	2	S
Exhibits fear or anxiety regarding social interactions	2	S	3	O	1	N	1	N
Engages in solitary activities in the presence of peers	2	S	1	N	2	S	2	S
DETRIMENTAL BEHAVIOR								

Pretest and Posttest scores of Participant 4 in Autism Social Skills Profile

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
SOCIAL RECIPROCITY								
Takes turns during games and activities	2	S	2	S	3	O	2	S
Maintains personal hygiene	3	O	2	S	3	O	2	S
Ask questions to request information about a person	1	N	2	S	2	S	2	S
Ask questions to request information about a topic	1	N	1	N	2	S	1	N
Maintains the “give and take” of conversations	1	N	2	S	2	S	3	O
Expresses sympathy for others	2	S	2	S	2	S	2	S
Talks about or acknowledges the interests of others	1	N	1	N	2	S	2	S
Recognizes the facial expressions of others	1	N	2	S	3	O	3	O
Understands the jokes of humor of others	1	N	2	S	2	S	3	O
Maintains an appropriate distance when interacting with peers	2	S	1	N	3	O	3	O
Speaks with an appropriate volume in conversations	2	S	1	N	3	O	3	O
Considers multiple viewpoints	1	N	1	N	1	N	1	N
Offers assistance to others	2	S	2	S	2	S	2	S
Verbally expresses how he feel	2	S	2	S	2	S	3	O
Responds to the greetings of others	2	S	1	N	3	O	3	O
Joins a conversation with two or more people without interrupting	2	S	2	S	2	S	2	S
Initiates greetings with others	1	N	1	N	2	S	2	S
Provides compliments to others	1	N	1	N	2	S	2	S
Introduces self to others	1	N	1	N	2	S	3	O
Politely asks others to move out of his way	2	S	1	N	2	S	2	S
Acknowledges the compliments directed to him by others	2	S	2	S	2	S	2	S
Responds to questions directed at him by others	1	N	3	O	3	O	2	S
Compromises during disagreements with others	2	S	2	S	2	S	2	S
SOCIAL PERFORMANCE/AVOIDANCE								
Invites peers to join him in activities	1	N	2	N	2	S	2	S
Joins in activities with peers	2	S	3	N	3	O	2	S
Interacts with peers during unstructured activities	1	N	2	N	2	S	2	S
Interacts with peers during structured activities	2	S	2	S	2	S	2	S
Engages in one-on-one social interaction with peers	1	N	3	N	3	O	2	S
Interacts with group of peers	2	S	3	S	3	O	3	O
Allows peers to join him in activities	1	N	3	S	3	O	3	O
Responds to the invitations of peers to join them in activities	2	S	3	O	3	O	3	O
Experiences positive peer interactions	2	S	3	S	3	O	3	O
Engages in solitary interests and hobbies	3	O	2	O	2	S	2	S
Exhibits fear or anxiety regarding social interactions	2	S	1	S	1	N	1	N
Engages in solitary activities in the presence of peers	2	S	2	S	2	S	2	S

Appendix I

Empathy Spectrum Quotient Raw Scores

Pretest and Posttest scores of Participant 1 in Empathy Spectrum Quotient

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
EMPATHIZING QUOTIENT								
My child likes to look after other people.	0	SD	0	SD	1	SA	1	SA
My child often doesn't understand why some things upset other people so much.	0	SA	0	SA	1	SD	1	SD
My child would not cry or get upset if a character in a film died.	0	SA	0	DA	0	DA	0	DA
My child is quick to notice when people are joking.	0	SD	1	SA	1	SA	1	SA
My child enjoys cutting up worms, or pulling the legs off insects.	1	SD	1	SD	2	DD	2	DD
My child has stolen something he wanted from their sibling or friend.	1	SD	1	SD	2	DD	1	SD
My child has trouble forming friendships.	0	SA	0	SA	1	SD	1	SD
When playing with other children, my child spontaneously takes turns and shares toys.	0	SD	1	SA	1	SA	1	SA
My child can be blunt giving his opinions, even when these may upset someone.	1	SD	0	SA	1	SD	1	SD
My child would enjoy looking after a pet.	1	SA	1	SA	1	SA	1	SA
My child is often rude or impolite without realizing it.	1	SD	0	SA	1	SD	1	SD
My child has been in trouble for physical bullying.	0	SA	0	SA	1	SD	1	SD
At school, when my child understands something he can easily explain it clearly to others.	0	SD	1	SA	0	SD	1	SA
My child has one or two close friends, as well as several other friends.	1	SA	1	SA	1	SA	1	SA
My child listens to others' opinions, even when different from his own.	0	SD	0	SD	1	SA	1	SA
My child shows concern when others are upset.	0	SD	0	SD	1	SA	1	SA
My child can seem so preoccupied with his own thoughts that he doesn't notice others getting bored.	0	SA	0	SA	1	SD	1	SD
My child blames other children for things that he himself has done.	0	SA	0	DA	1	SD	1	SD
My child gets very upset if he sees an animal in pain.	1	SA	1	SA	2	DA	2	DA
My child sometimes pushes or pinches someone that annoys him.	0	SA	0	DA	2	DD	1	SD
My child can easily tell when another person wants to enter into conversation with him.	1	SA	1	SA	1	SA	1	SA
My child is good at negotiating for what he wants.	1	SA	1	SA	1	SA	1	SA
My child would worry about how another child would feel if that child wasn't invited to a party.	0	SD	0	SD	1	SA	1	SA
My child gets upset at seeing others crying or in pain.	1	SA	1	SA	1	SA	1	SA
My child likes to help new children integrate in class.	1	SA	1	SA	1	SA	1	SA
My child has been in trouble for name-calling or teasing.	0	SA	0	SA	0	SA	0	SA
My child tends to resort to physical aggression to get what he wants.	0	SA	0	SA	1	SD	1	SD
SYSTEMIZING QUOTIENT								
My child doesn't mind if things in the house are not in their proper	0	DA	0	DA	0	SA	0	DA

place.									
My child enjoys arranging things precisely (e.g. flowers, books, music collections).	1	SA	2	DA	1	SA	2	DA	
My child is interested in the different members of a specific animal category (e.g. dinosaurs, insects, etc.).	0	DD	1	SA	0	DD	1	SA	
My child is interested in different types of vehicles (e.g. types of trains, cars, planes, etc.).	0	SD	2	DA	0	SD	2	DA	
My child does not spend large amounts of time lining things up in a particular order (e.g. toy soldiers, animals, cars).	0	SA	1	SD	0	SA	2	DD	
If he had to build a Lego or Meccano model, my child would follow an instruction sheet rather than "ploughing straight in".	1	SA	1	SA	1	SA	1	SA	
My child prefers to read or listen to fiction rather than non-fiction.	1	SD	0	SA	0	SA	0	SA	
My child's bedroom is usually messy rather than organized.	1	SD	1	SD	1	SD	1	SD	
My child likes to collect things (e.g. stickers, trading cards, etc.).	0	DD	0	SD	0	DD	0	SD	
My child knows how to mix paints to produce different colors.	1	SA	0	SD	1	SA	0	SA	
My child would not notice if something in the house had been moved or changed.	0	SA	0	SA	0	SA	0	SA	
My child enjoys physical activities with set rules (e.g. martial arts, gymnastics, ballet, etc.).	0	DD	1	SA	0	DD	1	SA	
My child can easily figure out the controls of the video or DVD player.	0	DD	0	DD	0	DD	0	DD	
My child would find it difficult to list his top 5 songs or films in order.	0	DA	0	DA	0	DA	0	DA	
My child quickly grasps patterns in numbers in maths.	0	SD	0	DD	0	SD	0	DD	
My child is not interested in understanding the workings of machines (e.g. cameras, traffic lights, the TV, etc.).	0	DA	0	SA	0	DA	0	DA	
My child enjoys games that have strict rules (e.g. chess, dominos, etc.).	0	DD	0	SD	0	DD	0	SD	
My child gets annoyed when things aren't done on time.	0	DD	0	DD	0	DD	0	DD	
My child knows the differences between the latest models of games-consoles (e.g. X-box, PlayStation, etc.) or other gadgets.	0	DD	0	DD	0	DD	0	DD	
My child remembers large amounts of information about a topic that interests him (e.g. flags of the world, football teams, pop groups, etc.).	0	DD	0	DD	0	DD	0	DD	
My child is interested in following the route on a map on a journey.	0	SD	0	SD	0	SD	0	SD	
My child likes to create lists of things (e.g. favorite toys, TV programs, etc.).	0	DD	0	SD	0	DD	0	SD	
My child likes to spend time mastering particular aspects of their favorite activities (e.g. skate-board or yo-yo tricks, football or ballet moves).	0	SD	0	SD	0	SD	0	SD	
My child finds using computers difficult.	0	DA	0	DA	0	DA	0	DA	
If they had a sticker album, my child would not be satisfied until it was completed.	0	SD	0	DD	0	SD	0	DD	
My child enjoys events with organized routines (e.g. brownies, cubs, beavers, etc.).	0	SD	0	SD	0	SD	0	SD	
My child is not bothered about knowing the exact timings of the day's plans.	0	DA	0	DA	0	DA	0	DA	
My child would not enjoy working to complete a puzzle (e.g. crossword, jigsaw, word-search).	1	SD	0	SA	1	SD	0	SA	
Total	17		21		33		37		

Legend: SA – Strongly Agree; A – Agree; SD – Strongly Disagree; D – Disagree

Pretest and Posttest scores of Participant 2 in Empathy Spectrum Quotient

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
EMPATHIZING QUOTIENT								
My child likes to look after other people.	1	SA	0	SD	1	SA	1	SA
My child often doesn't understand why some things upset other people so much.	0	SA	0	SA	1	SD	1	SD
My child would not cry or get upset if a character in a film died.	0	DA	0	DA	0	DA	0	DA
My child is quick to notice when people are joking.	0	SD	0	SD	1	SA	1	SA
My child enjoys cutting up worms, or pulling the legs off insects.	1	SD	1	SD	2	DD	2	DD
My child has stolen something he wanted from their sibling or friend.	1	SD	1	SD	2	DD	1	SD
My child has trouble forming friendships.	0	SA	0	SA	1	SD	1	SD
When playing with other children, my child spontaneously takes turns and shares toys.	0	SD	1	SA	1	SA	1	SA
My child can be blunt giving his opinions, even when these may upset someone.	1	SD	0	SA	1	SD	1	SD
My child would enjoy looking after a pet.	1	SA	1	SA	1	SA	2	DA
My child is often rude or impolite without realizing it.	1	SD	0	SA	1	SD	1	SD
My child has been in trouble for physical bullying.	1	SD	0	DA	1	SD	1	SD
At school, when my child understands something he can easily explain it clearly to others.	0	SD	1	SA	0	SD	1	SA
My child has one or two close friends, as well as several other friends.	1	SA	1	SA	1	SA	1	SA
My child listens to others' opinions, even when different from his own.	0	SD	0	SD	1	SA	1	SA
My child shows concern when others are upset.	0	SD	1	SA	1	SA	1	SA
My child can seem so preoccupied with his own thoughts that he doesn't notice others getting bored.	0	SA	0	SA	1	SD	1	SD
My child blames other children for things that he himself has done.	1	SD	0	SA	1	SD	1	SD
My child gets very upset if he sees an animal in pain.	1	SA	1	SA	1	SA	1	SA
My child sometimes pushes or pinches someone who annoys him.	1	SD	2	DD	1	SD	2	DD
My child can easily tell when another person wants to enter into conversation with him.	1	SA	1	SA	1	SA	1	SA
My child is good at negotiating for what he wants.	1	SA	1	SA	1	SA	1	SA
My child would worry about how another child would feel if the child weren't invited to a party.	0	SD	1	SA	0	SD	1	SA
My child gets upset at seeing others crying or in pain.	1	SA	1	SA	1	SA	1	SA
My child likes to help new children integrate in class.	0	SD	1	SA	1	SA	1	SA
My child has been in trouble for name-calling or teasing.	1	SD	0	SA	1	SD	0	SA
My child tends to resort to physical aggression to get what he wants.	1	SD	1	SD	1	SD	2	DD
SYSTEMIZING QUOTIENT								
My child doesn't mind if things in the house are not in their proper place.	0	DA	1	SD	0	DA	1	SD
My child enjoys arranging things precisely (e.g. flowers, books, music collections).	1	SA	2	DA	1	SA	2	DA

My child is interested in the different members of a specific animal category (e.g. dinosaurs, insects, etc.).	0	DD	2	DA	0	DD	2	DA
My child is interested in different types of vehicles (e.g. types of trains, cars, planes, etc.).	0	DD	0	DD	0	DD	0	DD
My child does not spend large amounts of time lining things up in a particular order (e.g. toy soldiers, animals, cars).	0	DA	0	SA	0	DA	2	DD
If he had to build a Lego or Meccano model, my child would follow an instruction sheet rather than "ploughing straight in".	1	SA	1	SA	1	SA	1	SA
My child prefers to read or listen to fiction rather than non-fiction.	1	SD	1	SD	0	SA	0	SA
My child's bedroom is usually messy rather than organized.	1	SD	1	SD	1	SD	1	SD
My child likes to collect things (e.g. stickers, trading cards, etc.).	0	DD	0	DD	0	DD	0	DD
My child knows how to mix paints to produce different colors.	1	SA	1	SA	1	SA	1	SA
My child would not notice if something in the house had been moved or changed.	0	SA	1	SD	0	SA	1	SD
My child enjoys physical activities with set rules (e.g. martial arts, gymnastics, ballet, etc.).	0	DD	1	SA	0	DD	1	SA
My child can easily figure out the controls of the video or DVD player.	0	DD	0	DD	0	DD	0	DD
My child would find it difficult to list their top 5 songs or films in order.	0	DA	0	DA	0	DA	0	DA
My child quickly grasps patterns in numbers in maths.	0	DD	0	DD	0	DD	0	DD
My child is not interested in understanding the workings of machines (e.g. cameras, traffic lights, the TV, etc.).	0	DA	0	DA	0	DA	0	DA
My child enjoys games that have strict rules (e.g. chess, dominos, etc.).	0	SD	0	SD	0	SD	0	SD
My child gets annoyed when things aren't done on time.	0	DD	0	DD	0	DD	0	DD
My child knows the differences between the latest models of games-consoles (e.g. X-box, PlayStation, etc.) or other gadgets.	0	DD	0	DD	0	DD	0	DD
My child remembers large amounts of information about a topic that interests him (e.g. flags of the world, football teams, pop groups, etc.).	0	DD	0	DD	0	DD	0	DD
My child is interested in following the route on a map on a journey.	0	SD	0	SD	0	SD	0	SD
My child likes to create lists of things (e.g. favorite toys, TV programs, etc.).	0	SD	0	SD	0	SD	0	SD
My child likes to spend time mastering particular aspects of his favorite activities (e.g. skate-board or yo-yo tricks, football or ballet moves).	0	DD	0	SD	0	DD	0	SD
My child finds using computers difficult.	0	DD	0	DD	0	DD	0	DD
If he had a sticker album, my child would not be satisfied until it was completed.	0	DD	0	SD	0	DD	0	SD
My child enjoys events with organized routines (e.g. brownies, cubs, beavers, etc.).	0	SD	1	SA	0	SD	1	SA
My child is not bothered about knowing the exact timings of the day's plans.	0	DA	0	DA	0	DA	0	DA
My child would not enjoy working to complete a puzzle (e.g. crossword, jigsaw, word-search).	1	SD	0	SA	0	SA	0	SA
Total	22		28		30		42	

Legend: SA – Strongly Agree; A – Agree; SD – Strongly Disagree; D – Disagree

Pretest and posttest scores of Participant 3 in Empathy Spectrum Quotient

	Pretest				Posttest			
	Teacher		Parent		Teacher		Parent	
EMPATHIZING QUOTIENT								
My child likes to look after other people.	1	SA	0	SD	1	SA	1	SA
My child often doesn't understand why some things upset other people so much.	0	SA	0	SA	1	SD	1	SD
My child would not cry or get upset if a character in a film died.	0	DA	0	SA	0	DA	1	SD
My child is quick to notice when people are joking.	0	SD	1	SA	1	SA	2	DA
My child enjoys cutting up worms, or pulling the legs off insects.	1	SD	1	SD	2	DD	2	DD
My child has stolen something he wanted from his sibling or friend.	1	SD	2	DD	2	DD	2	DD
My child has trouble forming friendships.	0	SA	0	SA	1	SD	1	SD
When playing with other children, my child spontaneously takes turns and shares toys.	0	SD	2	DA	1	SA	2	DA
My child can be blunt giving his opinions, even when these may upset someone.	1	SD	0	SA	1	SD	1	SD
My child would enjoy looking after a pet.	1	SA	1	SA	1	SA	2	DA
My child is often rude or impolite without realizing it.	1	SD	0	DA	1	SD	1	SD
My child has been in trouble for physical bullying.	1	SD	0	SA	1	SD	1	SD
At school, when my child understands something he can easily explain it clearly to others.	0	DD	1	SA	1	SA	2	DA
My child has one or two close friends, as well as several other friends.	1	SA	1	SA	1	SA	1	SA
My child listens to others' opinions, even when different from his own.	0	SD	0	SD	1	SA	1	SA
My child shows concern when others are upset.	0	SD	0	SD	1	SA	1	SA
My child can seem so preoccupied with his own thoughts that he doesn't notice others getting bored.	0	SA	0	SA	1	SD	1	SD
My child blames other children for things that he himself has done.	1	SD	1	SD	1	SD	1	SD
My child gets very upset if he sees an animal in pain.	1	SA	1	SA	1	SA	1	SA
My child sometimes pushes or pinches someone that annoys him.	0	SA	0	SA	1	SD	1	SD
My child can easily tell when another person wants to enter into conversation with him.	0	SD	1	SA	1	SA	1	SA
My child is good at negotiating for what he wants.	0	SD	1	SA	1	SA	1	SA
My child would worry about how another child would feel if that child wasn't invited to a party.	0	DD	0	DD	0	SD	0	SD
My child gets upset at seeing others crying or in pain.	1	SA	1	SA	1	SA	2	SA
My child likes to help new children integrate in class.	0	SD	1	SA	1	SA	1	SA
My child has been in trouble for name-calling or teasing.	1	SD	0	SA	1	SD	1	SD
My child tends to resort to physical aggression to get what he wants.	2	DD	2	DD	2	DD	2	DD
SYSTEMIZING QUOTIENT								
My child doesn't mind if things in the house are not in their proper place.	0	DA	0	DA	0	DA	0	DA
My child enjoys arranging things precisely (e.g. flowers, books, music collections).	0	SD	2	DA	1	SA	2	DA
My child is interested in the different members of a specific animal	0	DD	2	DA	0	DD	2	DA

category (e.g. dinosaurs, insects, etc.).									
My child is interested in different types of vehicles (e.g. types of trains, cars, planes, etc.).	1	SA	2	DA	1	SA	2	DA	
My child does not spend large amounts of time lining things up in a particular order (e.g. toy soldiers, animals, cars).	0	DA	1	SD	0	DA	1	SD	
If they had to build a Lego or Meccano model, my child would follow an instruction sheet rather than "ploughing straight in".	1	SA	1	SA	1	SA	1	SA	
My child prefers to read or listen to fiction rather than non-fiction.	1	SD	0	SA	0	SA	0	SA	
My child's bedroom is usually messy rather than organized.	1	SD	0	SA	1	SD	0	SA	
My child likes to collect things (e.g. stickers, trading cards, etc.).	0	SD	1	SA	0	SD	1	SA	
My child knows how to mix paints to produce different colors.	1	SA	1	SA	1	SA	2	DA	
My child would not notice if something in the house had been moved or changed.	0	DA	0	DA	0	DA	0	DA	
My child enjoys physical activities with set rules (e.g. martial arts, gymnastics, ballet, etc.).	0	SD	1	SA	0	SD	2	DA	
My child can easily figure out the controls of the video or DVD player.	0	DD	0	DD	0	DD	0	DD	
My child would find it difficult to list their top 5 songs or films in order.	0	DA	0	DA	0	DA	0	DA	
My child quickly grasps patterns in numbers in maths.	0	DD	0	DD	0	DD	0	DD	
My child is not interested in understanding the workings of machines (e.g. cameras, traffic lights, the TV, etc.).	0	DA	0	DA	0	DA	0	DA	
My child enjoys games that have strict rules (e.g. chess, dominos, etc.).	0	DD	0	DD	0	DD	0	DD	
My child gets annoyed when things aren't done on time.	0	DD	0	DD	0	DD	0	DD	
My child knows the differences between the latest models of games-consoles (e.g. X-box, PlayStation, etc.) or other gadgets.	0	DD	0	DD	0	DD	0	DD	
My child remembers large amounts of information about a topic that interests them (e.g. flags of the world, football teams, pop groups, etc.).	0	DD	0	DD	0	DD	0	DD	
My child is interested in following the route on a map on a journey.	0	SD	1	SA	0	SD	1	SA	
My child likes to create lists of things (e.g. favorite toys, TV programs, etc.).	0	DD	0	DD	0	DD	0	DD	
My child likes to spend time mastering particular aspects of his favorite activities (e.g. skate-board or yo-yo tricks, football or ballet moves).	0	DD	0	DD	0	SD	0	SD	
My child finds using computers difficult.	0	DA	0	DA	0	DA	0	DA	
If he had a sticker album, my child would not be satisfied until it was completed.	0	DD	0	DD	0	DD	0	DD	
My child enjoys events with organized routines (e.g. brownies, cubs, beavers, etc.).	0	SD	1	SA	0	SD	1	SA	
My child is not bothered about knowing the exact timings of the day's plans.	0	DA	0	DA	0	DA	0	DA	
My child would not enjoy working to complete a puzzle (e.g. crossword, jigsaw, word-search).	1	SD	0	SA	1	SD	0	SA	
Total	20		30		34		49		

Legend: SA – Strongly Agree; A – Agree; SD – Strongly Disagree; D – Disagree

Pretest and Posttest raw scores of Participant 4 in Empathy Spectrum Quotient

	Pretest				Posttest			
		Teacher	Parent			Teacher	Parent	
EMPATHIZING QUOTIENT								
My child likes to look after other people.	1	SA	0	SD	1	SA	1	SA
My child often doesn't understand why some things upset other people so much.	0	DA	0	DA	0	DA	1	SD
My child would not cry or get upset if a character in a film died.	0	DA	0	DA	0	SA	0	SA
My child is quick to notice when people are joking.	1	SA	0	SD	1	SA	1	SA
My child enjoys cutting up worms, or pulling the legs off insects.	1	SD	1	SD	2	DD	2	DD
My child has stolen something he wanted from his sibling or friend.	0	SA	1	SD	2	DD	1	SD
My child has trouble forming friendships.	0	SA	0	SA	1	SD	1	SD
When playing with other children, my child spontaneously takes turns and shares toys.	0	SD	0	SD	1	SA	2	DA
My child can be blunt giving opinions, even when these may upset someone.	1	SD	0	SA	1	SD	1	SD
My child would enjoy looking after a pet.	1	SA	1	SA	1	SA	2	DA
My child is often rude or impolite without realizing it.	0	DA	0	DA	1	SD	1	SD
My child has been in trouble for physical bullying.	1	SD	1	SD	1	SD	1	SD
At school, when my child understands something, he can easily explain it clearly to others.	0	SD	1	SA	1	SA	1	SA
My child has one or two close friends, as well as several other friends.	1	SA	1	SA	1	SA	1	SA
My child listens to others' opinions, even when different from his own.	0	SD	0	SD	1	SA	1	SA
My child shows concern when others are upset.	1	SA	0	SD	1	SA	1	SA
My child can seem so preoccupied with his own thoughts that he doesn't notice others getting bored.	1	SD	0	SA	1	SD	1	SD
My child blames other children for things that he himself has done.	1	SD	0	SA	1	SD	1	SD
My child gets very upset if he sees an animal in pain.	0	SD	0	SD	1	SA	1	SA
My child sometimes pushes or pinches someone that annoys him.	0	SA	0	SA	1	SD	1	SD
My child can easily tell when another person wants to enter into conversation with him.	0	SD	0	SD	1	SA	1	SA
My child is good at negotiating for what he wants.	0	SD	0	SD	1	SA	1	SA
My child would worry about how another child would feel if the child weren't invited to a party.	0	SD	0	SD	1	SA	0	SD
My child gets upset at seeing others crying or in pain.	1	SA	1	SA	1	SA	1	SA
My child likes to help new children integrate in class.	0	SD	0	SD	1	SA	1	DD
My child has been in trouble for name-calling or teasing.	0	SA	0	SA	1	SD	1	SD
My child tends to resort to physical aggression to get what he wants.	0	SA	0	SA	1	SD	1	SD
SYSTEMIZING QUOTIENT								
My child doesn't mind if things in the house are not in their proper place.	0	SA	0	SA	0	SA	0	SA
My child enjoys arranging things precisely (e.g. flowers, books, music collections).	1	SA	0	SD	1	SA	2	DA
My child is interested in the different members of a specific animal	1	SA	1	SA	1	SA	1	SA

category (e.g. dinosaurs, insects, etc.).								
My child is interested in different types of vehicles (e.g. types of trains, cars, planes, etc.).	1	SA	1	SA	1	SA	1	SA
My child does not spend large amounts of time lining things up in a particular order (e.g. toy soldiers, animals, cars).	0	DA	0	DA	0	DA	0	DA
If he had to build a Lego or Meccano model, my child would follow an instruction sheet rather than "ploughing straight in".	1	SA	1	SA	1	SA	1	SA
My child prefers to read or listen to fiction rather than non-fiction.	1	SD	2	DD	0	SA	0	SA
My child's bedroom is usually messy rather than organized.	1	SD	0	SA	1	SD	0	SA
My child likes to collect things (e.g. stickers, trading cards, etc.).	1	SA	1	SA	1	SA	1	SA
My child knows how to mix paints to produce different colors.	0	DD	1	SA	0	SD	1	SA
My child would not notice if something in the house had been moved or changed.	0	SA	0	SA	0	SA	0	SA
My child enjoys physical activities with set rules (e.g. martial arts, gymnastics, ballet, etc.).	1	SA	1	SA	1	SA	1	SA
My child can easily figure out the controls of the video or DVD player.	1	SA	1	SA	1	SA	1	SA
My child would find it difficult to list their top 5 songs or films in order.	0	DA	0	DA	0	DA	0	DA
My child quickly grasps patterns in numbers in maths.	0	DD	0	DD	0	DD	0	DD
My child is not interested in understanding the workings of machines (e.g. cameras, traffic lights, the TV, etc.).	0	DA	0	DA	0	DA	0	DA
My child enjoys games that have strict rules (e.g. chess, dominos, etc.).	0	DD	0	DD	0	DD	0	DD
My child gets annoyed when things aren't done on time.	0	SD	0	DD	0	DD	0	SD
My child knows the differences between the latest models of games-consoles (e.g. X-box, PlayStation, etc.) or other gadgets.	0	DD	0	DD	0	DD	0	DD
My child remembers large amounts of information about a topic that interests him (e.g. flags of the world, football teams, pop groups, etc.).	0	DD	0	DD	0	DD	0	DD
My child is interested in following the route on a map on a journey.	1	SA	1	SA	1	SA	1	SA
My child likes to create lists of things (e.g. favorite toys, TV programs, etc.).	0	DD	0	DD	0	DD	0	DD
My child likes to spend time mastering particular aspects of his favorite activities (e.g. skate-board or yo-yo tricks, football or ballet moves).	0	SD	0	DD	0	DD	0	DD
My child finds using computers difficult.	0	DA	0	SA	0	DA	0	SA
If he had a sticker album, my child would not be satisfied until it was completed.	0	SD	0	DD	0	SD	0	DD
My child enjoys events with organized routines (e.g. brownies, cubs, beavers, etc.).	1	SA	0	SD	1	SA	0	SD
My child is not bothered about knowing the exact timings of the day's plans.	0	DA	0	DA	0	DA	0	DA
My child would not enjoy working to complete a puzzle (e.g. crossword, jigsaw, word-search).	1	SD	0	SA	1	SD	0	SA
Total	20		16		35		37	

Legend: SA – Strongly Agree; A – Agree; SD – Strongly Disagree; D – Disagree

Appendix J

Screenshot of Written Consent from Scott Bellini and Simon Baron-Cohen

Scott Bellini – Autism Social Skills Profile

Fwd: New Submission: Contact Us Form

Inbox x



Bellini, Scott <sbellini@indiana.edu>

Jul 30



to me ▾

You have my permission to use the ASSP for research purposes.
Regards,
Scott

Begin forwarded message:

minlantin@gmail.com

Simon Baron-Cohen – Empathy Spectrum Quotient



Professor Simon Baron-Cohen <sb205@cam.ac.uk>

Sep 22



to Dervila, me ▾

approved with pleasure. the EQ is in the public domain so is free to be used/downloaded from our website, with due credit of the source.
best wishes, simon bc

On 2016-09-22 08:24, Dr. Dervila Glynn wrote:

Dear Armine,

I have copied in Professor Baron-Cohen here and he will be able to deal with your request.

Good luck with your thesis.

Very best, Dervila

----- Original Message -----

SUBJECT:
Contact Information/Email

DATE:
2016-09-22 00:18

FROM:
Armine Joy Lantin <minlantin@gmail.com>

TO:
coordinator@neuroscience.cam.ac.uk

Appendix K

Interview Questions

	P1	P2	P3	P4
How does the participant express his emotion?				
How does the participant react to someone else's feelings?				
How does the participant show empathy?				

Appendix L

Transcript of Interview

Interview with Teacher A about Participant 1 and 2.

Before the intervention

Researcher: Good morning, ma'am.

Teacher A: Good morning din.

Researcher: Simulan ko na po yung interview. May tatlong tanong lang po ako tungkol kina P1 at P2. Paano po magpakita ng emosyon si P1? Paano po sya pag galit? Pag masaya?

Teacher A: Pasan nya ang daigdig palagi. Hindi nga poker face eh, simangot talaga. Magsayaw o kumain, nakasimangot nya. Pagpasok pa lang nya, nakasimangot na sya. Ngingiti lang yan pag ala nyang uwian na.

Researcher: Si P2 po, paano sya kapag masaya? Pag galit?

Teacher A: Madali syang sumpungin. Pag sinumpong na yan, iiyak na sya tapos hindi na nya gagawin yung ipinapagawa ko sa kanya. Mahirap syang aluin. Masaya yan pag sasayaw na, Pero pag susulat, pahirapan.

Researcher: Ahh. Paano po magreact sa nararamdaman ng iba si P1?

Teacher A: Laging may sinasabi kahit hindi naman sya ang kinakausap. Para bang walang syang nagagawang mali. Pagsabihan mo ng isang beses, uulitin lang ulit. Hindi nakakatulong. Nang-aasar pa kasi yan. Wala syang pakialam kung umiyak pa lalo yung classmate nya.

Researcher: Kamusta naman po si P2 pagdating sa reaksyon nya sa nararamdamn ng iba?

Teacher A: Hindi nya naiintindihan bakit naiinis o masaya akung classmate nya. Nakatingin lang sya kapag may umiiyak. Minsan naman, umiiyak na yung classmate nya, gusto nya pang ayain maglaro tapos maiinis sya kasi ayaw makipaglaro sa kanya.

Researcher: Eh paano naman po sya nagpapakita ng empathy si P1? Halimbawa po, may nadapa, ano pong gagawin nya?

Teacher A: Nako, dededmahin or tatawanan lang nya. Hindi yan tatayo para tumulong. Hindi uso sa kanya na tumulong sa iba. Sarili lang nya.

Researcher: Si P2 po ba, tutulong kaya sya?

Teacher A: Pwedeng tumulong sya kung may nadapa pero mas uunahin nya pa rin sarili nya. Di ba nga, nag- aaya pa sya na maglaro dun sa classmate nyan may sumpong.

Researcher: Okay, ma'am. Tapos na po. Salamat po. Tatanungin ko po kayo ulit pagkatapos nun intervention.

Teacher A: Sure, no problem!

After the intervention

Researcher: Good morning po.

Teacher A: Good morning din.

Researcher: Ma'am, pagkatapos nung intervention, kamusta na si P1? May pagbabago po ba a pagpapakita nya ng emotion?

Teacher A: Si P1, Hindi na sya laging nakasimangot ngayon. Nagugulat ako na ngumingiti na sya. Hindi na sya si Mr. Simangot."

Researcher: Si P2 po, paano na magpakita ng emosyon?

Teacher A: Natutuwa ako na naalala nya yung breathing exercises na tinuro sa kanya kapag malapit na syang umiyak. Nakatulong yun kasi hindi na nadidisrupt yug klase. Nagugulat nga ako na bigla syang tatahimik tapos hihinga ng malalim. Natatandaan nya yung tinuro mo.

Researcher: Ayy, Salamat naman. Paano na po magreact sa nararamdaman ng iba si P1?

Teacher A: "Alam na nya kahit na hindi magandang ugali ang pananakit. Nanunulak pa rin minsan pag gusto talaga nyang kunin ang laruan pero nabawasan naman na. Tapos, tumutulong na sya sa mga kaklase nya. Tumatahimik na sya kapag pinapaglitan ko yung kaklase nya pero minsan nagrereact pa rin lalo na kung yung ayaw nyang kaklase yung napagsasabihan

Researcher: Eh si P2 po?

Teacher A: Ngayon, isang tingin ko lang alam na nya na kailangan nyang bumalik sa ginawa nya. Kahit papaano, naiintindihan na nya yung titig ko. Minsan makulit pa rin. Di naman agad magbabago yan.

Researcher: Ahh. Kamusta naman po ang pagapakita ng empathy ni P1? May napansin po ba kayong iba o ganun pa rin sya?

Teacher A: Nangunguna na syang mag-alok ng pagkain kapag nagtatanong ako kung sinong may extra. Minsan kasi may ibang gusto pa ng pagkain. Nakakatuwa.

Researcher: May pagbabago po ba kay P2 sa aspetong yan?

Teacher A: Hindi na sya ganun kadalas makialam kapag may kinakausap. Nakikinig sya o kaya naman tuloy pa rin sa paggawa ng task. Nakukuha na rin sya sa tingin. Hindi na kailangang paulit-ulit syang sabihan tulad noon. Nakikishare na rn yan ng pagkain. OInakamasaya talaga ako na naalala nya yung breathing exercise.

Researcher: Awww. Salamat po, ma'am. Tapos na po. Salamat po ulit.

Teacher A: Walang anuman, sa uulitin!

Interview with Teacher B about Participant 3 and 4

Before the intervention

Researcher: Good afternoon, ma'am.

Teacher B: Good afternoon din.

Researcher: Simulan ko na po yung interview. Magtatanong po ako tungkol kina P3 at P4. Tatlong tanong lang po. Uannag tanong, paano po magpakita ng emotion si P3?

Teacher B: Naka poker face lang yan palagi. Hindi nya naipapakita yung tamang emosyon. Minsan nga kahit pinagsasabihan ko sya, ningingitian pa ako. Tapos kapag nainis sya sa akin, sisigaw sya bigla o kaya sisipain yung upuan nya.. Kahit pinapagalitan ko yan, ningingitian lang ako. Kung hindi man, dadabugan pag wala sa mood. Ngayon, kahit papaano ay nagbabago-bago na. Nagmumukhang malungkot na kapag napagsasabihan. Yumuyuko na ang ulo imbes na magdabog"

Researcher: Si P4 po, paano naman po sya mag express ng emosyon?

Teacher B: Nako, yun. Blank stare lang mapapala mo sa kanya kahit na binabati mo sya. Parang hindi nya naiintindihan na nakangiti ka kasi masaya ka. Tapos di mo rin maiintindihan kung masaya o malungkot sya kasi isa lang mukha nya. Para bang wala syang ibang alam na emosyon bukod sa pagtitig lang.

Researcher: Ahh. Paano naman po nag re react sa damdamin ng iba si P3? Halimabawa po, kapag may naiyak o natawa, ano pong ginagawa nya?

Teacher B: Hindi nya pinapansin mga classmates nya kahit na sobrang lakas na nung tawa nila. Kapag may umiiyak, deadma lang din sya. Minsan naman, tatawanan nya yung umiiyak. Iba-iba rin kasi ang mood ng batang yan.

Researcher: Kamusta naman po si P4 sa ganan?

Teacher B: Kahit ako ang kumakausap sa kanya, hindi sya tumitingin. Kapag nararamdaman nyang nakatingin sa kanya katabi nya, iiwas yan ng tingin o kaya titingin sa baba o sa hawak nyang lapis. Lagi kong sinasabihan na tumingin. Hindi nya talaga pinapansin yung iba, sarili lang nya. Kahit may umiiyak o tumatawag sa kanya, di nya papansinin. Tuloy lang sya sa ginagawa nya.

Researcher: Ahh. Ganun po ba. Paano naman po sila magpakita ng empathy? Si P3 po muna.

Teacher B. Parang hindi. Minsan kasi, may nakabasag ng tumbler dito, hindi na nga nya tinulungan, tinawanan pa nya. Napahiya tuloy lalo yung kaklase nya. Para bang entertainment sa kanya kapag may nangyayaring aksidente sa iba. Minsan nga, tumititig yan dun sa isa nyang classmate na makalat kumain. Nakatitig talaga sya sa bibig, Na-conscious tuloy yung classmate kaya di na lang tinapos yung pagakin.

Researcher: Ahh. Si P4 naman po?

- Teacher B: Nanunulak o nanghahampas yan ng mukha o likod kahit na walang ginagawa sa kanya. Lagi kong sinasabi na hindi yun maganda pero parang tuwang tuwa sya pag nakikita nyang nagugulat yung nasasaktan nya.
- Researcher: Okay, ma'am. Tapos na po. Salamat po. Tatanungin ko po kayo ulit pagkatapos nun intervention.
- Teacher B: Okay, sige!

After the intervention

- Researcher: Good afternoon, ma'am. Magtatanong lang po ako ulit tungkol kina P3 at P4, kung may pagbabago po ba pagkatapos ng intervention
- Teacher B: Good afternoon din. Sige, simulant na natin.
- Researcher: Kamusta na po si P3? Paano na po sya nagpapakita ng kanyang emosyon?
- Teacher B: Ngayon, kahit papaano, nag-iiba na ang mukha nya depende sa nararamdaman nya. Nangiti na kung masaya sya, sumisimangot pag naiinis na. Mas maalwan sa akin yung ganun kasi mas alam ko kung anong nararamdaman nya.
- Researcher: Si P4 po, paano po magpakita ng emosyon?
- Teacher B: May pagbabago naman sa kanya kahit paano. Nag-iiba iba na rin ng mukha depende sa sitwasyon. Mas nakakusap ko na rin sya kasi natango sya o nailing kapag tinatanong ko ng yes/no questions.
- Researcher: Paano na po nagrereact sa emotion ng iba si P3?
- Teacher B: Loner lang yan dati. May sariling mundo. Ngayon nakikisali na. Dagdag ingay pero ang mahalaga nakikilaro na sya. Nakikisaya na sa mga kaklase. Tapos mas nakakausap ko na sya ngayon kasi sumasagot na sya. Hindi na sya yung nakatitig lang sa akin. Napansin ko rin na nagsisimula na syang makilaro sa mga kaklase nya. Minsan mag-isa pa rin sya habang kumakain, minsan naman nakikisali na.
- Researcher: May pagbabago naman po ba kay P4?
- Teacher B: Nagsisimula na syang tumulong sa classmates nya. Hindi na sya ganun nagrereact kapag kinakausap ko classmate nya. May isang beses, tinulungan nya yung classmate nya na pulutin yung crayons sa sahig. Nagulat ako kasi madalas deadma sya."
- Researcher: May Nakita po ba kayong pagbabago kung nagpapakita na po ba ng empathy si P3?
- Teacher B. Nako, meron! Natutuwa ako na nag-ooffer na sya ng pagkain nya kahit na hindi ko naman sinasabi. Nakakaramdam na sya kahit paano. Siguro naiintindihan nya na hindi okay ang pakiramdam ng nagugutom pa.
- Researcher: Eh kay P4 naman po?
- Teacher B: Masaya ako na hindi na sya nananakit. Ang hirap rin kasing magpaliwanag sa

mga taong hindi nakakaintindi ng sitwasyon nya.. Tapos isang beses nagulat ako na pumayag sya na may kasama syang magtingin sa mga libro. Madalas kasi gusto nya na sya lang ang titingin sa pictures.”,

Appendix M

Observation Guide

	P1	P2	P3	P4
EXPRESSING EMOTIONS Use conventional facial expressions, gestures and body language to express his feelings and communicate				
REACTING TO SOMEONE ELSE'S FEELINGS Understand what other people's facial expressions and body language mean				
SHOWING EMPATHY Understand why other people different kinds of emotions such as happy, sad, afraid, surprised, guilty and embarrassed.				

Appendix N

VMRP Intervention

Overview:

VMRP Intervention is a program that aims to identify and improve the level of empathy among children with autism. This program utilizes two strategies: video modeling and role playing.

This includes five topics (scenarios) which consists of one video and one role playing guide. Each activity can either start with the video or role playing as the sequence does not affect the effects of the program. This could be implemented to one student in a classroom within 30 minutes to an hour three to four times a week and could be conducted by either a regular or SPED teacher. There is an assessment for every scenario to monitor the developments of the child in connection to the level of empathy. Materials and procedures are explained to have a smooth implementation of the intervention.

Video Modeling Procedure:

SETTING: A quiet classroom

MATERIALS: Any gadget that can play videos, notebook for recording of responses

TIME FRAME: 15 - 30 minutes

1. Tell the participant about the target behavior.
2. Play the assigned video showing target behavior in a social situation. Let the participant just watched the video.
3. Play again the video and let the participant copy the actions along with the model. Give prompts as the student copies the target behavior.
4. After viewing, ask the participant what happened in the video to determine if the participant understood what was just watched.
5. Record the responses of the participant using the table format.

Role Playing Procedure:

SETTING: A quiet classroom

MATERIALS: Role playing guide, notebook for recording of responses

TIME FRAME: 15 - 30 minutes

1. Show the picture of the assigned scenario.
2. Ask “What is happening in the photo?”
3. Give examples of other scenarios related to the picture if the answer of the participant is not related to the question. (script is provided)
4. Ask questions to help the participant have an idea of the target behavior.
5. Tell the participant how to deal with the social situation.
6. Model the appropriate response/ action then ask the participant to practice the behavior.
7. Ask “How did you feel after doing the activity?”
8. Record the responses of the participant using the table format.

Assessment Procedure:

SETTING: A quiet classroom

MATERIALS: Autism Social Skills Profile and Empathy Spectrum Quotient

TIME FRAME: One to three days before the intervention

1. Read the instructions for each scale.
2. Answer this before and after the implementation of the intervention.
3. After answering the scales before implementing the intervention, input the name of the child on top of the level of empathy he/she is currently in in the Level of Empathy diagram.
4. After the intervention, input again the name of the child to determine if there was an improvement on level of empathy after the intervention.

VMRP Procedure:

SETTING: A quiet classroom

MATERIALS: Any gadget that can play videos for video modeling, role playing guide,

notebook for recording of responses

TIME FRAME: 30 minutes to one hour for the intervention

1. Assess the participant using ASSP and ESQ to determine the level of empathy of the participant before the intervention.
2. Ask the participant to sit still and listen.
3. Refer to video modeling procedures or role-playing procedures. Either of the intervention could be done first.
4. Assess the participant using the same assessment tools after four weeks of intervention.

Teacher's Questions	Student's Responses

Expressing Emotions

Objective: To follow social rules by expressing emotions appropriately

Profile:

Name of learner:

Name of teacher:

Location:

Date of Pre-Assessment:

Date of Post Assessment:

Level of Empathy Pre-Intervention



Teacher observations:

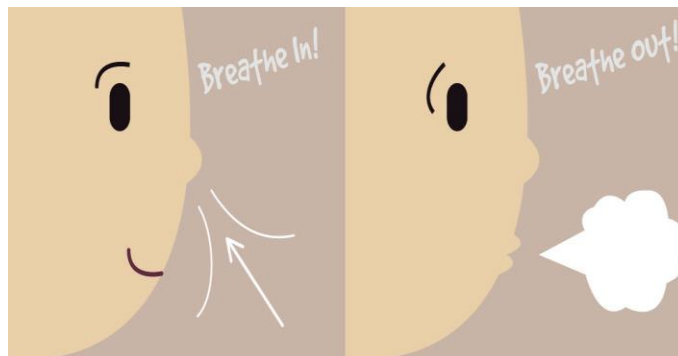
Teacher’s Questions	Student’s Responses

Video: Helping a friend



Role Playing Guide: Getting frustrated

Illustration:



Script:

Introduction/Briefing

Teacher	Child
shows the picture of the target behavior	
“What is happening in the picture?”	
“Did something similar happen to you?”	
“Today we are going to talk about how you should react when you get frustrated.”	
“There are times where you get frustrated because you did not get what you want. You would like to throw things, hit people, yell, and cry.”	“I might get into trouble.”
“If you act that way, what do you think will happen?”	“My classmates might not want to be my friends anymore.”
“It is okay to get frustrated but do not hurt others, do not hurt yourself, and don’t break things.”	

Demonstration

“Let us practice what you can do when you get frustrated or mad.”	
“When you are mad, you can take a deep breath, drink water or take a walk.”	“I can take a deep breath ten times.”
“What can you do when you get frustrated?”	“I can take a walk.”
“You can tell people around you that you are frustrated at the moment.”	“I can drink water.”
“What will you tell people around you when you are frustrated?”	“I am frustrated right now.”
“I accidentally broke your pencil. What will you do?”	“I can take a deep breath ten times.”
	“I can take a walk.”
	“I can drink water.”

Debriefing

“How did you feel while doing the activity?”	“I feel _____ when I _____
“Why?”	because_____”

Level of Empathy Post Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Reacting to Someone Else’s Feelings

Objective: To respond to someone else’s feelings and thoughts in an appropriate manner

Profile:

Name of learner:

Name of teacher:

Location:

Date of Pre-Assessment:

Date of Post Assessment:

Level of Empathy Pre-Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Video: Asking for permission



Role Playing Guide: Recognizing personal space

Illustration:



Script:

Introduction/Briefing	
Teacher	Child
shows the picture of the target behavior	
“What is happening in the picture?”	
“Did something similar happen to you?”	
“Today we are going to talk about how you should respect the personal space of your classmates.”	
“How could we show respect to our classmates?”	“I can show respect by not getting into my classmates’ personal space.”
“When you get into the personal space of your classmate, what do you think will happen?”	“My classmate might get upset.” “My classmate might feel uncomfortable.”
“There are times where your classmate does not want to be so close to you. “	
“Everyone has different comfort levels when it comes to personal space. When you respect the personal space of your classmate, how will he/she feel?”	“My classmate will feel happy.”
Demonstration	
“Let us practice respecting personal space.” When it is story time, you should not sit too close to your classmate. There should be at least one foot distance between you and your classmate. Will you please show it to me?	“I will step back and leave some space.”
“Look at the facial expression and body language of your classmate to see if he/she is uncomfortable.”	
“Your classmate might be turning his/her head, backing away, crossing his/her arms, or frowning. *demonstrate all of these*	
“Now it is your turn. “	
“Show me how you will respect personal space when you are lining up; when you have story time; when you are eating”	“I will leave an arm’s length between people when we talk.”
Debriefing	
“How did you feel while doing the activity?”	“I feel _____ when I _____
“Why?”	because_____”

Level of Empathy Post Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Showing Empathy

Objective: To communicate with others by displaying awareness of feelings and thoughts of other people

Profile:

Name of learner:

Name of teacher:

Location:

Date of Pre-Assessment:

Date of Post Assessment:

Level of Empathy Pre-Intervention



Teacher observations:

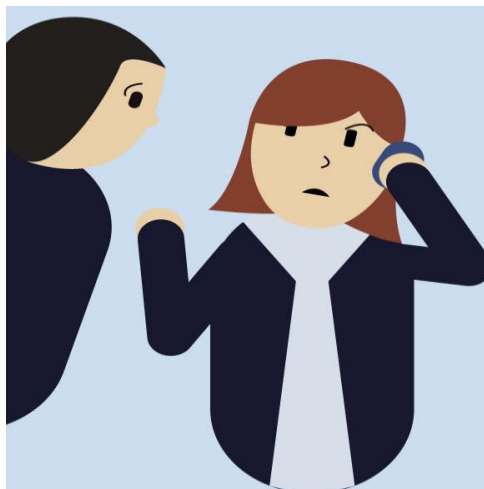
Teacher’s Questions	Student’s Responses

Video: Encouraging a classmate



Role Playing Guide: Not interrupting a conversation

Illustration:



Script:

Introduction/Briefing

Teacher	Child
shows the picture of the target behavior	
“What is happening in the picture?”	
“Did something similar happen to you?”	
“Today we are going to talk about how you should wait for your turn to speak in a conversation.	
“How could we not interrupt a conversation?”	“I will keep quiet and wait for them to finish talking.”
There are times where you want to say something but others are still talking. It is better if you will keep quiet and wait for your turn.	
When you act respectfully, people will want to talk to you.	
What will happen if you act respectfully?	“People will want to talk to me.”

Demonstration

“Let us practice not interrupting a conversation.”	
“If you want to say something to your friend or teacher, say excuse me.” *demonstrate the behavior*	
“I am talking on the phone and you want to say something to me, what are you going to do?”	“I will say excuse me.”

Debriefing

“How did you feel while doing the activity?”	“I feel _____ when I _____
“Why?”	because _____”

Level of Empathy Post Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Understanding Other People’s Facial Expression and Body Language

Objective: To recognize of the social cues of other people

Profile:

Name of learner:

Name of teacher:

Location:

Date of Pre-Assessment:

Date of Post Assessment:

Level of Empathy Pre-Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Video: Sharing food



Role Playing Guide: Taking turns



Script:

Introduction/Briefing

Teacher	Child
shows the picture of the target behavior	
“What is happening in the picture?”	
“Has something similar happened to you?”	
“Today we are going to talk about how you should take turns when playing with your friends”.	“We should take turns when playing.”
“What is a way to get your friends to play with you?”	
“When you do not take turns with your friends, what do you think will happen?”	“My friends might get sad.”
“Sometimes, it is your turn to go first. Sometimes your friends go first.”	
“It is important to share and wait for your turn. When you share and wait for your turn, what do you think will your friends feel?”	“My friends will feel happy.” “My friends will like playing with me.”

Demonstration

“Let us practice taking turns. “	
“These are my crayons. I will use it first because it is my turn. You will wait while I take my turn. What will you do while I take my turn?”	“I will wait for my turn.” “I will read a book.” “I will draw using my pencil first.”
“Now it is your turn.”	
“You are doing great in waiting for your turn.”	

Debriefing

“How did you feel while doing the activity?”	“I feel _____ when I _____
“Why?”	because_____.”

Level of Empathy Post Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Understanding Other People’s Different Kinds of Emotions

Objective: To connect with others by understanding different emotions such happiness, sadness, guilt, fear, and embarrassment is experienced differently by other people.

Profile:

Name of learner:

Name of teacher:

Location:

Date of Pre-Assessment:

Date of Post Assessment:

Level of Empathy Pre-Intervention



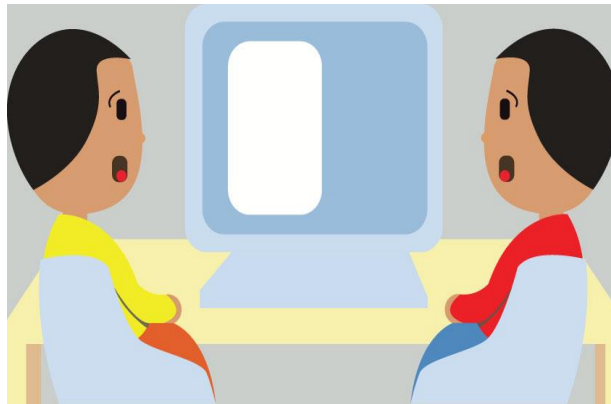
Teacher observations:

Teacher’s Questions	Student’s Responses

Video: Sharing school supplies



Role Playing Guide: Engaging in a conversation



Script:

Introduction/Briefing	
Teacher	Child
shows the picture of the target behavior	
“What is happening in the picture?”	
“Did something similar happen to you?”	
“Today we are going to talk about how you can engage in a conversation with your classmates.”	
“There are times where you want to talk about your favorite thing all day. It is important that you let others tell about their favorite thing.”	
“If you talk too much, how will your classmates feel?”	“My friends will not want to talk to me anymore.”
“It is important to let your friends to have a chance to talk so they will have chance to share what they like.”	
“If you let your friends talk, how will he/she feel?”	“My friends will feel happy.”
Demonstration	
“Let’s practice engaging in a conversation.”	
“When someone is talking, you should listen and wait for your turn to talk and give comments to show that you are listening”	
“I will tell you about my favorite animal, elephant.”	
“Did you know that elephants can live up to 70 years? Because they are too big, they cannot jump. They purr like cats when they talk to other elephants. They also like hugging by wrapping their trunks together.”	
You can say “cool” “wow” “amazing” “really”	“Cool!” “Wow!” “Amazing!” “Really?” “That is great!”
“What will you say when someone is finished telling you something?”	
“How do you think your friend will feel when you give comments?”	“My friend will be happy.”
“Now, it is your turn to tell me something.”	
Debriefing	
“How did you feel while doing the activity?”	“I feel _____ when I _____
“Why?”	because_____”

Level of Empathy Post Intervention



Teacher observations:

Teacher’s Questions	Student’s Responses

Appendix O

Rubric – Video Animation

Video Animation Rubric

Name: _____

Affiliation: _____

	4	3	2	1	
Content	The content includes a clear message and is creative, compelling and clearly written. It conveys an extremely clear message.	The content is accurate and contributes to understanding the project's main idea. It conveys a clear story.	The message was not clearly presented by the content. The main idea is not supported by all of the supporting information	Central theme is missing. Point of view is not clear and the sequence of information is disorganized. The message is not clear.	
Coherence and Organization	All information is well-defined, suitable and precise. The sequence is logical.	Storyline is evident. Information is well-defined, suitable and precise.	Creating a storyline was evident. Some information is unclear.	Storyline is not clear and has no sensible sequence.	
Animation and Design	The animation moves smoothly from one scene to another. It was well-edited. Voices, music and sound effects are well used and are relevant to the story.	Animation follows the story. Editing is not done as well as it should have been. Audio and other enhancements were applied, but not enough.	The animation is jerky and choppy – movement is not smooth.	Animation is extremely choppy. It has no transitions or audio support of any kind.	
Total Score:					

SIGNATURE ABOVE PRINTED NAME

Appendix P

Rubric – Role Playing Guide

Name: _____

Affiliation: _____

	4	3	2	1	
Coherence and organization	Script is accurate and thorough. It presents a precise and logical sequence.	Script is predominantly accurate and thorough. It presents a clear and logical sequence.	Script is slightly accurate and thorough. It shows some sequence	Script is incomplete and inaccurate. It shows little order.	
Content	Topic is clear and concise. Example that was given is clearly related to the topic.	Topic is clear. Example that was given is related to the topic.	Topic is fairly clear. Example that was given was fairly accurate.	Topic is unclear. Examples that were given were insufficient.	
Total Score:					

SIGNATURE ABOVE PRINTED NAME

Appendix Q

Rubric – Illustration

Name: _____

Affiliation: _____

	4	3	2	1	
Accuracy	All illustrations have a strong connection to the topic and compliment the main idea. Simple and very easy to understand what scene is being illustrated	There is a connection to the unit. Simple but not easy to tell what part of the story is being illustrated	The connection is weak, but there. Complex and difficult to tell what scene is being illustrated	Barely makes a connection to the topic. Impossible to tell what part of the story is being illustrated	
Visual Appeal	The drawing is remarkably appealing in terms of design, layout and neatness. Outstanding use of color, design, and space.	The drawing is appealing in terms of design, layout, and neatness. Adequate use of color, design, and space.	The drawing is tolerably appealing though it may be a bit sloppy. Inappropriate use of color, design, and space.	The drawing is distractingly messy or very poorly designed. Little attempt to use color, design and space appropriately.	
Total Score:					

SIGNATURE ABOVE PRINTED NAME

Appendix R

Validator's Scores

Video Animation

	Content	Coherence and Organization	Animation and Design
Validator 1	4	4	4
Validator 2	4	4	4
Validator 3	3	2	4
Average	3.67	3.33	4

Role Playing Guide

	Coherence and organization	Content
Validator 1	4	4
Validator 2	4	4
Validator 3	3	4
Average	3.67	4

Illustration

	Accuracy	Content
Validator 1	4	4
Validator 2	4	4
Validator 3	3	3
Average	3.67	3.67

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- June 2018 –
Present **TEACHER I, PAYAPA ELEMENTARY SCHOOL**
Teaching kindergarten
- April 2015 –
October 2017 **ACTIVITY FACILITATOR, PLAY INNOVATIONS INC.**
Facilitated role playing activities among children ages 3 to 17 years old
and managed assigned establishments
- May 2013 –
April 2015 **SUBJECT TEACHER, AGUINALDO INTERNATIONAL SCHOOL**
Taught Civics, Science, ICT, and English to second graders
- June 2012 –
May 2013 **READING COACH, THE LEARNING LIBRARY**
Taught children from ages 3-13 on how to read and develop love for
reading
- April 2011 –
March 2012 **SUBJECT TEACHER, PAREF SOUTHCREST SCHOOL, INC**
Taught Language 7, Geography 7, Composition I, Composition II, and
Asian History

EDUCATION

- 2012 –
2019 **PHILIPPINE NORMAL UNIVERSITY**
Master of Arts in Education major Special Education – Intellectual
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- 2007-2010 **DE LA SALLE UNIVERSITY**
Bachelor of Secondary Education major in English. Dean's List 1st Term -
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- 2003-2007 **FIRST ASIA INSTITUTE OF TECHNOLOGY AND HUMANITIES**
High School Diploma, March 2007

EXAM TAKEN

September 2010 **LICENSURE EXAMINATION FOR TEACHERS**
 Passed the Licensure Exam for Secondary Teachers

RESEARCH PAPER PREPARED

March 2010 **DEVELOPING THIRD YEAR HIGH SCHOOL STUDENTS' INTERPRETIVE LEVEL COMPREHENSION OF LITERARY TEXTS THROUGH COLLABORATIVE ANNOTATION**

A reading strategy that engaged students in a close reading and encouraged them to generate and respond to interpretive questions through interactive group annotation activity

September 2009 **EPISTEMOLOGICAL BELIEF SCALE ON COOPERATIVE LEARNING**

A belief scale that determined the various perceptions of students that positively/negatively influence their performance in group works.

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 Vanessa Bicomong – The Learning Library
 Abigail Saria-Rice – De La Salle University Manila