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Using Peer-Mediation to Provide Inclusion for Students with Moderate to Severe Autism Spectrum Disorders

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USING PEER-MEDIATION TO PROVIDE INCLUSION FOR STUDENTS WITH MODERATE TO SEVERE AUTISM SPECTRUM DISORDERS

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Abstract

Students identified with low-functioning Autism Spectrum Disorders (ASD), in center-based programs, have minimal opportunities for inclusion in the general education setting and are often emotionally and socially excluded from their peers. Peer-mediated instruction (PMI) is a social skills intervention that trains neurotypical peers to be peer buddies for students with ASD. Research highlights PMI as an evidenced-based practice that increases social communication skills in students with ASD and develops empathy, patience, tolerance, and other character traits for neurotypical peers. The application of this project applies PMI practices in an elementary school to increase the social communication needs and promote inclusion through building relationships for students with low functioning ASD.

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CHAPTER I: INTRODUCTION

Imago Dei is Hebrew for "The Image of God". Psalm 139 informs us that each person is knitted and formed in the womb, fearfully and wonderfully made, based upon the Genesis account of being made in the image of God. Therefore, as Anderson (2012) notes, our value as human beings is rooted in the truth that we *are* God's image bearers. Our world is also fallen. Image bearers are subjected to disease, suffering, sickness, and disabilities. However, being image bearers transcends the physical limitations of our earthly bodies and reminds us that each person is uniquely endowed with honor because they bear the very image of God.

For years, image bearers with disabilities were isolated and segregated. This tragedy led to the dehumanization of people with disabilities and education was not accessible for them. As we now stand in an educationally driven age where educators are trained specifically to teach students with disabilities, it is shocking to know that it was not until 1975 when President Ford signed into law the Education for All Handicapped Children Act (Public Law 94-142), now known as Individuals with Disabilities Education Act (IDEA). This life-honoring, image-bearing movement happened *only* forty-five years ago. This law, though recent in time, has brought bright hope for students with disabilities who are educated alongside their peers.

The law requires that students receive a Free and Appropriate Public Education (FAPE) in the least restrictive environment (LRE). In the 1980's, as inclusive settings began gaining acceptance, partnerships across special and general education practices began to cross traditional teaching boundaries when a concept called co-teaching emerged (Cook, Friend, Hurley-Chamberlain, & Shamberger, 2010). Co-teaching occurs when a special education teacher and a general education teacher teach together to instruct a mixed classroom that includes both students with Individual Education Plans (IEP) and non-disabled students. Co-teaching has

intensified and is the primary vehicle used to provide support and instruction that meets legislative expectations for students with disabilities thanks to the No Child Left Behind Act of 2001 and the reauthorization of Individuals with Disabilities Education Act of 2004, (Cook, et al., 2010). However, some students require more intensive special education services. These students are placed in separate classrooms from 0% to 100% of the school day. The placements are based on designated federal levels based on the amount of time students who are disabled spend without their disabled peers. Center-based students who spend 60% or more of their day in the special education classroom fall into the Federal Setting III category. The times they are educated with same-aged peers is reduced to gym, art, music, lunch and/or recess where they are usually accompanied by a paraprofessional.

I began my professional career as a special education teacher working in a Federal Setting III program for students with ASD at a low-income, suburban high school. ASD is a neurological disorder that impairs social interaction, communication, and includes restricted, repetitive, or stereotyped behaviors or interests (Minnesota Department of Education, n.d.).

Students on my caseload were in the special education classroom 60% or more of their day. Most of the students attended the general education classroom for two electives. During the electives, they were accompanied by a paraprofessional. During lunch, the students typically clustered in a group together at a separate table or ate lunch in another environment, as the cafeteria was too overstimulating for them.

Teaching a social skills class, I noticed these students attempted to practice social interactions with their peers who also struggled socially. I implemented culturally responsive protocols, such as “pair and share” while the students stared at each other blankly. Even with visuals and other evidenced-based techniques, the students struggled to have simple

conversations together. As the teacher, I could model appropriate conversational elements, but my influence was much less enforcing than the peer model.

My students lacked social skills, had limited opportunities for inclusion, and struggled to build relationships. They spent much of the day with peers who were poor social skills models. Although a common misconception is that people with ASD do not desire relationships, this is a myth. Gleeson, Jones, & Williams (2017) provided research findings to show that young people desired to fit in with their peers. An analysis of students with ASD found that the students wanted friendships, but they reported they did not know how to fit in. Research demonstrated that when vulnerable students had friends, they were less likely to be bullied; they felt less anxious about school; and they also felt more positive about themselves (Gleeson, et al., 2017). I knew my student's federal setting was in their best interest to support their learning needs. They did not have the skills necessary to attend mainstream classes. Electives were challenging for them even with the modifications and supports they received. Therefore, I questioned how I could help the students be included – not just in a physical sense, but in a relational sense, while continuing to provide them direct instruction in social skills.

Our school day incorporated a homeroom once a week for twenty minutes. Freshmen classrooms had an upper-classmen come in, complete activities with the students, and ensure they were becoming acquainted with the demands of high-school. Although my classroom had mixed grades, I had an upper-class student come in to help support my students. The students who participated, volunteered, but also were referred by classroom teachers. They were upstanding students with solid academic skills. As the students in my classroom built a relationship with this student who visited once a week, I wondered why neurotypical students could not come *into* the special education classroom to be peer buddies and to support students in

the areas of social and emotional learning? Why was inclusion primarily thought of as students with special needs going *into* the general education classroom? I previously worked as a paraprofessional in various districts that implemented peer-buddy programming, so I began to read about other programs and partnerships that utilized peer-buddies.

The research highlights many benefits of Peer-Mediated Instruction (PMI) (Gevarter, et al., 2014). PMI is an evidenced-based practice in which neurotypical peers help teach social skills. Peers are trained and placed into groups with a student who has an autism spectrum disorder. Peers model appropriate social behaviors and may prompt or redirect inappropriate behaviors demonstrated by their ASD peers. They also reinforce positive behaviors. Peer buddies is another common term for this intervention.

PMI helps increase social communication (Cox, et al., 2015) behavior (Clarke & Duda, 2018), and academics (Ledford & Wehby, 2015) for students with ASD. Among the benefits for students with ASD, PMI also benefits neurotypical peers (Garrison-Harrell et al., 1998).

Forty-five years ago, a life-changing law mandated that the educational system ensure that students with disabilities have access to a free and appropriate public education (FAPE). This law supports the dignity of children with disabilities and calls out the rights they have being made in the image of God. Forty years ago, the concept of co-teaching began, evolving in the past twenty years (Cook, et al., 2010). Today, more research is needed to understand how PMI is beneficial for students while also providing a practical means of inclusion for students in a Federal Setting III category. While students with ASD may be physically included, they are often emotionally and socially excluded (Gleeson, et al., 2017). Students with low-functioning ASD are even more excluded as they lack the skills necessary to participate in mainstream classes.

The question guiding this thesis project is: How can implementing Peer Mediated Instruction benefit both low functioning students with ASD and their non-disabled peers? The research findings will be applied to design a programming based on a PMI model to create emotional and social inclusion for ASD students in a federal setting III program. The peer-buddies will build relationships within the special education classroom with the hope of expanding the relationships into general education settings.

CHAPTER II: LITERATURE REVIEW

To locate the literature for this thesis, searches of ProQuest, EBSCOhost, SAGE Publications, PUB med central, Education Database, Elsevier ScienceDirect Journals, and Springer were conducted for publications of 2005-2020. This list was narrowed by only reviewing published empirical studies articles from peer-reviewed journals that focused on autism, inclusion, and peer-mediated interventions found in journals that addressed the guiding questions. The key words used in these searches were "autism and inclusion", "peer-mediation for autism spectrum disorder", "autism and peers", "stakeholders and inclusion and autism", and "autism and bullying". The structure of this chapter is to review literature on peer-mediation for students with autism in seven sections in this order: Social Skills in Students with ASD, Using Peer Mediated Instruction (PMI), PMI and Behavior, PMI and Academics, PMI and Neuro-Typical Peers, PMI in Multiple Contexts, and PMI and Barriers to Inclusion

Social Skills in Students with ASD

Many students with autism show deficits in social communication, language, and/or repetitive/restricted behaviors. These challenges impact students' abilities to build relationships and engage in interpersonal skills needed for daily living. While we often think of special education as targeting student's academic needs, students with autism have many barriers that affect interpersonal relationships, which are often direct hindrances to academics or to the individual's quality of life as relationships play a key role. This section reviewed literature that showed how students with autism demonstrate a need for specific social skills interventions beyond situational classroom instruction.

Gulsrud, Kasari, Locke, & Rotheram-Fuller (2010) researched inclusive practices, listed both pros and cons, and argued that the cons that existed in inclusive settings, such as over-

stimulating environments and lack of resources, impacted the successful integration of students with ASD into social networks. To determine the accuracy of the teacher's reports for social interactions, the researchers conducted a study to determine the accuracy of student and teacher social reports. They hypothesized that students with ASD would have lower quality friendships and fewer friendship nominations. They analyzed the relationship between observations and relationship surveys and hypothesized that the observations would indicate that students without social networks would be socially less engaged on the playground at an elementary school.

They prescreened candidates and 60 elementary school students with ASD were selected to participate in the study along with 815 typically developing students. A subsample was selected to match age, gender, grade, and classroom. Students and teachers completed different surveys. Students filled out the Friendship Qualities Scale (FQS) and a friendship survey that identified friends they enjoyed and did not enjoy. Teachers completed a Teacher Perception Measure and rated student's social skills and the teacher's perceptions of the student's classroom conduct. Additionally, the Playground Observation of Peer Engagement (POPE) was completed in which observers coded students play during recess for two separate recess times (Gulsrud, et al., 2010).

When analyzing the social network, students with ASD had significantly poorer centrality compared to their peers. In the area of rejections, students rated whom they did not like to hang out with. There was no significant difference between students with ASD and their peers. Reciprocal friendships were significantly lower for students with ASD and students with ASD who also reported significantly lower quality of friendships. The researchers found no correlation between active engagement on the playground and peer nominators of social network. However, Gulsrud et al., (2010) noted that students with ASD, despite their social status, were often

unengaged on the playground. The researcher's conclusion was that students with ASD had greater success in relationships with their peers when more supports were in place to help the children learn to engage with their peers (Gulsrud et al., 2010).

Students with ASD may be more predisposed to bullying from other students due to their social communication deficits. Cappadocia, Pepler, & Weiss (2011) completed a study that examined parental reports of their children with ASD who were bullied and then explored the association between being bullied and mental health. Participants spanned five-21 years and were enrolled in public schools. Parents completed a 30-minute survey that assessed: demographics, psychological distress, bullying incidences, problem behaviors, and an assessment of autism severity. Results from the survey indicated that students with ASD had higher rates of being bullied than children in the general population. Students who were bullied were 11 times more likely to have observable mental health problems (Cappadocia et al., 2011).

Peer mediation is a powerful intervention because it not only teaches students with autism valuable social skills, it also teaches typically developing peers valuable character traits.

Gleeson, Jones, & Williams (2019) completed a qualitative metasynthesis that examined how students with ASD in mainstream settings made sense of themselves. Criteria for their research included school aged (five-21 years) participants to be on the autism spectrum. Articles needed to be focused on or included the student's own account or views, articles needed to use qualitative methods, and they needed to be published between 2000-2014 in a peer-reviewed journal or book. They analyzed the synthesized findings and found that students with ASD viewed themselves as different than typically developing peers. Understanding themselves as different, contributed to the difficulties associated with ASD. Their findings also indicated that students with ASD felt they had limited accessibility to the school environment due to factors

that disrupted their sensory systems. They concluded that the students' sense of being different heightened their risk for developing low self-esteem and increased their mental health problems.

These findings revealed the importance of early intervention to address social skills deficits to promote ASD students sense of self-worth as they navigate school.

Using Peer Mediated Instruction (PMI)

As noted above, students with autism have deficits in social communication. Research indicated that students with ASD improved skills in all areas when interventions such as direct instruction, social stories, video modeling, and PMI were implemented. A combination of interventions was often the most effective. This section will review literature focused on the effectiveness of Peer Mediated Instruction (PMI).

To determine the efficacy of treatments, Cox, et al. (2015) completed a comprehensive study of interventions that combined peer training with direct instruction for social communication, language performance, adaptive communication skills and teacher ratings of young children with moderate to high-functioning ASD. The research questions were four-fold: 1) What were the noted effects for social communication in non-treatment and generalization probes, for children who received intervention, 2) What were noted effects for communicative acts during treatment sessions and were differences in session outcomes noted based on one versus two years of intervention, 3) What effects were noted on standardized measures of language and adaptive communication performance, and 4) Did teachers impressions of children's social communication and interactions with peers improve as a result? A mixed-methods study was conducted. Cox et al., (2015) designed two groups, an experimental group, and a comparison group. Assignment was random. Peer special network groups met three times per week to teach social and communication skills by playing games using age-appropriate

tabletop activities. Each skill was targeted for four to five weeks before a new skill was added. The sessions were 25-50 minutes and included: adult-led discussions and definitions, child-adult practice, child-peer practice with adult feedback, followed by peer prompting, teacher reinforcement, and feedback. The summary of results showed that children in the peer network interventions gained more growth when initiating with peers during non-treatment social probes and during generalized probes in natural settings than the comparison group. These results confirmed prior research which demonstrated that social skills intervention focused on targeted needs improved skills and may have prompted generalization.

Peer-mediated intervention may also be combined with pivotal response training (PRT). PRT is a naturalistic intervention with a focus on motivation, responses to cues, self-management, and social initiations. PRT is noted as an evidenced-based practice for students with ASD (as cited from Brock, Barczak, & Dueker, 2017). Brock et al., (2017) addressed the effects of practitioner-facilitated peer-implemented PRT on peer interactions and the quality of play for students with ASD during recess. The researcher's hypothesis was that the intervention would increase peer interactions and that students with ASD would engage in appropriate play with peers.

Brock et al., (2017) found 11 elementary and middle school students with autism who did not engage with peers during recess per teacher's report. Other participants included 11 adults and 19 students without developmental disabilities. The control and experimental groups were created. The control group of adults did not receive training. They were informed that the researchers wanted to observe a typical recess. The adults in the experimental group were provided a one-hour training in which they learned how to identify, train, and support peers on a day-to-day basis during recess. Recess facilitators identified peers by asking ASD students about

their preferred peers or by finding peers with whom they interacted positively in the past. Identified students participated in a 45-minute meeting with the facilitator. The facilitator described the study, provided background on the targeted students' goals, gave strategies on ways to engage the focus student, explained the support process, discussed appropriate language/confidentiality, and asked if the student had questions. The intervention lasted a minimum of five weeks where the facilitator checked and supported the peer engaging the focus learner. Data was collected through observations and surveys. The results showed a significant increase in interactions between students, but there was no notable change on the quality of play. However, Brock et al., (2017) noted increased levels of proper peer play, decreased times of appropriate solitary play, decreased levels of inappropriate play and a decrease in no play.

Surveys were given to the adults, the students with ASD, and typically developing peers. Adults noted that peers enjoyed providing support. They understood how to implement the strategies and would not need ongoing consultation to continue implementation. Most students with ASD said they liked going to recess, enjoyed playing with trained peers and considered the trained peers to be their friends. Half of the students with ASD said the trained peers taught them a new way of playing. The neuro-typical peers all agreed that they enjoyed supporting their buddy at recess. Each one also said they would do it again in the future and 73% said they would recommend the experience to a friend. When asked if there was anything they did not like, 84% responded no. The remaining students commented that they missed out on other activities including playing with other friends; they felt responsible to remain with their assigned peer (Brock et al., 2017).

Bui & Simpson (2016) specifically studied students identified with low-functioning autism (LFA) by combining PMI and shared reading. Shared reading is a method used in

classrooms to help elementary students with emergent literary skills combined with teaching practical interpersonal relationship skills. The research was to identify the effects of class-wide peer-meditated social skills intervention by measuring how students with LFA initiated and responded to their typically developing peers. They also wanted to understand how the neuro-typical peers perceived their relationships with peers with LFA. The elementary school participants included students from one general education and one special education class that included one LFA student. Students were grouped into smaller reading groups that included one LFA student. Groups remained the same throughout the study. Students were given a visual instruction guide with three intervention guidelines that were taught and reinforced by the general education teacher, special education teacher and researcher. Typically developing peers were trained to use a token economy system to reinforce students with LFA. Shared reading lasted for 15 minutes. The intervention data was collected for two-minutes followed by a 30-second interval break and repeated until ten minutes of data was recorded for each group. Bui & Simpson (2016) said, "Data did not represent a consistent change in level from baseline to intervention phases" (p. 169). However, data supported functional relationships in regards how students with LFA responded to peer initiations. The support was not as strong as preferred. Social validity was strong as typically developing peers said they enjoyed being with their buddies. They enjoyed helping the students with LFA and they expressed that they were friends with their student partner.

Devender & Hart (2018) examined how peer mediation increased, maintained, and generalized social initiations and responses for students with ASD in the elementary setting. Four students with ASD who demonstrated social skills deficits were recruited by their general

education teacher. The classroom teachers also recruited peers (for every one student with ASD) based upon being in the same class and having strong peer-to-peer skills.

The study occurred in the general education setting during center time which was academically focused. Baseline observations were collected followed by intervention training in which the researcher directly instructed ALL students by modeling and asking the students to practice. Maintenance and generalization were probed after the initial observation sessions. Like many other studies, the social validity was also assessed through questionnaires completed by teachers and typical developing peers. Results indicated an inverse relationship between initiations and responses. As the initiations decreased, the responses increased. Participants increased, maintained, and generalized responses but the intervention did not significantly impact their level of initiations. Cumulative responses from the questionnaires indicated that both teachers and typically developing peers considered PMI to be a socially valid intervention (Devender & Hart, 2018).

Heitzman-Powell, Kamps, & McFadden (2014) noted that PMI was an evidenced based practice as noted by the National Professional Developmental Center, however, despite this, PMI was not often a method used in the school setting. The researchers conducted their own study and evaluated peer mediation in a package with other interventions that included a token economy system and direct instruction to determine the effectiveness for students with autism targeting social communication skills at recess. They called this the Peer Network Recess Intervention Package (PNRI). Other questions posed included how this intervention would affect student's initiations and responses (for both participants and peers) and how would adults prompt during the interventions.

Four male students with autism participated based upon teacher reports of social deficits at recess; two of the students were diagnosed with mild-moderate autism and the other two were diagnosed with severe autism. Peers had a chance to volunteer and teachers reviewed the peers based upon their social skills adeptness. Chosen school staff implemented the PNRI intervention and trained at staff meetings to learn the intervention goals and procedures. The intervention was completed over a period of seven months. Baseline data was collected and interventions began with whole class group instruction. Students received direct instruction about how to use a specific social skill at recess. A two-minute huddle at recess with the implementer and peer-volunteers happened. The implementer reviewed the social skills, provided examples, modeled the skill, and then told the group to go play. The researchers incorporated whistle stops into the intervention two times during play where students gathered, completed a checklist that identified if they were carrying out the social skill modeling. Finally, the token economy was introduced via the whistle stops in which students earned a class party based upon the contingency of success at recess. Students and the implementer completed a post-recess huddle to reinforce students by showing them documentation of their progress towards earning the class party (Heitzman-Powell, et al. 2014).

The results showed increases in social communication behavior across all four participants and their peers. Both response and initiations increased from baseline to the intervention data collection. The researchers also noted that students with autism increased the number of comments they made during the interventions. Heitzman-Powell, et al., (2014) also said that adult and peer prompts increased during PNRI.

Similar to Heitzman-Powell, et al., (2014), Cox, et al., (2014) also assessed the relationship between peer mediation interaction package and the communicative acts of students

with ASD during recess. Three students with autism and four to six neuro-typical peers participated. The interventionist primed the students at recess by explaining the target behavior, demonstrated how to execute it appropriately, helped peers select a group activity, and then allowed the group to go play. The interventionist provided verbal praises and reviewed reinforcement cards. Following the session, students were allowed to pick a treat if the criteria was achieved. The overall results showed significant positive changes between the baseline and intervention phases targeting communicative acts for students with autism.

These research studies were vital in showing how joint interventions using peer mediation were successful in increasing social communication skills in students with ASD.

PMI and Student Behavior

Peer-mediation was thought to be a beneficial intervention as students were more apt to listen to peers than adults. Puckett, Mathur, & Zamora (2017) conducted a study to determine whether students transferred social skills following instruction from one setting to another. The study used a combination of social narratives, video modeling, peer mentoring, and technology-aided interventions. The guiding questions were: how did using a comprehensive approach targeting three skills in a general education classroom impact students and what were students' feelings about the behavioral effects of the intervention? Two students who demonstrated behaviors that affected their academic success (one of these students had autism) were paired with a general education peer who served as a mentor. The interventions took place in the special education classroom and observations were completed in the fourth-grade classroom. The interventions were presented in 30-minute sessions before the school day started and were held twice per week for eight weeks. Results showed that the students increased their ability to identify the targeted behaviors and students with autism were more aware of their own behavior

and the behaviors of others. Overall, the students expressed a sense of pride in their accomplishments, felt better about their behavioral choices, and formed strong friendships with the peer group. Hart & Whalon (2011) noted, "Many children with classroom behavioral concerns desire friendships, but their struggle to develop effective social skills places them at risk for peer rejection and isolation, making these skills critical instructional goals. Opportunities for success in social interactions became the primary motivator for these students. The students' motivations supported literature recommendations that social skills were paramount instructional considerations" (as cited in Puckett et al. 2017, p. 34).

Positive Behavioral Supports (PBS) is a common strategy implemented across schools to teach students what behaviors are expected. The focus of PBS considers what positive behaviors are expected from students rather than focusing on unexpected or undesired behaviors. Clarke & Duda (2018) researched the effects of combining PBS with PMI. Their purpose was to prove that typical peers could use the PBS process to improve the behavior of students with ASD. A student in middle school with ASD was selected as the primary participant. The student's communication consisted of vocalizations, high-pitched screams, and gestures. She also demonstrated challenging behaviors such as self-injury, property destruction, and aggression. The team agreed to use her physical education (PE) class as the primary setting for the instruction because PE was associated with elevated levels of challenging behaviors. A PBS facilitator taught the subject's peer buddies how to implement PBS interventions. Peers buddies were students who expressed interest in volunteering to work with other students. A Functional Behavior Assessment (FBA) was completed for the targeted subject, i.e. finding target behavior, collecting baseline data, and hypothesizing root of the challenging behavior. The peers completed a four-hour training over two days to learn how to implement PBS strategies. They

had an additional one-hour meeting to discuss questions and receive clarification. The data collected showed that challenging behaviors were less frequent during the intervention phases. Clarke & Duda (2018) said, "The collection and use of fidelity data suggest that the multicomponent intervention plan had a direct relationship to improved outcomes for the target student" (par. 24).

Challenging behavior is one of the primary reasons why it is hard for students with ASD to be in inclusive settings as their behaviors negatively affect the entire class. Cole & McCurdy (2014) researched the effects of simple peer support interventions to address off-task behaviors in students with ASD in inclusive settings. Three male students with autism in two elementary schools were the primary participants. Students demonstrated off-task behaviors during inclusive classroom time. The off-task behaviors were identified by direct observation for five days per week for a total of 20-minutes. Peers were privately interviewed for their perspectives regarding the ASD students. They received individual strategies during free time at school to help support their peers with ASD.

After the training, peers were seated next to the students with ASD during the inclusive class time. The peers encouraged the students with ASD or prompted them when needed. If the peer prompted their partner five times or more, the teacher intervened instead. The peers completed a post-interview. The results showed that the off-task behaviors decreased during peer-intervention sessions for all three students with ASD. Peer questionnaires demonstrated that the peers enjoyed being with students with ASD; they were willing to do it again; and they indicated that they considered the student with ASD a friend (Cole & McCurdy, 2014).

PMI and Academics

PMI is an intervention that specifically targets social skills, but the effects and benefits also impact students' academics. Interestingly, PMI is not only beneficial for increasing academics for students with autism, but it also benefits typically developing peers who struggle academically.

Ledford & Wehby (2015) researched how using small group instruction taught social skills and academic skills simultaneously. Five groups were created that included one student with ASD and two to three peer students. Students with ASD who had deficits in social skills but were in the general education setting 69% or more with additional adult support were chosen. The neurotypical peers were chosen based on teacher reports of students who demonstrated a high level of peer-to-peer interactions but struggled academically. Small group instruction happened in the special education classroom.

Academic and social skills instructional targets were identified. The targets were based on identified needs of the groups. Academic targets included naming a written word or naming a geometric shape. Social targets included sharing, providing social feedback, or initiating comments. Direct instruction was provided by using progressive time delay (PTD) a strategy where the instructor immediately provided the correct answers and progressively gave more wait time in later sessions. Among this, peers were also provided training in which they were taught how to be friends through learning to identify the student's target behavior, observing concepts modeled or visualized, and then having a chance to practice it with feedback (Ledford & Wehby, 2015).

Academically, all the students (with and without ASD) except one (without ASD) learned the academic targets at the same rate. One student who did not have ASD learned more slowly than the others. Socially, all students with and without ASD, increased their mastery of targeted

social skills (Ledford & Wehby, 2015). This study was vital in understanding how the use of small group instruction with PMI benefitted students with and without ASD when learning academics and social skills.

Ledford & Wehby (2015), Cole & McCurdy (2014), Clarke & Duda (2018), & Puckett, et al., (2017) found that students with ASD demonstrated an increased ability to implement target behaviors when they worked with trained neuro-typical peers. To effectively understand the benefits of peer-mediation, educators must be aware how peer-mediated intervention impacts neuro-typical students who are also actively engaged in the intervention. The studies supported inclusion programs as effective instructional teaching methods that also benefits neuro-typical peers.

PMI and Neuro-Typical Peers

Garrison-Harrell et al. (1998) researched the perspectives of peers who took part in school-based, integrated activities with students with autism. A dual purpose was to show related, documented effects such as the student interaction time during the integrated sessions. Participants included 38 students with autism (with varying levels of ability) and 203 neuro-typical peers. Students ages ranged from five-11 years. The study spanned five years. All students took part in peer inclusive group activities including whole class or small group tutoring, cooperative learning groups, special class friends, or network groups. Students participated between four weeks and six months. Project staff interviewed neuro-typical peers individually for 15-minutes. The data was analyzed by an experimenter who coded the responses and defined categories based on the reading. Coding by a second experimenter was completed for reliability. The interview and survey responses showed most peers reported with positive attitudes. When asked what the peers liked most about engaging with their ASD peers, they

noted the social and interpersonal aspects, Other positive responses found that the peers liked learning new things and they liked tutoring or helping others. When asked what students liked the least, many could not think of anything. Students primarily noted disliked social or interpersonal problems. However, the 130 total social interaction dislike statements were equally directed towards students with autism and general peer groups with a focus on inappropriate behaviors or attention issues. When asked what the peer models learned a high percentage of statements centered around the social interpersonal nature of engagement. Finally, when asked if they liked being paired with a particular student, 90% of students answered yes. Garrison-Harrell et al., (1998) stated, “Peers are accepting and often times excited about social activities with children with autism (p. 128).

This study illustrated that peers enjoyed engaging with their autistic peers. They enjoyed helping and interacting socially. The experience also taught them valuable lessons about empathy, acceptance, and social and interpersonal skills.

A study completed by researchers Mavropoulou & Sideridis (2014) investigated the contact theory effects by viewing changes in knowledge, cognitive attitudes, behavioral intentions, and empathy towards peers who did and did not have contact with their ASD peers. Contact theory stated that discrimination could be decreased by sustained contact (Allport 1954 as cited from Mavropoulou & Sideridis, 2014). These questions guided the research: 1) Do peers who have contact with students with ASD correctly understand the nature of ASD, display more empathy, and have more positive attitudes? 2) Does student proximity affect this knowledge and awareness? 3) Is this knowledge retained after three months? Researchers recruited children from different schools and classrooms and placed them into groups based upon their level of contact with ASD students and noted their proximity to these students (ex. Did they sit at the same table

together?). The students completed self-reports and checklists. The Adjective checklist measured cognitive attitudes. The Shared Activities Questionnaire-Original Form (SAQ-QF) measured behavioral intentions. The Basic Empathy Scale (BES) measured empathy (Mavropoulou & Sideridis, 2014).

The results from these reports and checklists supported positive changes as a result of being in contact with students with ASD. Proximity did not have significant effect on knowledge. Finally, the student's knowledge was measured three months later. The findings supported that students in the contact group maintained their views and attitudes towards classmates with ASD (Mavropoulou & Sideridis, 2014).

Locke, Kasari, & Rotheram-Fuller (2012) examined peer models and identified interpersonal skills for the children who were selected as peer models. They hypothesized that students typically chosen to be peer models had more interpersonal skills than non-peer models. The specific interpersonal relationship skills examined included quality of friendships, social network status, and loneliness.

Locke, et al., (2012), randomly selected students with ASD in an urban school district and teachers nominated same-age peers to participate in PMI. Randomized selection of other typically developing peers generated lists of students who were not selected as peer buddies but who also participated in the surveys. Students were asked to complete a survey about friendship and to state who they liked to hang out with and those whom they did not like to hang out with. The Friendship Qualities Scale (FQS) addressed friendship quality and Peer Network Dyadic Loneliness Scale surveyed student loneliness. Peer models were trained in how to help students with ASD during recess or lunch where they interacted two times a week for a duration of six weeks (Locke, et al. 2012).

Results of the surveys indicated that peer models were significantly more likely than non-peer models to receive friendship nominations. There was not a significant difference in friendship reciprocity. Peer models reported higher quality of relationships with their best friend than non-peer models. Finally, peer models reported significantly less loneliness than non-peer models at baseline but at exit there was not a significant difference in loneliness between peer models and non-peer models (Locke, et al. 2012).

PMI in Multiple Contexts

Whereas PMI has many benefits, it is important to ensure that PMI is generalized across settings. PMI is typically an intervention used for non-structured class times such as recess and lunch. However, Frederick, Gilmore, Locke, & Santillan (2019) completed a study and identified how inclusion during classroom opportunities was related to engagement during recess. Students with ASD, recruited across multiple schools, participated in a friendship survey. Playground observations using the Playground Observation of Peer Engagement (POPE) assessed student's social interactions during recess. Results indicated that there was a connection in interactions between the classroom and playground. Frederick et al., (2019) said, "Thus, it is important for children with ASD to receive support (e.g., social skills training) in both contexts. This provides children with ASD the opportunity to learn and *practice* pivotal social skills and *apply* them to multiple contexts" (p. 94).

This study showed providing social supports across settings helped students with autism generalize and maintain their social skills. It also revealed that when students were more connected in the classroom, they were more likely engaged during unstructured class times.

PMI and Barriers to Inclusion

Whereas research shows PMI is an effective intervention that provides many social benefits, in the current educational set-ups focused on inclusion, PMI is not always possible due to barriers that effect PMI implementation.

Curtis & Silveira-Zaldivar (2019) studied barriers to providing evidence-based practice (EBP) in the area of social skills for students with high-functioning autism (HFA) in inclusive settings. They guided their research with these questions: 1) What barriers do school districts report when asked to implement evidenced-based social skills instruction for students with autism in inclusive settings? 2) What do stakeholders need to successfully implement these practices?

Participants from an urban district who represented diverse economic and ethnic groups participated in this study by completing surveys. Participants were stakeholders in inclusion programs that included special education teachers, related service provides, paraprofessionals, parents, and general education teachers. The primary survey results indicated that the biggest barrier to providing social skills instruction was lack of staff training. Other primary barriers to implementing PMI were lack of staff, lack of time and priority concerns (Curtis & Silveira-Zaldivar, 2019).

This study revealed that moving towards fully inclusive models of special education is not easy as different challenges need to be addressed. Particularly, adequate staff training needs to be provided.

Ostmeyer & Scarpa (2012) used a participatory action research (PAR) method to address the needs and barriers to including students with high functioning autism (HFASD) in the classroom. The participants were from a public elementary school who chose to attend a focus group or an individual meeting. During the groups, the researchers presented current research

about social skills interventions and the impact of social skills instruction on academic performance. Following the presentations, participants completed questionnaires followed by discussion regarding how social skills programs could be implemented and what were the barriers to implementing the programs (Ostmeyer & Scarpa, 2012).

The results from the questionnaires indicated that the participants viewed social interventions as important. They listed the benefits associated with social skills intervention to include educating peers about students with HFASD, teaching peers how to interact with students with HFASD, and peers could help students with HFASD develop relationships. The results also showed that stakeholders acknowledged ways that the students' social deficits impacted academics and relationship development (Ostmeyer & Scarpa, 2012).

Of the barriers indicated, the primary concern was that interventions that happened outside of the classroom removed students from academic learning. Another primary concern was the lack of time for training staff. When asked what successful implementation would look like, the stakeholders indicated the need for an easy format that could be implemented during whole class instruction, decreased preparation time, and a program that would allow all children to stay in the classroom to benefit from the instruction (Ostmeyer & Scarpa, 2012).

While this study showed the barriers to implementing a social skills intervention, it was increasingly clear that stakeholders understood the need for social skills intervention and that there were plausible ways to successfully implement the social skills instruction if the barriers were considered and problem solved.

Conclusion

Overall in the systematic study of PMI reports, Gevarter, et al., (2014) found that PMI promoted social interactions in inclusive settings. The majority of studies reviewed demonstrated

a prominent level of certainty to support the positive outcomes. Positive findings were specifically noted in the areas of generalizing and maintaining skills, and strong social validation. Gevarter, et al. (2014) said, “These positive findings suggest that PMI was generally perceived to be an acceptable intervention for use in inclusive settings and is beneficial and acceptable to both participants and peers, and is supported by teachers in the classroom” (p. 108).

Based on this literature review, it is evident that the use of PMI is a plausible intervention with success rates that improve social communication, behavior, and academic needs for students with ASD. In addition to the benefits for ASD students, neuro-typical peers demonstrated gains that include developing empathy and character traits that will aid them in their interpersonal relationships. Barriers to consider included lack of time and training, but with the proper supports, these barriers can be overcome to successfully implement the greater need for social skills intervention as the benefits certainly outweigh the risks.

CHAPTER III: APPLICATION OF THE RESEARCH

Evidenced-Based Rationale

Research supported PMI as a successful intervention to address social communication (Cox et al., 2015), behavior (Clark & Duda, 2018), and academics (Ledford & Wehby, 2015) in students with autism. Research also suggested that the evidenced-based rationale for using PMI was a social validated intervention for neuro-typical peers (Garrison-Harrell et al., 1998). PMI is most effective when combined with other interventions such as direct instruction, social stories, video modeling, or reinforcements. PMI has also been effective in helping students with autism generalize and maintain their newly learned skills (Frederick et al., 2019). The success of this research supports PMI as an evidenced-based practice that increases the social communication, behavioral, and academic skills of students with autism while teaching their neuro-typical peers practical character traits.

Purpose & Goals

Despite the push for inclusion in mainstream schools, students on the autism spectrum disorder continue to be socially and emotionally excluded from their peers (Gleeson, et al., 2017). Considering that students educated in center-based classes (Federal Setting III) have much less exposure to their general education peers due to the unique social communication, academic, and behavioral needs of ASD. In a typical elementary setting, special education students may attend mainstream classes with their neuro-typical peers for specials (art, music, gym, etc.). Other places of inclusion may also be lunch and recess. However, during inclusion, the students are typically accompanied by a special education paraprofessional, so they have limited social interaction with their neuro-typical peers.

Students identified with low-functioning autism benefit from familiar routines, visuals, and locations. In addressing the question about ways to include students with autism, educators have been problem-solving in ways that are least effective for students who dislike change and have sensory regulation deficits. Rather than putting students with ASD into the overwhelming classroom situations, I propose to use the evidence-based rationale for PMI and flip the intervention by creating a program structure, including curriculum, where neuro-typical students are brought *into* the special education classroom environment to participate as peer-buddies for students identified with low functioning autism.

Within the special education environment, where the students with autism are already comfortable and familiar with the routines, they will be paired with neuro-typical peers as their "peer buddies" during morning meeting one time a week. The benefits of implementing the program during morning meeting is so that the neuro-typical peers can attend their classes for instruction. In addition, the design of this program meets the learning targets for morning which builds community. By coming into a special education classroom one time a week, the peer buddies will get a chance to show leadership, which is an asset to them, while continuing to reap the benefits of community building during morning meeting.

The goals of this program are targeted for students with ASD and implemented in the special education setting with neuro-typical peers as buddies. The objectives are three-fold: to increase social communication skills, to establish inclusion by building relationships, and to generalize and maintain skills and relationships throughout the school-based setting.

Increasing Social Communication Skills

The first goal is to help students with low functioning autism increase social communication skills through peer mediation. Specific target skills will be taught at morning

meeting, in which, the peer-buddies will model the skills such as asking how to join in play, initiating greetings, responding to conversations, etc. Students will follow a model and then practice together.

Inclusion

The second goal is to provide greater levels of inclusion for students in their general education classrooms. The first step is to establish relationships with their neuro-typical peers. Students with low functioning autism would be lost in the mainstreamed classrooms. They will be more successful by having student support by beginning to build peer relationships. By having peer buddies, low functioning students receive aspects of inclusion through relationships in which they are no longer socially, emotionally, and physically excluded. The design of the program brings the neuro-typical peers into the special education resource room as the students do not have the necessary skills to participate independently in the classroom.

Generalization & Maintenance

Finally, the third purpose of the program is to generalize and maintain skills and relationships across school-based settings. The beginning stage of the program/curriculum will focus on building student relationships and teaching the target skills in the special education classroom. Over time, the program will support and challenge students to practice the skills with their peer-buddies in different settings, such as during class specials, lunch, and recess. Finally, as students achieve goals, the program will progress so that students with autism will eventually accompany their peer buddy into the mainstream classroom for morning meeting. This will be to help students generalize and maintain skills while also providing practical opportunities for inclusion to happen during other parts of the school day.

Program Design and Curriculum

The program will begin in October which will allow time for students to acclimate to school rituals and routines. During the first few weeks of school, prior to program implementation, the special education teacher will collaborate with the general education teacher to identify students who could be peer buddies. Peer buddies will be chosen based upon the following criteria demonstrates age-appropriate social skills, has consistent attendance, and is academically competent. Peers should be willing to participate and will be allowed to choose or decline the opportunity. Parent approval to remove the students from the classroom one time a week will be requested prior to any implementation. Parents of students with ASD will also be contacted and will give approval for their student to participate.

The program will begin by teaching the peer-buddies the expectations of their role in the classroom. The program will then begin with the peer buddies coming into the special education classroom one time per week during morning meeting (for 30-minutes).

Four target skills will be taught and practiced: initiating greetings, requesting to play together, sharing/playing together, and responding to conversations. Each topic will be taught and practiced over a four-week period to ensure the skill is learned and maintained. As new skills are taught, previous skills will be reviewed. When all the skills have been taught and practiced, the program will shift so the peer-buddies will meet with students at times other than during morning meeting, such as lunch, recess, and specials. The purpose is to increase and support the generalization of skills. Battaglia & Radley (2014) noted PMI allows children with ASD to practice skills in natural social contexts, which allows the students natural maintenance opportunities. Finally, if data collection demonstrates that students with autism are ready, they will join their peers during the general education morning meeting class. If they are successful, further inclusion into the mainstream morning meeting class will be discussed with the

Individualized Education Program (IEP) team, including the parents and new goals will be added. Peer-buddies will be surveyed twice with a 5-point Likert scale to determine their continued interest in the program.

General Timeline/Overview

MONTH	SKILL	ACTIVITY	SETTING & RESOURCE
SEPTEMBER	Work with Gen. Ed Teacher to determine peer buddies	• Push into general education morning meeting and explain to students opportunity to be a peer-buddy by providing them with a brief overview of what it means to be a peer-buddy and how they would come to a different classroom 1x a week for morning meeting and help support another student. • Determine which students want to participate. • Send home parent permission. • Train final peer buddies during small group morning meeting by explaining expectations, modeling, and using visuals	General Education Classroom *Peer-mediated Social Skills Training for Children with Autism Spectrum Disorder:* https://journals-sagepub-com.ezproxy.bethel.edu/doi/pdf/10.1177/107429561402300202
OCTOBER	Building Relationships	Week 1 – "Four Corners" Ice Breaker Activity Week 2 – Review class expectations with whole group. Use visuals. Week 3 – M&M Get to Know You Activity from Teacher's Pay Teachers (TPT) Week 4 – Game (Use preferred game by group)	Special Education Classroom Week 3 - https://www.teacherspayteachers.com/Product/MM-get-to-know-you-activity-for-students-with-Autism-886540
NOVEMBER	Initiating Greetings	Week 5- Direct instruction: How to initiate greetings Week 6- Review, practice Week 7 – Initiating greetings activity Week 8 - Data collection/Game (Use preferred game by group)	Special Education Classroom
DECEMBER	Requesting to Join in Play	Week 9- Direct Instruction: Asking to join in play Week 10 – Review, Practice Week 11- Requesting to play activity	Special Education Classroom

		Week 12 – Reinforcement party (natural time to collect data on two skills learned) -Have peer-buddies complete survey	
JANUARY	Sharing/Playing Together	Week 13 – Review previous skills when school resumes Week 14 – Direct Instruction: Sharing Week 15- Review, practice Week 16 – Shared Reading Activity (data collection)	Special Education Classroom *Reading Buddies: A Strategy to Increase Peer Interaction in Students with Autism:* https://journals-sagepub-com.ezproxy.bethel.edu/doi/full/10.1177/1053451217692570
FEBRUARY	Responding to Conversations	Week 17 – Direct Instruction: Responding to Conversation Week 18 – Review, Practice Week 19 – Responding to conversation activity Week 20 – Natural play/Data collection	Special Education Classroom
MARCH	Generalize Skills	• Review skills with students, as necessary. Explain to students they are going to meet during recess and lunch and practice skills learned. • Collect data.	Week 21-22 at Recess Week 23-24 at Lunch *Lunch Buddies*: https://search-proquest-com.ezproxy.bethel.edu/docview/234981821/fulltextPDF/C05B818652604EFFPQ/1?accountid=8593 *Peer Mediation to Increase Communication and Interaction at Recess for Students with Autism Spectrum Disorders:* https://www-sciencedirect-com.ezproxy.bethel.edu/science/article/pii/S1750946713002535?via%3Dihub

APRIL	Generalize Skills	• Use data collected and IEP team input to determine if students are ready to attend the general education classroom for morning meeting with their buddy. • Partner with gen. ed teacher to determine needs and supports based upon IEP and send students who are ready to mainstream morning meeting. • Continue generalizing at recess, lunch, and in the special ed. classroom.	Mainstream Classroom or Special Education Classroom. Lunch Recess
MAY	Maintain Skills	• Continue student buddies in a variety of settings either in class, at recess, lunch, field trips, etc. • Review skills as needed. • Continue to collect data and monitor progress/reassess supports needed. • Final reinforcement party. • Survey buddies.	Variety of places

Audience

The primary stakeholders involved include special education teachers, administration, general education teachers, parents, paraprofessionals, and students.

Special Education Teachers

The program and curriculum are designed for special education teachers to implement with general education students in addition to other social skills intervention techniques. The program will be led by the special education teacher who will recruit students, train students and staff, and teach the skills used with the students and their peer buddies.

Administration

Due to the unique set up of the program, the administration of the school will need to approve the intervention program. Specifically, they need to approve the professional

development training for paraprofessionals and for general education students to be integrated into a special education classroom. The buy-in from administration will be centered around the students' needs to be exposed to typically developing peers. The students in my center-based setting do not have the skills to be included in the same manner that their higher functioning peers with disabilities are included.

General Education Teachers

Research showed that general education teachers are proponents of inclusion and social skills instruction, particularly when the curriculum is easy to use and students are not pulled from academics (Ostmeyer & Scarpa, 2012). This program is designed to ensure that it does not occur during direct academic instructional time. Although the special education teacher is facilitating most of the programming, the general education teacher is part of the IEP team and is needed to help recruit students and actively participate towards the end of programming when students with ASD join their mainstream class. To feel comfortable working with the ASD students, the general education teachers may need some more training about autism and the need for inclusion and exposure to typically developing peers. The special education teacher should ensure a working relationship with the general education teacher and assure the general education teacher that this process will enhance all students by building tolerance, empathy, and skills in patience.

Parents

Parents will need to give permission for their students to partake in this program. This programming is optional for students and it is not legal to put non-special education students into a special education setting without parent permission. Parents will be informed upon the evidenced-based documentation of this intervention showing research that supports the effective use of peer modeling. Parents of neuro-typical peers will be provided a list of the benefits for

their student and will be assured they will not be missing academic instruction. Parents of students with autism will be provided the benefits for their student and how this intervention can contribute growth to their student by meeting the Individualized Education Plan (IEP). They will also be asked for permission to disclose their child's disability to selected peer-buddies. Campbell & Hume (2019) explained that families may opt out of disclosing information, in which case, PMI may still occur, with focused on student strengths and not naming a specific diagnosis.

Paraprofessionals

Paraprofessionals are key components in successful special education classes. PMI programming is designed to be supported through the help of classroom paraprofessionals. After being directly taught by the special education teacher, the paraprofessional will assist in re-teaching as needed, collecting data, monitoring, and providing prompts and cues. Paraprofessionals will need to be trained according to PMI practices. Particularly, they may need specific training related to letting the peer students provide the support and knowing when they should step in to provide additional support. As the program progresses into different classes throughout the school day, the paraprofessionals will be key in monitoring and providing prompts to the neuro-typical students, as needed. Adequate training for paraprofessionals is paramount to the success of the program outside of the classroom setting.

Students

Overall, this program is designed to benefit students! Neuro-typical students, recommended by teachers, will be asked if they want to take part. Student's will not be required based upon recommendation. If they do wish to take part, they will be given training about autism to better understand their peers with disabilities (unless if disclosure is not permitted) in a

sensitive way to protect the confidentiality of their peers with autism. In this training, they will learn how to be a peer model and the expectations of the special education classroom. The internal motivation of being a leader and being a helper will be the primary reinforcement; however, a peer-buddy party toward the end of the year will also be used to provide external reinforcement. The party will also provide a naturalistic way for students to practice their relationship skills in a real-world context event.

Students with autism will be treated with respect. Their confidentiality will be protected. Students with autism will have their strengths highlighted. This practice combats stigmatization (Campbell & Hume, 2019). If students have severe aggressive behavior, they should not be considered for this intervention as safety for all participants is critical.

Resources

The curriculum will be designed with lessons once a week during morning meeting. Four topics will be covered; each topic will last four weeks. Generalization and maintenance activities will be built into the curriculum. Materials needed will include a Smartboard, visuals, and age-appropriate games found within a typical elementary classroom. The curriculum will be designed in a printable format so teachers can reproduce as needed. Customizable letters will be available to be printed and sent home to parents explaining the program. Data sheets will be included for teachers and paraprofessionals to monitor progress.

Paraprofessionals will require one hour of professional development training to learn the program structure and their roles and responsibilities along with best practices for students with ASD. This will be the costliest part of the program. Other costs will include printing, laminating, and items for a peer-buddy party.

Sustainability

The program is sustainable and can be morphed throughout the years to include new research of best-practices and the ever-changing structure of public-school systems. The curriculum will not be dated, providing flexibility to use year after year with few changes necessary. Visuals and other paper materials can be laminated to ensure they are re-usable. The concepts taught in the curriculum include basic social skills that will be needed for years and generations to come. The activities and games can change and evolve to keep with what is current.

Conclusion

In conclusion, my purpose is to create a program and curriculum using PMI by bringing neuro-typical students into the special education classroom. Students in a setting III program do not have the skills needed to be included in mainstream classes. Therefore, by changing the way educators typically consider inclusion, this program helps increase social communication skills in students with low functioning ASD while also helping them build relationships with peer buddies. These relationships will help student's inclusion throughout their middle and high school years.

CHAPTER IV: DISCUSSION AND CONCLUSION

Summary

In summary, systematic studies of PMI indicated it is an effective intervention that increases social communication, behavior, and academic goals for students with ASD (Gevarter, et al., 2014). It is a socially validated intervention (Garrison-Harrell et al., 1998) that neuro-typical peers also benefit from. PMI that happens in multiple contexts (classroom, recess, lunch, etc.) is beneficial in helping students generalize and maintain skills (Frederick et al., 2019). School districts that implement PMI in their setting III ASD programs create more inclusion for students who are not able to participate in mainstream classes due to their unique needs. District should be aware of barriers, particularly, providing adequate training (Curtis & Silveira-Zaldivar, 2019).

Overall, PMI is an evidenced-based practice that benefits all students who participate. When PMI is implemented by bringing neuro-typical students into the special education classroom, inclusion for students with ASD is made accessible according to their unique needs. The relationships that develop in the special education classroom will most likely be linked to further inclusive opportunities during other parts of the school day. Frederick et al., (2019), identified the connection between engagement during unstructured class times when social skills intervention happens in the classroom. Implementing PMI, by bringing neuro-typical students into the special education classroom, is an evidenced-based practice with multiple benefits that creates inclusion for setting III ASD students.

To apply the principles I learned from this literature review, I designed a program that brings neuro-typical students into the special education classroom once a week during morning meeting. Students will be trained to become peer-buddies. Through direct instruction students

will learn four key skills that will be practiced and modeled with the peer-buddies. After the relationships have been established, generalization and maintenance of skills will occur as the peer-buddies meet with their partners in other environments.

Professional Application

PMI is an evidenced-based intervention. Whereas, the primary goal of PMI is to increase students' social skills, PMI should also be considered to promote inclusion. Placing students in the same space together does not always equal inclusion. Often, students with ASD may be in the same space as their peers but continue to remain socially and emotionally excluded due to deficits in social skills (Gleeson, et al., 2017). If students in setting III programs are physically separated from their classmates in separate classrooms to meet the unique student needs, in what ways are students also emotionally and socially separated from their peers?

The benefits of PMI are not only so peers can model appropriate social behaviors, but so peers can be trained on how to be buddies or mentors to these students. Special education teachers should advocate in their districts methods to implement a PMI program. The benefits of implementing a program are two-fold: increase the social communication skills of students with ASD while also helping students with ASD build relationships through peer buddies.

School districts already promote inclusion through co-taught classes. Each district should consider ways they can advocate for greater aspects of social and emotional inclusion. Implementing PMI is a fantastic way to create inclusion creatively that reaches the most vulnerable students. Districts that implement this intervention at the elementary age may also see benefits as students advance to middle and high school. Theoretically, less bullying should happen as LFA students have been integrated with their peers they have built relationships with

smaller, more predictable settings. Neuro-typical peers, who have participated as mentors and buddies, may also identify a calling to pursue a human-related service field.

Special education teachers, particularly those working in center-based classrooms, should be mindful regarding ways they can incorporate PMI along with their other social skills interventions. Special education teachers are some of the biggest advocates for inclusion; however, they are also cognizant of setting III program needs where physical inclusion into academic mainstream classes is not possible. For schools that do not have peer-buddy programs, special education teachers should advocate to implement these programs into their school to increase inclusion and improve students' social communication skills.

Limitations of Research

The research focused on students with low functioning autism (LFA), was limited. Most of the published documents focused on students with mild to moderate autism. I expected to find more research with a focus on students with LFA. Only two studies had a specific focus on students with LFA (Bui & Simpson, 2016 & Clarke & Duda, 2019). In the systematic study completed by Gevarter, et al., (2014) researchers limitations that with the limited number of studies focused on students with LFA it was not possible to suggest that PMI was successful for students of LFA; however, the studies with LFA students showed positive results.

In the research completed by Clarke & Duda (2019) one of their key limitations was lack of external validity. They noted that more considerations should be given to determine if this type of study could be successful with other populations. Bui & Simpson (2016) noted limitations that included small sample sizes. They also indicated that students with LFA had a range of characteristics and often struggled with inconsistency after intensive intervention (Ben-Itzchak & Zachor, 2007, as cited from Bui & Simpson, 2019).

Heitzman-Powell, et al., (2014) and Cox, et al., (2014) noted in their research small numbers of participants, which affected the generalizability of the findings.

Frederick, et al., (2019) noted that his research on peer interactions and engagements was based on observation at one point in time. He felt that this may not have been a valid representation of a child's day. Data was limited cross sectionally. Similarly, Devender & Hart (2018) noted in their research that dependent variables for communication attempts were limited to verbal initiations and responses that may not paint a complete picture of communication attempts.

I purposefully excluded research studies completed at the high school setting. A variety of studies of PMI at the high school level have been researched. For the purpose of this paper, I limited research to studies at the elementary and middle school level.

Implications for Future Research

Regarding the limitations, future research specifically focused on PMI for students with LFA using larger populations is needed. It would also be beneficial to design research to identify the perceptions of stakeholders about whether PMI implemented in the special education classroom created more inclusion opportunities for students with LFA.

Long term research studies of PMI implemented from elementary through high school would also be beneficial to determine if PMI started at an early age improved students' peer relationships and social communication skills as they aged.

Conclusion

In conclusion, PMI is an evidenced-based practice. PMI increases social communication skills for students with ASD while also providing inclusion through relationships. PMI is a practice that should be implemented in school districts, particularly by bringing neuro-typical

peers into the special education classroom. The program and curriculum created in this application thesis can be used by districts as an easy way to implement PMI and create inclusion for students with LFA.

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Appendix A

General Education Parent Permission Letter

SCHOOL NAME
SCHOOL YEAR
SCHOOL ADDRESS

Dear Parents,

(GENERAL EDUCATION TEACHER'S NAME) classroom is partnering with (SPECIAL EDUCATION TEACHER'S NAME) classroom to program peer-mediated instruction for students with special needs. Peer-mediated instruction is an evidenced-based intervention that allows students with disabilities to have a peer-buddy who helps them learn social skills. Research shows that peer-mediated instruction is effective in increasing the social communication skills of students with disabilities while also teaching students without disabilities valuable character skills such as empathy, tolerance, and patience.

You are receiving this letter because your child has been selected, based upon positive character traits demonstrated at school, to participate in this program. Your child has expressed an interest in this program. If your child participates in this program, **your child will go into the special education classroom 1x per week during morning meeting**. Your child will receive training, prior to starting the program, and will learn how to be a peer-buddy to a student with special needs. Later in the year, your child may also accompany their peer-buddy to recess and or lunch 1x a week and may eventually bring their peer-buddy into their mainstream classroom for morning meeting.

Your child will learn valuable leadership and relationship skills that will benefit them for years to come while making an impact in another child's life. This program is optional, and students and parents may decide to opt out of the program at any time during the school year. Your student will not miss any academic instructional time.

Please indicate below if you give your permission for your child to participate in (*SCHOOL'S NAME)* peer-mediation program.

Sincerely,

(Teacher's Name
Contact Info)

I give my student, _____, permission to participate as a peer-buddy for a student with special needs for the (school year). I understand that my student will be removed from their general education class and go into the special education classroom 1x per week during morning meeting.

Parent Signature: _____
Date: _____

Appendix B
Data Collection Sheet

Student: _____

Baseline Data

SKILL	DATE/SETTING	TRIAL I= Independent VP= Verbal Prompt PP= Physical Prompt M= Modeled P=Partial Prompt V=Visual Prompt	NOTES
Initiating Greeting			
Asking to Join Play			
Sharing			
Responding to Conversation			

WEEK 8 Data Collection

SKILL	DATE/SETTING	TRIAL I= Independent VP= Verbal Prompt PP= Physical Prompt M= Modeled P=Partial Prompt V=Visual Prompt	NOTES
Initiating Greeting			

WEEK 12 Data Collection

SKILL	DATE/SETTING	TRIAL I= Independent VP= Verbal Prompt PP= Physical Prompt M= Modeled P=Partial Prompt V=Visual Prompt	NOTES
Asking to Join Play			

Appendix B Cont.

WEEK 16 Data Collection

SKILL	DATE/SETTING	TRIAL I= Independent VP= Verbal Prompt PP= Physical Prompt M= Modeled P=Partial Prompt V=Visual Prompt	NOTES
Sharing			

WEEK 20 Data Collection

SKILL	DATE/SETTING	TRIAL I= Independent VP= Verbal Prompt PP= Physical Prompt M= Modeled P=Partial Prompt V=Visual Prompt	NOTES
Responding to Conversation			

Generalization/Maintenance Data Collection

SKILL	DATE/SETTING	TRIAL I= Independent VP= Verbal Prompt PP= Physical Prompt M= Modeled P=Partial Prompt V=Visual Prompt	NOTES
Initiating Greeting			
Asking to Join Play			
Sharing			
Responding to Conversation			