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The Impact of Peer-Mediated Instruction for Students with Disabilities in the Inclusive Early Childhood Classroom

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Abstract

The purpose of this action research project is to determine the impact of explicit instruction of

peer-mediated strategies for students who have disabilities but who are not on the autism

spectrum in the inclusive preschool classroom environment. There has been a large amount of

research surrounding peer-mediated strategies and how students on the autism spectrum benefit

from it, but there has been very minimal research that includes students with disabilities who are

not on the spectrum. Data was collected to determine what the effect that this intervention had

on four students in the areas of social behavior and social communication. The data was

collected based on each child's Individual Education Plan progress monitoring procedure.

Analysis of the data collected over a six week period suggest that explicit peer-mediated strategy

instruction had a positive impact on student behaviors in the areas of social behavior and social

communication. Further studies would benefit from this information in order to expand

knowledge around peer-mediated instruction and disabilities, especially at the kindergarten level.

Keywords: *peer-mediated, special education, learning, social behavior, social communication*

The Impact of Peer-Mediated Instruction for Students with Disabilities in the Inclusive

Early Childhood Classroom

Student learning is a desired outcome for any educator at any grade level. A variety of research-based strategies can be found in classrooms across the world, with the hope that students gain the knowledge, from preschool to high school and beyond. A child's preschool year is a time to grow in numerous ways, such as academically and socially, especially through play, with similar-aged peers. Teachers of students with disabilities also want their students to succeed, although the way the students learn may be different.

In the past few decades, preschool has become more and more available for young children in Iowa, especially with the inception of things like the Statewide Voluntary Preschool Program in Iowa, which started with just over 5,000 students and has grown to over 25,000 (Statewide Voluntary Preschool Program, 2019). With that increase, more students are being exposed to practices such as peer-mediated strategies, a model of teaching that explicitly teaches social skills instruction (Statewide Voluntary Preschool Program, 2019). This program is for children who turn 4 on or before September 15 of the beginning of the school year.

The most common type of social skills instruction, also known as peer-mediated instruction, is LEAP which was created by Dr. Phil Strain in 1981 (LEAP Preschool Model, 2018). This model focuses on teaching students an appropriate and socially acceptable way to interact in play, such as how to get a friend's attention, how to share, how to request, and how to share a play idea (LEAP Preschool Model, 2018). The instruction happens explicitly, during a large group time, first between adults, then adult-child, and finally, child-child (LEAP Preschool Model, 2018). The idea is that, with the instruction and ability to use it during the school day, a student will be able to generalize the skills (LEAP Preschool Model, 2018). This type of

instruction is important because students who are on the autism spectrum, or have other developmental disabilities, are at risk for isolation in life due to their limited capabilities (Hansen et al, 2019).

The LEAP model is heavily researched in the area of autism spectrum disorder, as are most other models (LEAP Preschool Model, 2018). However, it is also known that students who are in special education, or have disabilities, need more intensive instruction as opposed to typically developing peers who do not require additional explicit instruction (Piasta et al, 2019).   The instruction typically comes from either a combined general education/special education teacher or a special education teacher.

There is a positive correlation between social skills and peer-mediated instruction and social-emotional growth for typically developing students and students on the autism spectrum (Williams & Gray, 2013). The LEAP-style of instruction allows students to learn in a large group, but the addition of small or independent instruction, especially outside of students who are on the autism spectrum, is minimal. Due to the fact that LEAP is utilizing this style of instruction for students on the autism spectrum, this study aims to see if there is a positive correlation between peer-mediated social skills instruction, specifically how to get a friend's attention and how to request, and students who are identified by special education but not diagnosed on the autism spectrum. It will entail the already in progress large group instruction, but paired with additional individual and/or small group instruction prior to and during each student's specially designed instruction. This will be documented through the students' social behavior and social communication goals, which lend themselves to the peer mediated strategies.

Literature Review

One hallmark of the preschool level curriculum is social skills instruction because the majority of students do not come in with strong in social-emotional skills – it's something they need taught (Ashdown & Bernard, 2012). According to Ashdown and Bernard, less than half of students have successful social-emotional skills, compared to almost two-thirds of students with the successful cognitive skills (2012).

Students who have the diagnosis of autism spectrum disorder typically have lower social skills standings than typically developing peers that are the same age (Williams & Gray, 2013). Autism spectrum disorder is defined as a neurological disorder that is lifelong and non-progressive, and typically appears before the age of three, which encompasses a variety of disabilities, including verbal and nonverbal communication and social interactions (Williams, et al., 2017). Autism spectrum disorder typically includes deficits in the areas of imagination, social interaction, and communication and language skills. Due to the fact that social interactions are a difficulty for many people on the autism spectrum, many research studies have focused around teaching social skills to students on the autism spectrum.

When a school is thinking about teaching social skills, there are many directions that schools and teachers can take, but the fact that so many are students that are discrepant with social skills makes it a necessary skill to teach explicitly, especially at a young age. Additionally, research shows that students who have disabilities need explicit instruction in deficit areas, which would include social skills (Piasta et al., 2019) This is an evident practice in the area of special education, where students receive explicit, targeted instruction in identified deficit areas, such as behavior, adaptive behavior, communication, and academics. Due to the variety of different directions, social skills instruction can be quite varied. It can pertain to

getting along with others, sharing, using manners, and how to have a conversation, along with

developing positive relationships with peers and adults, which is a very preschool-based skill to

start (Ashdown & Bernard, 2012, p.397).

Another variation layer to the usage of social skills the acquisition rate. What is

acceptable, normal rate of gain for certain skills greatly varies by where you live in the world

(McCoy, Cuartas, Waldman, & Fink, 2019). For example, the idea of sharing an object with

someone else without being told to or forced to is different between the ten countries that were

studied, which included the United States of America and 9 other countries from South America,

Europe, Asia, Africa and the Middle East (McCoy et al., 2019).   In the United States, this skill

is thought to be mastered around a year and a half of age while India doesn't expect this skill

until after the child's second birthday (McCoy et al., 2019). The largest range in a skill is for

greeting others that are known people, such as a neighbor, has almost a year and half difference

with the Philippines expecting the skill to emerge earliest while children in Ghana do not

typically proficiently gain the skill until long after, up to years after (McCoy et al., 2019). Due

to the range in acceptable norms for social skills, it is important to note that when instructing and

assessing students in the skill, it can depend on how old they are what their background and

culture is (McCoy et al., 2019).

Like any type of educational curriculum, the variety of social skills curriculums each

have different viewpoints of which skills are a priority and which are the best to start with.

Programs, like LEAP (Learning Experiences - An Alternative Program for Preschoolers and

Parents), focus in on explicit social skills that help students begin friendships, such as getting a

friend's attention, sharing with a friend, making a request, giving a play idea, and giving a

compliment (Hoyson, Jamieson, & Strain, 1984). The LEAP program model is designed for

students on the autism spectrum and utilizes peer-mediated strategies in order to play out the acquisition of skills for students with disabilities (Hoyson et al., 1984). The entire preschool class is explicitly taught the target skill, such as getting a friend's attention, which is broken down to 1) looking at the friend, 2) tapping them on the shoulder, and 3) saying their name. The class stays on the target skill until 80% of the classroom participants are successfully using it in a generalized way (outside of embedded, explicit opportunities) (Hoyson et al., 1984).

The tracking for this can vary from classroom to classroom, with LEAP suggesting the use of 'Superstars', stars on clips that a student obtains after performing the skill during the centers or free play time (Hoyson et al., 1984). To be successful with 'Superstars', teachers, paraprofessionals and other adults in the classroom observe and watch for the target skill, then give the student one of the stars to wear until a determined time of the day where the teacher collects them, and tracks how many students were able to generalize the skill that day (Hoyson et al, 1984).

One of the big factors that makes LEAP so beneficial to students is that it uses the peer-mediated strategies in order to teach, practice and reinforce the social skills (Hoyson, Jamieson, & Strain, 1984). According to research, no matter how educated, trained and well-intentioned teachers, para-professionals, and other adults working with children are, the research points to the peers as the best teachers for each other, rather than an adult (Frantz et al., 2019). In Frantz et al.'s study, when compared to studies using peer-mediated strategies, their students did not make the same amount of progress using the same methods of teaching the social skills (2019). This study explicitly looked at preschool students with disabilities in a reverse-inclusion style of classroom, which does not include typically developing peers. A social skills curriculum was used, but when compared to research studies using peers, this study found that the results were

not as successful (Frantz et al., 2019). Using the similar tactics, wording and teachings, students still learned better from their peers rather than the adults who were trained in the curriculum (Frantz et al., 2019).

Beyond adult instruction, there are also other ways of teaching students that have been compared to peer-mediation to find the best possible way of translating the information to the child. Specifically, with the diagnosis of autism, students learn better through real life, teachable peer interactions than through other methods of instruction, such as social stories and video modeling (Ng, Schulze, Rudrud, &Leaf, 2016). This research study looked at the variety of ways students on the autism spectrum are taught social skills. Their findings included that video modeling works well when an experience will stay consistent and not need to be generalized, such as doing a puzzle or washing your hands (Ng et al., 2016). Social skills, however, can be varied during different pieces of life, which makes them translate well into peer-mediation with teachable moments rather than the video modeling (Ng et al., 2016).

Another study, by Rodriguez-Medina, Martin-Anton, Carbonero, and Ovejero, studied a similar route of students diagnosed with autism spectrum disorder and social skills instruction using peer-mediation in 2016. The students in the study were 8-year-olds with high functioning autism spectrum disorder, but were discrepant in their social skills, to a point that they needed explicit instruction and intervention in order to close the gap and be on grade level (Rodriguez-Medina, Martin-Anton, Carbonero, & Ovejero, 2016). They found that while social skills instruction improved their skills, the method of peer-mediation made a larger difference than other methods (Rodriguez-Medina et al., 2016). Additionally, they focused on using preferred peers identified by the students with autism spectrum disorder using a rating system (Rodriguez-

Medina et al., 2016). By utilizing the preferred peers, the social skills acquisition through peer-mediation was very positive (Ng, Schulze, Rudrud, & Leaf, 2016).

Another study, by Hansen, Raulston, Machalicek, Frantz, Drew, Erturk, and Squires also looked into peer-meditation for students on the autism spectrum in order to increase social skills. The difference, though, is that while they used peers, they were not necessarily 'preferred peers.' The preferred was actually an item, referred to in the study as the 'change agent'. By using an object (toy, game, book, etc.) with a peer, the students on the autism spectrum had more success (Hansen et al., 2019). This type of focused, joint attention activity ramped up the ability to practice and use social skills within an environment that surrounded a mutual interest, or change agent (Hansen et al., 2019). Hart and Banda's research on the effects of social skills of students with autism spectrum disorder compared to their peers also found that within a focused intervention with peer-mediation, social skills either maintained or grew, while none declined (2018).

Another research study, by Morrison, Kamps, Garcia, and Parker in 2001, also looked at two groups of students - 1 with diagnosed autism spectrum disorder and disabilities within social interactions and 1 with no identifiable disabilities. The students were taught social skills, then encouraged to use them in play. The results indicated that there was a positive correlation between being explicitly taught social skills, generalizing them, and peer-mediation (Morrison et al., 2001). While it is an older study, the information still stands as valid. Leaf et al., 2017, also found similar results when they focused on two groups, one explicitly taught social and one that was not. Those that were increased their social skills, specifically in the area of social behavior and social communication (Leaf et al., 2017).

As Leaf et al. noted, social skills instruction has also had a positive impact on other areas (2017). Their study utilized a blind evaluator, meaning the evaluator did not know who was being taught what skills, but marked and noted the progress. The information gathered was then given back to the researchers who found that the students given the instruction had gained while those who did not did not make positive progress (Leaf et al., 2017).

A research study in 2016 by Hanglein and Arak also found similar results of increasing other areas utilizing a social skills curriculum and instruction. Superheroes Social Curriculum is a preschool-aged curriculum that was utilized with students on the autism spectrum. It, again, gives evidence that there are very positive results in explicitly teaching social skills to those who are discrepant with them (Hanglein & Arak, 2016). Even more, the research looked at social behavior and social communication skills, or the ability to interact within the areas of communication and behavior, which can be skills like turn taking, initiating, responding, asking for something, or giving something (Hanglein & Arak, 2016).

Students identified with autism spectrum disorder are not the only children who can and have benefitted from social skills instruction (Laugen, Jacobsen, Rieffe, & Wichstrom, 2017). In Laugen, et al's study, they found that preschoolers who had hearing loss were discrepant in their social abilities once they received hearing aids due to the fact that they had more limited interactions with people (Laugen et al., 2017). Due to the smaller portion of social interactions, the students who previously had hearing loss needed to 'close the gap' in the deficit area with explicit, early intervention (Laugen et al., 2017). Most of the students were able to make up the social skills but it was not without intervention (Laugen et al., 2017). The study did not include students on the autism spectrum, identified that the explicit instruction is beneficial for others who do not have the diagnosis or traits of it.

Another study focused on social skills instruction and interventions for preschool-aged students because there was a need for behavioral and social redirection (Kthc & Gungor Aytar, 2017). The interventions delved into the gap between egocentrism and the ability to create peer and adult relationships, and how that can relate to behavior. The study found that with the appropriate instruction, perceived 'negative' behaviors, such as aggression and noncompliance, decrease ((Kthc & Gungor Aytar, 2017). Because this study focused on preschoolers who did not have a diagnosis of autism spectrum disorder, it highlights the fact that all students can benefit from appropriate, immediate, early intervention of social skill instruction, especially at the preschool level in order to decrease behaviors that are perceived to be 'negative' (Kthc & Gungor Aytar, 2017).

Students who use augmentative and alternative communication (AAC) devices have social skills needs, too, typically, due to their complex communication needs (Therrien & Light, 2018). This type of communication can include picture exchange, core boards, tablets, or a variety of other 'devices' that help relay information in ways other than verbal. By teaching social skills to typically developing children, along with those who use an AAC device, the overwhelming majority of children had their social skills in turn taking and joint attention improve due to the increased interactions and explicit instruction on how to use the device and how to interact (Therrien & Light, 2018). The increased interactions gave both sets of student's opportunities to practice the skills that were taught. Additionally, in another study that focused exclusively on the Picture Exchange form of AAC, students who were taught peer-mediated social skills strategies gained very positive results for both sets of students. The target students were able to increase their basic social skills while the typically developing peers gained in the area of social acceptance (Thiemann-Bourque, Brady, McGuff, Stump, & Naylor, 2016).

Social skills are not just something to 'tick' off on the way through childhood but is something that is necessary and to be built upon, such as reading (Li, Hestenes, & Wang, 2016). In the long run, the goal is to have friends, but in order to do that, first a child needs to learn to interact with others. In preschool the way to make friends is to play with others, which requires social skills. Students with lower social skills typically have lower play skills, which results in lower friendship skills (Li et al., 2016). These skills need to be able to be generalized between centers and with a variety of different people, also.

Social skills are also important beyond play in preschool, as there have been numerous studies linking positive social skills and higher academic abilities (DeLay et al., 2016; Denham, McKinley, Couchoud, & Holt, 1990). Elementary-aged girls who received explicit social skills instruction, with embedded peer influence, found a positive correlation in math grades, as well as better relationships with themselves and with teachers (DeLay et al., 2016). Denham, McKinley, Couchoud and Holt found through their longevity study that the more favorable social skills a child had in the early childhood age, the better impact it had later on in their life, such as in likeability and cognitive skills (2016).   In the end of Denham et al's study, the goal is for students to be able to create meaningful, lasting friendships with their peers (2016).

Based on Iowa's Statewide Voluntary Preschool Program, there are no direction as to what curriculum to utilize for social skills, or even if one has to be used (Statewide Voluntary Preschool Program for Four-Year-Old Children, 2019). The decision is left up to the preschool program, with school districts and independent preschools making the call for themselves. But, being a public school, it includes students with disabilities, having social skills instruction is a beneficial piece to a student's education, as this literature review has identified.

For this action research, all of the components identified throughout the paper will be in play.   The target students will be identified through an individual education program (IEP) with goals in social behavior and social communication, where social skills deficits have been identified, such as how to initiate peers, how to respond to peers, and how to engage in play with peers. Students in the action research have both verbal communication and/or use an augmentative or alternative communication device, such as a 36-picture core board in addition to researcher verbal communication modeling. Using the Learning Experiences - An Alternative Program for Preschoolers and Parents (LEAP) method (which was designed for students on the autism spectrum), the four target students will be instructed on how to get a friend's attention with the whole group, and then again explicitly taught and practiced it through specially designed instruction using their method(s) of communication. This study was chosen for it is explicit, targeted instruction style, and that it is intended for students with autism spectrum disorder. No students in this study are diagnosed with autism spectrum disorder, nor do they exhibit traits of autism without a diagnosis. The students in this action research study also do not have any diagnoses, such as Down syndrome, cerebral palsy, or oppositional defiance disorder. For clarification, a disability is defined through an evaluation and individual education plan while a diagnosis is determined by a medical professional.

The goal for the action research is to determine the successfulness of using a social skills curriculum or program, created and implemented for students with autism spectrum disorder, with students who do not exhibit or are not diagnosed with autism spectrum disorder but still with significant discrepancies in social communication and social behavior, utilizing whichever form of communication the student uses. Explicit instruction from both whole group and 1:1 setting, along with practice, will allow students the chance to gain positive social skills. Data

will be taken over the course of the study, allowing for reflection on the effects in the social

behavior and social communication goals of the target students.

Method

Participants

There were four students included in this study, identified as Student A, Student B, Student C, and Student D. The students were each part of an inclusive 3-year-old or 4-year-old classroom, which has a ratio of 50% or less special education students. The 3-year-old classes hold 8 to 9 students total, while the 4-year-old class has 13 total students. Students A, B, and C are in the 3-year-old program while Student D is in the 4-year-old program. All students in the classes are explicitly taught how to 'get a friend's attention'. In this study there are three males and one female. Three students are Caucasian and 1 student is of mixed race of African-American and Caucasian. Two of the students come from a low socio-economic status background. None of the students that participated in this study have a medical diagnosis in relation to their disabilities in communication or behavior. Additionally, students who were exhibiting signs of autism were not included in this research study.

Student A is a child that just turned 4-years-old and did not receive Early Access services through the Area Education Agency. They were referred by their parent and found eligible for services in the area of communication, including social communication. They have verbal skills but is also exposed to the 36 word core board due to their low communication skills. This is the student's first IEP and has a goal in the area of social communication. They have been working on initiating and responding, answering and asking questions, making requests, and asking for help through play.

Students B has been served through special education services for about a year, with Early Access services prior to their third birthday. They have been served in the area of communication, including social communication. They also are exposed to the core board, often to increase the mean length of utterance (MLU). This student is in the 3-year-old classroom and working on initiating and responding, commenting, asking and answering questions, and making requests.

Student C had their fourth birthday just before the study began. They are part of a three-year-old class. This student has a social behavior goal, including initiating and responding to peers, engaging in conversations and responding to peers. This student had Early Access services that ended at their third birthday and has been served through special and general education since. This student has access to core boards but does not require them.

Student D was identified late, almost a year past their third birthday. They are part of a 4-year-old classroom and have been receiving special education services since the start of the school year. When this student started school, they had roughly 5 meaningful words or word approximations, with very little gesture and sign. They utilize the core board daily through play, snack, and literacy, along with other parts of the day. This student's social behavior goal focuses in on taking turns, play, engaging in conversations, responding and initiating, and giving objects to peers.

Measures

Data was collected through the students' IEP goals. Each student has an individual goal with specific skills they are discrepant in and working on in the domains of either communication or behavior and identified as social communication or social behavior. By using the students' individual IEP data collection sheets, data was taken on a variety of assigned skills,

such as engaging in conversations, initiating peers, or offering a toy. Within each specific skill, students are monitored and rated from 0-4 by how much prompting they required in order to be successful in the skill. All of the rubrics are the same in what the numbers mean. 4 means no prompting required, 3 means some prompting, such as repeating a question or reminding them to answer, 2 means more prompting, such as a sentence stem or partial model, while 1 means full script or full model. 0 means that the child did not perform the skill due to some form of refusal.

The data was collected roughly 2 weeks apart and during the students' centers, or free play, time of the preschool day through observation. The students received Specially Designed Instruction during centers, snack and table work time over the course of the two weeks, then through observation the data was collected by the researcher. It always started at expecting the student to receive a '4' score with observation, then the level of prompting worked its way down, as determined by the researcher and situation.

Due to the variations within each of the participants' individual education plans, each student had their own unique total score possibility, ranging from 16 to 24 points. Each goal had their own set of deficit skills outlined for the student, requiring data to be collected on it. For example, Student A had an overall possible score of 16 points, with each skill amassing a total of up to 4 points. This student's goal, then has 4 skill components (4 skills multiplied by 4 possible points each equals 16). Students B and C had 20 possible points, equaling 5 skill components, while Student D had a possible total of 24 points, equaling 6 skills. Due to the variation of total possible points, in order to compare and analyze the data, it is necessary to use percentages of scores rather than their raw scores. The baseline scores and the scores after the 6 weeks of new instruction were both divided by the students' total possible points in order to find the percentage

of acquisition before and after the intervention. Due the amount of different behaviors being

assessed,

Procedures

Each day, the participants received their specially designed instruction, which is outlined

in each of their Individual Education Plans. The specially designed instruction is based on areas

of discrepancy and drive what the instruction focuses on. The instruction for these 4 students

includes a combination from this list, based on student deficits in the areas of social behavior and

social communication: asking and answering questions with peers, engaging in conversations

with peers, initiating and responding to peers, making requests, requesting help, taking turns,

playing with others using a play scheme, and giving an object to peers. In conjunction to these

specially designed instruction-defined skills, the students are also learning the peer-mediated

strategies of how to get a friend's attention, along with sharing a toy and requesting a toy.

All students in the classroom learned the skills during whole group just prior to centers,

or free play. The research participants then started their specially designed instruction in the

centers, or free play, setting, reviewing the peer-mediated strategy from the large group setting

and practicing with the researcher in a controlled environment for 3-4 minutes, such as to the

side of the classroom, or at a center that is not densely populated. Additionally, preferred student

toys or objects were used in order to invite and increase participation, along with using their

method of communication. In this study in particular the methods of communication were either

verbal communication or using a combination of verbal and a 36-picture core board.

Then, during the typical specially designed instruction, through play, the students are

encouraged and taught to use it with other peers. This begins with preferred peers or peers who

had mastered the skill. The intent is that they would be good models and participants for the

social skills. The students in the study also have access to the skill steps through visuals, such as

the 'how to get a friend's attention' steps of : 1) looking at a friend, 2) tapping their shoulder,

and 3) saying their name, in order to help support them in this skill, along with helping the

researcher to follow the prompt hierarchy of least amount of prompting to full assist. The

amount of time the students worked with the researched each day varied due to their Individual

Education Plans. These four students' instruction was typically in the range of an additional 10-

15 minutes, not including the initial 3-4 minutes of explicit instruction at the beginning of centers

or free play which is explained above.

On data collection days, the students received the instruction large group and

individually, but then observed and only supported as they needed in order to collect true data.

During the center time observations, a student could receive a score of 0 through 4 which

determines the amount of support and prompting required to be successful at the skill. The

special education teacher was in charge of collecting the data in order to maintain consistency.

The key for the rating system is:

Key:

4 = Child performs skill when 0-1 indirect cue (wait time, repeat question, gesture) is

provided

3 = Child performs skill when 1-2 verbal direct cues/physical prompts are provided

2 = Child performs skill when a partial physical assistance/multiple verbal prompts are

provided

1 = Child performs skill when full adult assistance (hand-under-hand/modeling) is

provided

0 = Child refuses to perform skill, walks away, ignores adult, says "no"

This key was used for each individual skill within the goal. Each student was observed and rated on this scale for each piece of their individual education plan goal, which resulted in the variation of overall total possible score. For example, Student A had possible overall score of 16. They had 4 different skills under the one social communication goal that were accessed using the 4 point scale. They were not rated 4 different times on 1 individual skill.   Following that logic, Students B and C had 5 skills under their overall goal worth 20 possible points and Student D had 6, totaling 24 possible points.

Results

For this action research study, quantitative data collected prior to the implementation was taken in order to help determine and compare the findings of the new model of instruction. Overall, the goal was to determine whether utilizing researched systems of teaching peer mediated skills to students on the autism spectrum were beneficial to students not on the spectrum, but with disabilities and social behavior or social communication goals. There was minimal researcher bias in this action research study. Data was solely taken by an early childhood special education teacher with 3 years of teaching experience in the field and extreme knowledge in the action research study protocol and teachings. Quantitative data was taken three times during the action research study, with limited days off between instruction in order to promote the most accurate results. The quantitative data was taken using a coding system, 0-4, to determine the amount of support or prompting the child needed to complete the skill (4=no prompting required, 3=some prompting, such as repeating a question or reminding them to answer, 2=more prompting, such as a sentence stem or partial model, 1=full script or full model, and 0=that the child did not perform the skill due to some form of refusal).

Each student has their own independent goals on their individual education plans with some overlap in skills within the social behavior or social communication realm. The data was gathered through observation of the students' behaviors, with teacher intervention implemented following the prompting hierarchy outlined on the 4-0 point scale. The students were scored on the rubric based on where they were successful with the amount of prompting outlined. The students in this study were chosen because they did not have an individual education plan that would be reviewed or re-evaluated during the action research period, which could change the

goals of the students. It would reflect a change in data collected and not appropriately show skill

acquisition.

The data collected is reflected in the following graph entitled 'Figure 1. Individual

Student Achievement'. In it, it shows an overall improvement in each of the participants scores

throughout the action research study period. Each of the four preschool students are reflected in

their own colored line. This represents the up and down of the measurements on each collection

date, but an overall gain for the individual students. It also represents how they made progress at

different rates.

Figure 1. Individual Student Achievement
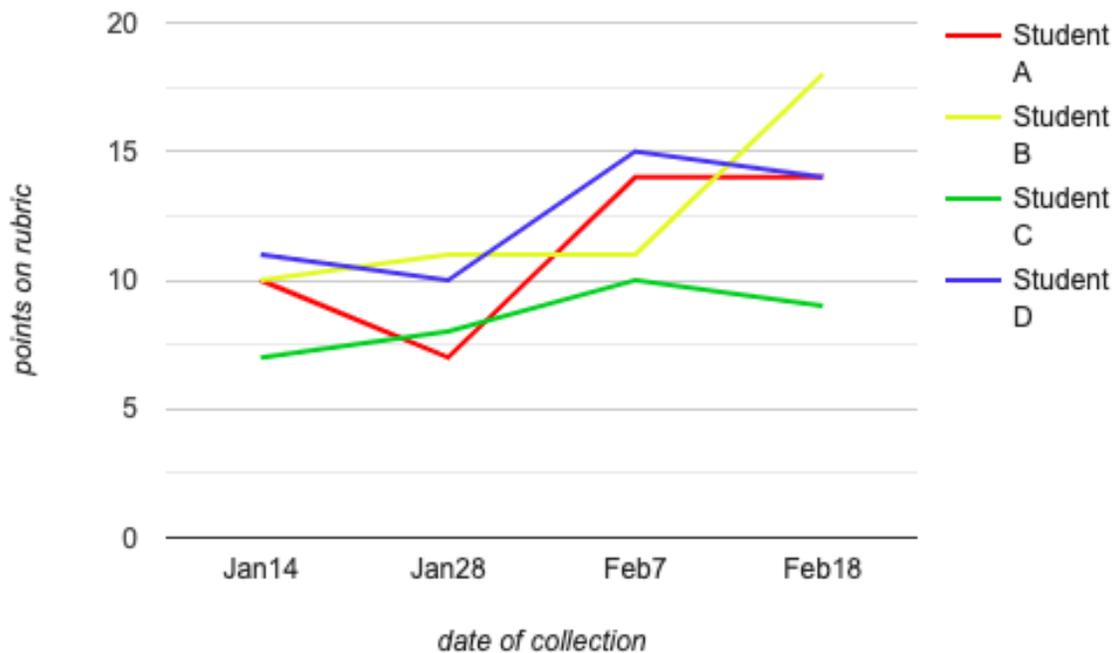
It is important to remember that in 'Figure 1. Individual Student Achievement' each

student is represented as an independent line and there is no trendline. Student A is represented

in red, Student B is represented in yellow, Student C is represented in green and Student D is

represented in blue. The horizontal axis reflects the time period of data collection, starting with

the initial collection date of January 14 prior to implementation of the action research study and

concluding on the February 18 collection date. The initial data point represents information

gathered prior to the action research study beginning, with the following representing the

duration and final date of collection. This graph shows the overall, individual student

achievement. Based on this graph, each student made progress in their respective social

communication or social behavior goal area skills.

In order to analyze the data, though, the data needs to be transferred to an appropriate,

comparable piece of data. It is inappropriate to compare the students' raw scores as they are due

to the variation of total possible points between each of the individual education plan goals. To

do this, each of the students' points were translated to percentages in order to be able to

accurately analyze them as a group.

In order to translate the scores into the necessary percentages, the initial score needs to be

divided by the over possibility of points. For Student A, it means the score of 10 points divided

by 16, the total amount of points possible, which results in .0625, which rounds up to 63%. This

represents the data prior to the instruction of peer mediated skills. The same method was done

for the data collected on February 18. For Student A, that meant taking the score of 14 divided

by the overall score of 16, which equals .875, rounding up to 88%. This method was done for all

of the student data in the action research study in order to be able to appropriately statistically

analyze the data.

Due to the variation in possible score amounts in individual education plan, and what each individual education plan is based upon, it is neither appropriate nor conducive to compare raw scores to one another, but rather the percentage of scores. These percentages reflect a more accurate representation of acquired skills and knowledge while taking out the variable of different total possible scores due to the individual education plan goal skill sets.

Using the data, a dependent groups t test revealed that there was a statistically significant difference in baseline scores on peer-mediated social skills ($M = 48.50$, $SD = 11.56$, $n = 4$), as compared to scores after 6 weeks of new instruction on peer-mediated social skills ($M = 70.35$, $SD = 22.31$, $n = 4$) following a peer-mediated social skills intervention with large effect size, $t(3) = 3.14$, $p \leq .051$, $d = 1.23$. On average there was a 21 point improvement between baseline and after the 6 weeks of new instruction. Due to $p \leq .051$, the study results are marginally significant.

Discussion

Summary of Major Findings

The data collection model over the course of the six week period of implementation of the new instruction of peer-mediated skills has shown to have a net positive impact social behavior and social communication skills. Each student in the group made a positive increase on their individual education plan goals, respectively. Overall, the students had an average increase of 22% in their social communication and social behavior skill acquisition over the 6 week period. This rate is markedly higher than the average rate of gain without the instruction, which is 11%. This amount of growth shows that students who are exposed to and instructed in peer-mediated social skills have a higher rate of growth and skill acquisition than students who are not.

Although there was growth for the students involved, Student C made the least amount, and it was quite similar to the expected growth rate based on what the Individual Education Plan team determined prior to the action research study. There are numerous factors that could play into this, such as disruptions in their home life, which this student did experience through the 6 week study. Overall, with the positive reflection on the instruction, the team can start to look to more advanced skills within the area(s) if the students are still discrepant from peers in skill acquisition.

Limitations of the Study

This study was implemented as designed with minimal changes. There were two snow days, along limited with absences by the students and none by the teacher. Due to the small amount of the both snow days and absences, they were not noted as they did not make a

particularly large impact on the study. An additional impact to the study is the difference

between days of attendance for students. Students A, B, and C are all in a three-year-old

classroom that meets for two three-hour morning sessions per week, making it a total of six

hours per week of instruction. Student D is in the four-year-old classroom that is four afternoons

per week for three hours, totaling twelve hours per week of instruction.

Another limitation of the study is the sample size of students. For this action research

project, only 4 students were included. It is difficult to truly see the effect size of the instruction

without including a wider variety and larger number of children. This study would benefit from

being repeated with a larger amount of students to confirm the results.

Family life could be considered a limitation of the study based on how much the families

encouraged the peer-mediated strategies in their homes. Families were all aware of the

instruction, and what it entailed. Since three of the students only had it twice per week, if a

family also encouraged the communication and behavior skills at home, they were reinforcing it.

It was not mandated, required or necessary for families to do this, although I know at least one

did encourage the peer-mediated strategies for their student home.

Further Study

There is one classroom that is fully implementing and teaching peer-mediated strategies

for the whole class during large group instructional time, while also encouraging it for all

students through 'I am a good friend' bracelets. When a teacher, associate, speech-language

pathologist, or any other adult in the room, sees the skill being used in a generalized environment

(not set up by an adult), they acknowledge it and give the student(s) involved in the interaction a

bracelet. It has been proposed, and begun, to incorporate this method of teaching and learning

social skills throughout the other preschool classrooms in order to see if they can increase the

ability to utilize the appropriate skills. Additionally, for students identified through special

education and have a deficit in these skill areas, other peers need to know how to appropriately

respond so that the students can be successful and learn how to generalize the skills.

Another interesting study would be to see the effect of these social skills taught in

preschool, and how, or if, it translates to success in kindergarten. As it stands currently, the Mid-

Prairie State-Wide Voluntary Preschool Program overall emphasizes social-emotional skills over

academics. Mid-Prairie's kindergarten program then transitions to an emphasis in academic

skills as the priority. If implemented appropriately in preschool, it would be interesting to see if

peer-mediated strategies helped students in academics in kindergarten. The study could focus on

students who receive special education services, or overall as an entire grouping of students,

based on who received the instruction in preschool. Additionally, increasing social-emotional

skills instruction in kindergarten, continuing the LEAP methodology of peer-mediated skills that

students are familiar with, would be interesting to study with the idea to see how or if it affected

students in special education, and in what ways.

Conclusion

Preschools are filled with students of all types, regardless of social status, ability, or any other marker of distinction. Inclusive preschools have the task to teach all students who enter their rooms, from the highest achieving to those who come from Early Access and need special education services. When a student has a disability in the areas of social behavior or social communication, or both, explicit peer-mediated strategies has been shown to help increase the student's skills, based on this action research study. The ability to foster the skills in social behavior and social communication is important in preschool, which is a time when children begin to make friends in a setting outside of their family or sitter. Providing children with explicit instruction in peer-mediated strategies who have a disability in the area helps to foster their skills and allows them to learn and use their skills within the preschool environment.

It is important that students learn how to navigate the social settings that formal schooling provides. There are social norms that peers learn quickly, such as how to get someone's attention, if they did not come into the school with the skills. When looking at these social behavior and social communication skills, students who have disabilities those areas need the skills explicitly taught and supported throughout their day in order to be able to generalize them.

The action research conducted through this study has shown that a positive correlation between explicit instruction of peer-mediated strategies and student acquisition of social communication and social behavior skills acquisition. As explicit instruction was provided in peer-mediated social skills, student scores increased individually on their Individual Education Plan goals improved, as derived from their data collection rubrics, as well as in the group as whole. As educators, specifically those in early childhood special education, continue to modify and guide their teaching, it is important to implement opportunities for learning social behavior

and social communication skills, both through explicit instruction and through planned

opportunities throughout the day.

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