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The Impact of Peer-Mediated Support on Social Interactions in a Middle School Inclusive Setting

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Abstract

The purpose of this study is to examine the effects of a peer-mediated support model in an inclusive middle school setting. The study includes a general education teacher, a paraprofessional, and 24 students enrolled in a Ceramics and Sculpture class. More specifically, 20 general education students and four students with Developmental Cognitive Delay (DCD). The inclusive class participated in a peer-mediated support model in which general education students engaged in social interactions and peer-academic support with their peers with DCD. The general education teacher and paraprofessional encouraged interactions and modeled for general education students how to provide support to their peers with DCD. The researcher collected data through teacher and paraprofessional conferences, student questionnaires, interaction counters, and an observational journal. The study found that social interactions will naturally occur when students with DCD are sitting near general education students who are comfortable interacting and willing to support peers with disabilities. For the results of this study to translate to other settings, the general education teacher, special education teacher, and paraprofessional should collaborate to individualize a peer-mediated support model to fit the needs and environment of the specific inclusive class.

Keywords: inclusion, peer-mediated support, secondary school, special education

It was not until 1973, as part of the Rehabilitation Act, that individuals with disabilities were protected by law in the USA. Individuals with disabilities were given the right to equal employment opportunities, and discrimination against them from participating in federally funded programs or activities was now illegal. Later, in 1975, the Education for all Handicapped Children Act (EHA) was passed and stated that every child has a right to education in their hometown public school mainstream class unless they cannot access learning in this environment. The EHA was a landmark act that set the stage for the future development of the American Disabilities Act (ADA) of 1990 and the Individuals with Disabilities Education Act (IDEA) of 2004. Both are acts that have been pivotal in the history of civil rights for individuals with disabilities. The ADA of 1990 prohibited the discrimination of disabled individuals in all settings to allow them the opportunity to participate in mainstream American life. IDEA of 2004 called for equity and overall improvement of the special education system to make it more individualized to support the specific needs of students with disabilities.

Before the EHA of 1975, there was little to no government or school system support for children with disabilities. A staggering stat from 50-plus years ago puts special education's changes into perspective. “In 1970, US schools educated only 1 in 5 children with disabilities” (IDEA, 2022). This means four out of five children with disabilities were either not going to school or were sent to a separate school, segregated from the mainstream classroom. Compare that to the 2018-2019 school year, in which 64% of individuals with disabilities spent 80% or more of their time in the general education classroom (IDEA, 2022). Inclusive education has grown dramatically, and as time has passed, we have learned more about the benefits, current limitations, contextual factors that impact success, and possible solutions to improve the outcomes for general and special education students.

Despite significant growth in inclusion numbers for all students with disabilities, when narrowed to the category of individuals with an Intellectual Disability (ID), the percentage decreases from 64% of students in special education spending 80% or more time in a general education classroom down to 17% (Doyle & Giangreco, 2013). Researchers have identified positive outcomes stemming from inclusive-based classrooms (Carter et al., 2016; Taylor et al., 2020; Wehmeyer et al., 2021). However, students with an ID have limited opportunities to participate in the mainstream classroom. Fewer opportunities to engage in the mainstream class, in turn, limits the possibilities for students with an ID to engage in social interactions and build meaningful friendships with same-age peers. The law states that every child deserves the right to participate in the mainstream classroom as much as possible, so schools must implement inclusion strategies that demonstrate positive outcomes for all students.

An inclusion strategy that data has shown to produce positive outcomes for general and special education students is peer-mediated support (Carter et al., 2016; Kart & Kart, 2021; Schaefer et al., 2016). In a peer-mediated support model, general education students get some training on supporting students with an ID in an inclusive setting. The idea is not to replace the direct teacher or paraprofessional support with a general education student but to use them as a supplemental support system to help engage students with an ID academically and socially. Peer-mediated support is designed to be a more natural and socially appropriate strategy for secondary mainstream classes than direct paraprofessional support, which can be unintentionally isolating (Giangreco, 2010). There is currently a limited amount of data surrounding peer-mediated support in a secondary setting (Wehmeyer et al., 2021), making it difficult to generalize the outcomes for students with an ID and their general education peers. The limited data pool and positive results from previous research have led to the question: What effects does

a peer-mediated support model have on the social engagement between students with intellectual disabilities and their general education peers in an inclusive middle school art elective class?

Theoretical Framework

Lev Vygotsky explains through his sociocultural theory that the development of cognition in children is grounded in social interaction (Vygotsky, 1978). Vygotsky believed in his framework that everything is learned on two levels. The social level (interpersonal), and then the individual level (intrapersonal). When someone spends time with a more skilled or experienced individual, those interactions can lead to new learning and cognitive development. As part of Vygotsky's theoretical framework, he defines the Zone of Proximal Development. In simple terms, the Zone of Proximal Development states that the potential cognitive development of an individual is higher when exposed to adult guidance or collaboration with more capable peers (Vygotsky, 1978).

Despite how critical Vygotsky's theoretical framework states that social interactions are for cognitive development, Individuals with Intellectual Disabilities (ID) spend less time in the general education environment where those social interactions with more capable peers are more likely. Students with an ID often need the most support in their development, so the limited time must be conducive to social interaction and engagement for all students. Peer-mediated support is a strategy that some researchers have found successful (Carter et al., 2016; Feldman et al., 2016; Schaefer et al., 2016) in maximizing the social interactions and learning students with an ID have in a general education setting. Vygotsky's theoretical framework states that collaboration with more capable peers can help individuals reach their full learning potential. Peer-mediated support aligns with this framework by providing a structured opportunity for students with an ID to interact with others and learn from their peers.

LITERATURE REVIEW

Definitions

The US Department of Education defines an Intellectual Disability as "significantly sub-average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance" (2018). Individuals are eligible for Special Education Services under the category ID if they demonstrate a Full-Scale IQ score of 70 or below. It has not always been standard practice for students with an ID to participate in general education classrooms. The Individuals with Disabilities Education Act of 2004 made it mandatory by law to implement the least restrictive environment (LRE) to support students with disabilities in a public school setting. LRE is defined by the U.S. Department of Education in IDEA 2004 as "To the maximum extent appropriate, children with disabilities…are educated with children who are not disabled, and special classes, separate schooling, or other removals of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily" (2019). It is important to note that inclusion and LRE include classroom environments and natural social environments such as hallways, the cafeteria, after-school activities, and social events such as dances, field trips or class parties (Wehmeyer et al., 2021).

Benefits and Limitations

Inclusive education demonstrates positive outcomes, increasing the social interactions in and out of the classroom for students with an ID and those without (Carter et al., 2011; Carter et al., 2016; Kart & Kart, 2021; Schaefer et al., 2016). Benefits associated with inclusion for

individuals with an ID include greater focus and enthusiasm for class, increased self-determination, improved postsecondary outcomes, and notable gains toward communication or social skills individualized education plan (IEP) goals (Carter et al., 2011; Carter et al., 2016; Taylor et al., 2020; Wehmeyer et al., 2021). Although difficult to quantify, researchers agree that an inclusive environment can increase both a sense of belonging and the amount of naturally occurring friendships for students with an ID (Carter et al., 2016; Kart & Kart, 2021; Wehmeyer et al., 2021). Positive outcomes of an inclusive setting for general education students include a reduced fear of human differences, an increased understanding of other people and their differences, improved social skills, and more opportunities for friendship (Carter et al., 2011; Carter et al., 2016; Kart & Kart, 2021). There are clear social benefits to inclusive education. Still, limitations, contextual factors, and the impact of peer-mediated support must be considered to determine the effectiveness of inclusion in a secondary setting.

Despite numerous positive outcomes for individuals with an ID and their general education peers, limitations of inclusion exist. The vast cognitive discrepancies between each individual with an ID make it difficult for teachers and paraprofessionals to differentiate content to meet the specific needs of all students (Doyle & Giangreco, 2013; Taylor et al., 2020; Wehmeyer et al., 2021). Communication challenges associated with an ID can make social interactions with general education peers challenging to navigate (Carter et al., 2011). Kart & Kart (2021) note that general education students can experience difficulty communicating with students with an ID which can cause them discomfort or anxiety. A counterpoint to inclusion is that students cannot practice transition skills that impact their postsecondary outcomes when participating in the general education curriculum (Taylor et al., 2020). Accessibility to the general education curriculum becomes more complex as students get older, and content becomes

more structured with fewer opportunities for social engagement (Kart & Kart, 2021). However, Causton-Theoharis et al. (2011) note that self-contained settings rely too heavily on the Special Education teacher to provide a robust transition skills curriculum. Carter et al. (2016) and Kart & Kart (2021) agree that the social benefits of inclusion in a secondary setting are more significant than the educational benefits for students with an ID and their general education peers.

Inclusion-based research is limited in its effect on general education students (Schaefer et al., 2016; Taylor et al., 2020). Individuals with an ID are frequently the primary focus of inclusion-based research, severely limiting the data pool surrounding the effects of inclusion on general education students (Taylor et al., 2020; Wehmeyer et al., 2021). In a broader scope, Wehmeyer et al. (2021) note there is a small batch of inclusion-based research to draw conclusions and generalize the benefits and limitations of inclusion in a secondary setting for students with ID or their general education peers. Although there is a limited amount of data, researchers have identified factors that impact the success of inclusion in a secondary setting.

Factors that Impact Success

Main factors that impact success in a secondary inclusive setting include missing crucial class time, teacher competence and attitude, and paraprofessional support (Causton-Theoharis, 2011; Chung et al., 2019; Feldman et al., 2016; Giangreco, 2010; Lekwa and Reddy, 2020; Wehmeyer et al., 2021). In a study observing 108 individuals with an ID or Autism Spectrum Disorder (ASD) or both, Feldman et al. (2016) examined the presence of high school students in general education elective classes, including art, music, PE, and theater. They determined that, on average, students are not present in the classroom for 15.8% of every class period (Feldman et al., 2016). Students come to class late and leave early for various reasons, so they miss crucial class time such as an introduction to the activity, social interaction before class, or a review at the

end of class (Carter et al., 2011; Chung et al., 2019; Feldman et al., 2016). Feldman et al. (2016) point out what may be obvious: students need to be in a general education class if there are to be social interactions and development occurring.

Teacher competence and attitude are crucial factors in the success of inclusion in a secondary setting (Doyle and Giangreco, 2013; Kart & Kart, 2021; Lekwa & Reddy, 2020; Rossetti & Goessling, 2010; Taylor et al., 2020; Wehmeyer et al., 2021). Causton-Theoharis et al. (2011) add that this includes the general education teacher and the Special Education teacher. It is challenging to meet the specific needs of every student, and research identifies a lack of training in undergraduate programs and continuing education on how to differentiate for students with an ID in the general education setting (Taylor et al., 2020; Wehmeyer et al., 2021). The challenge of meeting all your students' needs is especially true in a secondary setting due to the advanced curriculum and speed of content delivery (Taylor et al., 2020). A contextual factor that affects teacher competence is the administrative experience and outlook on inclusive practices (Wehmeyer et al., 2021). For teachers to receive adequate training, professional development, monitoring, and feedback, administrative support must be provided (Kart & Kart, 2021; Wehmeyer et al., 2021). General education teachers are responsible for giving direction and utilizing adult paraprofessional support despite the lack of adequate training available on best practices (Lekwa & Reddy, 2020; Walker, Douglas, Douglas, & D'Agostino, 2020). In addition to competence, a general education teacher must desire to include individuals with an ID in their general education class (Schaefer et al., 2016). A recommended practice for the special education teacher is collaborating with the general education teacher to provide student-specific engagement strategies and continued support in modifying and planning activities (Carter et al., 2016; Causton-Theoharis, 2011). Lekwa and Reddy (2021) add that the special education

teacher and general education teacher should discuss the paraprofessional's role and communicate that clearly to the staff member.

Paraprofessionals are often undertrained, underprepared, and typically tasked with supporting the highest need students in the school (Carter et al., 2016; Giangreco, 2010; Lekwa & Reddy, 2020; Walker et al., 2020). Lack of training can lead to a delivery of support that is not appropriate or effective for a student's disabilities or needs (Walker et al., 2020). Lekwa and Reddy (2020) note that there is little clarity and consistency among the roles and responsibilities of paraprofessionals working with students with an ID, which makes generalizing best practices and providing adequate training difficult. Walker et al. (2020) completed a systematic review of the literature to identify the results of training paraprofessionals in systematic instruction: how to differentiate, individualize assignments, and provide feedback for students based on their disability. Positive academic and social engagement outcomes were identified when they trained paraprofessionals in systematic instruction (Walker et al., 2020). However, it is essential to note that multiple researchers have identified a lack of available resources to provide adequate training to paraprofessionals (Giangreco, 2010; Lekwa & Reddy, 2020; Wehmeyer et al., 2021).

Using adult paraprofessional support can unintentionally isolate students with an ID from their general education peers from naturally occurring social interactions (Carter et al., 2016; Giangreco, 2010). Rosetti and Goessling note (2010) that individuals with an ID desperately want to maintain meaningful friendships, but frequently, the only people in their lives are paid to be there. Research shows that the closer an adult is to a student with an ID in the classroom, the less frequent natural social interactions occur (Carter et al., 2016; Feldman et al., 2016; Rosetti & Goessling, 2010). The goal of para usage is to fade adult support to limit peer social isolation (Giangreco, 2010; Rosetti & Goessling, 2010). Best practices for waning adult support include

assistive technology, project-based learning, co-teaching, and peer-mediated support (Carter et al., 2016; Feldman et al., 2016; Giangreco, 2010). The social validity and efficacy of peer-mediated support have been identified in research as a feasible alternative to paraprofessionals supporting individuals with an ID in the general education classroom (Carter et al., 2011; Carter et al., 2016; Giangreco, 2010).

Peer-Mediated Interventions

Peer-Mediated Interventions are strategies in which general education peers are trained to support students academically or socially in an inclusive setting (Schaefer et al., 2016). Carter et al. (2016) note that peers are not replacements for the teaching and support from classroom teachers or paraprofessionals but instead increase the involvement in shared learning opportunities provided by the content and curriculum. Peer support is more socially acceptable than paraprofessionals in a secondary setting allowing for more natural connections in and out of the classroom (Carter et al., 2016; Giangreco, 2010). A benefit of utilizing peers to support students with an ID in an inclusive setting is that peers are present outside the structured classroom environment. Presence in natural social environments increases the likelihood of interaction and friendship (Carter et al., 2016; MacFarland & Fisher, 2021). Connection in natural settings such as the cafeteria, hallways, school parties, and athletic events positively impacts a student with an ID's sense of belonging and social skills (Chung et al., 2019; Taylor et al., 2020).

Carter et al. (2016) conducted a study evaluating peer support arrangements among 99 high school students with an ID enrolled in at least one general education class. All students, including students with an ID and their general education peers, displayed positive outcomes

increasing social interaction (Carter et al., 2016). However, a limitation in peer-mediated intervention research is the lack of follow-up data to determine the generalization of skills during studies examining social skills and friendships (Carter et al., 2011; Carter et al., 2016; Schaefer et al., 2016). Schaefer et al. (2016) point out that social skills and friendships are difficult to quantify, making it challenging to determine peer-mediated interventions' long-term effects on social engagements. It's important to note that in the study by Carter et al. (2016), all adults and peers involved supported using peer-mediated interventions and received some form of training before it started. Teacher and peer attitude and competence are crucial factors in the success of peer-mediated interventions, which may be why Carter et al. found such positive results (Schaefer et al., 2016).

Despite the positive results that peer-mediated intervention has displayed, there are limitations in research and practice that make it difficult to determine the best practices of peer-mediated intervention (Chung et al., 2019; Schaefer et al., 2016). Researchers call for more data on the effects of peer-mediated interventions on general education peers (Carter et al., 2011; Carter et al., 2016; Schaefer et al., 2016). Like inclusive-based research, students with an ID are frequently the primary focus of peer-mediated intervention research (Schaefer et al., 2016; Taylor et al., 2020; Wehmeyer et al., 2021). Further research would add to the current evidence that peer-mediated interventions improve social interactions in an inclusive secondary setting for students with an ID and their general education peers.

Peer-mediated intervention as stand-alone support is not enough to increase social engagement in an inclusive setting. To begin, the para and peer work in tandem, gradually fading adult paraprofessional support as it becomes more familiar to the participants (Carter et al., 2016; MacFarland & Fisher, 2021). In successful interventions, students are trained or

equipped to interact and engage with students with ID (Carter et al., 2011; Carter et al., 2016; MacFarland & Fisher, 2021). The study by Carter et al. (2016) that displayed positive results for all participants equipped general education students with a written strategy list to engage ID students. Feldman et al. (2016) note that proximity and presence with peers are not enough. Students need to feel comfortable supporting a student with an ID for a peer-mediated intervention to be successful. Training and engagement ideas or tools can provide that comfort. However, are all the training and resources necessary for peer-mediated interventions feasible in a mainstream setting? The social benefits of peer-mediated interventions in a secondary environment make it an appropriate solution to isolating students with an ID.

Conclusion

According to LRE, every student with a disability has the right to participate in a general education setting. Research shows that doing so benefits students with an ID and their general education peers (Carter et al., 2016; Kart & Kart, 2021; Wehmeyer et al., 2021). The benefits of inclusion in a secondary setting rely on the combination of factors discussed in this review, such as paraprofessional and teacher competence, content and curriculum, presence in the general education room, and peer support (Causton-Theoharis, 2011; Feldman et al., 2016; Kart & Kart, 2021; Lekwa & Reddy, 2021; Taylor et al., 2020; Wehmeyer et al., 2021). Peer-mediated support in a secondary inclusive setting demonstrates positive results in increasing social interactions between students with an ID and their general education peers (Carter et al., 2011; Carter et al., 2016; Schaefer et al., 2016). The purpose of the accompanying action research study is to examine the impact a peer-mediated intervention in an inclusive middle school art elective setting has on the nature and frequency of social interactions in the classroom.

Methodology

This action research study implemented a peer-mediated support model with a mixed-method research methodology in an inclusive middle school setting over two months. In the interest of triangulation, classroom observations, informal pre and post-intervention conferences with the teacher and professional, an interaction counter, and student questionnaires were implemented. The study was designed to analyze the impacts of a peer-mediated support model on the social engagement of students with an Intellectual Disability (ID) and their general education peers.

The subjects in this study were enrolled in a combined middle school 7th and 8th-grade Ceramics and Sculpture class located in a diverse western suburb of Minneapolis, MN. The course is an art elective that students can request the year prior. There were 24 participants included in the study, four of whom receive special education services under the category of Developmental Cognitive Delay (DCD). Three of the DCD participants were in 7th grade, while the remaining was in 6th grade, the only one in the class. Of the remaining 20 general education participants, eight were 7th, and twelve were 8th graders. It's important to note that this study was designed and carried out by the case manager of the four students with DCD and the researcher has strong background knowledge of each of their unique abilities.

Before the eight-week intervention and data collection period began, the researcher spent two weeks observing Ceramics and Sculpture to allow all students to become familiar with a new adult face in the classroom. As case manager and primary teacher for the four students with DCD, the researchers presence in the classroom could impact their classroom behavior and class engagement. Extra time was spent in the classroom to create as natural an environment for the intervention as possible. Upon receiving permission from participants, pre-intervention data was ready to be collected, followed by implementation of the eight-week intervention.

Pre-intervention conferences (see Appendix A and Appendix B) were held with both active participants in the study, the teacher and paraprofessional. The conferences took place in a one-on-one setting. In the pre-intervention conference with the teacher, the researcher asked questions to gain insight into her previous experiences teaching an inclusive classroom, utilizing a paraprofessional, current engagement strategies, and attitude towards the intervention and peer-mediated support. As a part of our discussion, the researcher and teacher created a new seating chart that we both felt would be a good fit for the peer-mediated intervention. They used their knowledge of student relationships to separate the students with DCD into peer groups that we felt would support the intervention. The paraprofessional pre-intervention conference was similar to the teachers in gaining background knowledge into previous experiences working with individuals with significant disabilities and her attitude towards the intervention. In addition, we discussed her current role in Ceramics and Sculpture, strategies she uses to engage the students with DCD, and any prior training provided by the district or special education staff. As part of this peer-mediated intervention, the paraprofessional was asked to decrease direct support to the students with DCD to encourage more peer engagement.

Once conferences were conducted with the active participants, pre-intervention student feedback was collected (see Appendix D). Students were asked to provide feedback on their preferred method of work completion, their current level of peer engagement, willingness to support peers, and comfortability working with a disabled individual. All students, including the students with DCD, were given 10 minutes to complete this questionnaire at the start of class. After all the students submitted feedback, the researcher showed a brief presentation to build context around what a peer-mediated support model would look like and how that would impact their Ceramics and Sculpture class. Data obtained in the pre-intervention student questionnaire

influenced the researcher and teacher's decision about where students would sit for the intervention. Students were given their new seating chart (see Appendix F) and an engagement menu (see Appendix C) to provide ideas and strategies to engage peers socially and academically. After collecting all pre-intervention feedback, the eight-week data collection period began.

Each day, the researcher updated an observational journal (see Appendix G) to collect data on multiple factors of the intervention. These factors included: the arrival and departure times of students with DCD, recording the lesson or activity for the day, noting any contextual factors such as absences or school events, and providing a narrative of any significant interactions or noticings throughout the class period. In collaboration with the observational journal, the researcher kept an interaction counter (see Appendix E) to include quantitative data in the study. The interaction counter was a way to record the frequency and the nature of interactions. Interactions were sorted into peer-academic support, social interaction, paraprofessional support, or teacher support. Due to the difficult nature of capturing the essence of an interaction, a brief note was added to reinforce why the researcher chose to select a type of interaction. The counter had student codes to observe any patterns surfacing about which peers provided the most support, how they offered it, and the students with DCD they engaged with. These mixed methodology data sources were designed to build a narrative surrounding the successes and challenges of the intervention.

After the eight-week data collection period, post-intervention feedback was collected from the participants. The teacher and paraprofessional completed a follow-up conference (see Appendix A and see Appendix B) to share their thoughts on the intervention. More specifically, they shared what went well, what was challenging, what they would change, and whether or not

peer-mediated support will be something they use or advocate for in the future. Students provided feedback by completing a similar questionnaire (see Appendix D) as the one completed before the intervention with three additional questions. The added questions allowed the students to share and expand on their experiences supporting individuals with disabilities and engaging in a peer-mediated support model.

Steps taken to collect data were tailored to demonstrate an accurate representation of a peer-mediated support model in an inclusive setting while maintaining research-based implementation practices. The mixed methodology used in this study built meaningful data surrounding the social and academic impacts of implementing a peer-mediated support model in an inclusive middle school setting.

Data Analysis

The data obtained from the pre-intervention teacher and paraprofessional conferences was in the form of audio recordings and interview transcripts. In a review of the pre-intervention data, the audio recordings were reviewed multiple times to identify contextual factors that could impact the study's outcome. More specifically, the researcher identified key information related to their competence in supporting individuals with significant disabilities, the current status of supervision roles in the class, and any pre-existing goals or beliefs for the peer-mediated intervention. The post-intervention conference data allowed the researcher to analyze feedback from the active participants regarding the benefits or drawbacks they experienced implementing a peer-mediated support model. In addition, the researcher recorded their thoughts on this intervention's future use and feasibility in a middle school setting.

Student questionnaire pre-intervention data was in the form of multiple-choice questions. Data was sorted by student and question to isolate important information pertinent to the study.

The researcher identified key information related to who students rely on for support in their Ceramics and Sculpture class, student comfortability interacting with disabled individuals, and their willingness to help peers. The post-intervention questionnaire included the same questions to reflect on changes during the study. In addition to the same questions, three questions and a space for a short answer response were added to allow students to provide feedback on the study. The data from the three additional questions allowed the researcher to analyze the effects of a peer-mediated support model from the students' perspective, gaining insight into the challenges and success they experienced.

The observational journal kept in this study created narrative data that encompassed the contextual factors and significant interactions that took place throughout the eight-week data collection period. The researcher used the observational journal data throughout the study to reflect on the intervention and make slight changes to increase engagement. The significant interactions recorded in the journal during the eight-week data collection period were analyzed by me to determine several factors leading up to those interactions. The narrative data collected through the observational journal built context in the data around the frequency and nature of interactions recorded in the interaction counter data tool.

The interaction counter used in this study collected data through a tally chart with brief observational notes. The data were sorted into general education student frequency of interactions with students with DCD and the nature and frequency of interactions for the students with DCD. Upon sorting the data into these categories, the researcher identified patterns in engagement and growth throughout the study. The researcher connected significant interactions identified in the observational journal to the interaction counter using student codes. Student codes also allowed the researcher to compare the interaction counter data with the seating chart

to further identify factors that impact the outcome of a peer-mediated support model in a middle school inclusive class.

Findings

The purpose of this study was to examine the effects of a peer-mediated support model in an inclusive middle school setting. More specifically, the researcher targeted an inclusive Ceramics and Sculpture class with four students with Developmental Cognitive Delay (DCD) to increase their social engagement with general education peers. The researcher collected qualitative data sources to provide context, participant feedback, and a study narrative, while a quantitative data source maintained objectivity in the study while reinforcing key findings.

Before the eight-week data collection period, the researcher held informal teacher and paraprofessional conferences (see Appendix A and Appendix B) to obtain background information regarding their competence in supporting students with DCD, current roles in the classroom, and any beliefs or goals regarding the peer-mediated support model. The teacher and paraprofessional have varying experiences helping students with DCD in and out of the school. The teacher shared with the researcher that she has had no outside-of-the-classroom experience working with disabled individuals and was only in her second year of teaching. As a part of her education undergrad program, the teacher took one foundation of Special Education class but admitted, “Sitting here, can I remember anything from that course? No, I could not.” Despite minimal background experience or training, she shared that she hoped for the peer-mediated support model to improve the class community and increase engagement for the students with disabilities. The teacher shared her positive outlook stating, “I’m excited to try something new and can’t wait to see the changes peer-support causes in this class period.” The paraprofessional

shared this positive outlook but noted that the results will be different for each student based on the various needs of the students with DCD.

The teacher has no prior relationships with the four students with DCD before this school year, whereas the paraprofessional has a wealth of time working with each student. The paraprofessional shared that she has been in this school for five years and has worked with all four students with DCD. During the pre-intervention conference, the paraprofessional shared that she taught [Student 1] in pre-K. The paraprofessional shared with the researcher that most of her educational experience has been in the preschool realm but that she had been involved in child support since she was 18 (roughly 25 years). Through her many different roles in the preschool realm, the paraprofessional attended multiple pieces of training based on developmentally appropriate practices for children. She has not received any special education-specific training besides the mandatory personal care assistant (PCA) checklist all paraprofessionals must independently complete by the start of the school year. The paraprofessional noted, “Even though I don’t have the specific training, supporting the students with DCD has a lot of similarities with pre-K, so I feel experienced.”

The teacher and paraprofessional both shared that the paraprofessional currently provides more direct instruction to the students with DCD, but they try to communicate when to take turns or swap which adult is supporting them. The teacher shared, "It’s clear that the students with DCD prefer working with Ms. [redacted] compared to anyone else.” The paraprofessional agreed. However, she had found it helpful to take turns due to how much time she spent with the students with DCD throughout the day, and it can be challenging to keep them motivated or engaged. The researcher asked all students in the pre-intervention questionnaire to select whom they would go to if they needed help during Ceramics and Sculpture. All four students with DCD and only one

general education student chose the paraprofessional. Seventeen of the remaining 20 general education students chose the teacher, and the remaining two responded that they would ask a peer first. The teacher had noticed that many general education students "...don't necessarily see the paraprofessional as another teacher, but more so in here just to help the Special Ed. kids." She added that one of her main goals for this study is to get the class to view the paraprofessional as another teacher as the teacher thinks that will help their overall class community.

Upon completion of the intervention, the teacher and paraprofessional provided feedback on the successes, challenges, and recommendations for using peer-mediated support in the future. When asked to share one success in the intervention, the teacher and paraprofessional's first answer was the new seating chart. The paraprofessional shared that it was not as easy for her to provide direct support since the students with DCD were all spread out, but it caused the general education students to engage more. The teacher adds, "moving seats allowed for more opportunities for students to engage with one another" and that being intentional with a seating chart is a simple change that she will use in future years. The paraprofessional observed students with DCD become more comfortable sitting with general education students and noted significant growth for [Student 1] initiating greetings and farewells with her table group. The teacher and paraprofessional mentioned interactions in class were more natural between students with DCD and their general education peers when they switched the seating chart.

Along with the seating chart, the teacher and paraprofessional felt that engaging general education students in helping peers with DCD was less work for them. The paraprofessional expanded on this thought by saying, "there's not enough of me to go around, so it was nice being able to ask one of the students and for them to jump in and help right away." Although the students were always willing to help, the paraprofessional notes that some direct support will

always be necessary for a hands-on class such as Ceramics and Sculpture. The teacher said something similar in her post-intervention conference, stating, “Kids never hesitated to help when I asked them to,” and said she will “Definitely use this model next year from the start.” The simplicity of using a peer-mediated support model while getting positive outcomes and more engagement from the students with DCD was the teachers' reason for wanting to continue using this model in the future. The teacher and paraprofessional maintained a positive attitude towards a peer-mediated support model throughout the post-intervention conference. However, they both provided feedback on challenges they observed or experienced throughout the study and how they would improve the peer-mediated support model moving forward.

During the post-intervention conferences, the researcher asked the teacher and paraprofessional about their thoughts on the engagement menu (see Appendix C). Both identified the engagement menu as unsuccessful, and the teacher added, “It wasn’t feasible or realistic to try and implement that with so many moving parts.” When asked to expand, the teacher shared that the class is very hands-on, typically requiring direct adult support, limiting how often she could engage students in the menu. The paraprofessional “found it more effective to model how to engage a student than reading off a menu.” According to the post-intervention student questionnaire, students would agree with the paraprofessional. The researcher asked students to respond to the prompt *“I found the engagement menu helpful to engage my peers”* on a three-point scale (Agree, Neutral, Disagree). Only three students agreed, one of whom was a student with DCD. Seven students responded as “Neutral,” three of them students with DCD, while the remaining 14 general education students responded that they “Disagree” that the engagement menu was effective.

The teacher found another challenge to be not jumping in to provide direct support to the students with DCD compared to asking a peer to help. The teacher shared, “It’s your natural instinct as a teacher to just help them yourself because it feels easier, even if it’s not. That took some time getting used to.” When looking forward, the teacher noted that it would be important for them to start next year with this model for a few reasons. She felt it was challenging for students to fully engage with this model because it began halfway through the school year. “I feel students had a hard time buying in since we didn’t start right away and were so into our routine by second semester.” The teacher adds that she observed the general education students' “view of the paraprofessional’s role stayed consistent with before the intervention, and that could be fixed by starting the year in this model and making it the norm.”

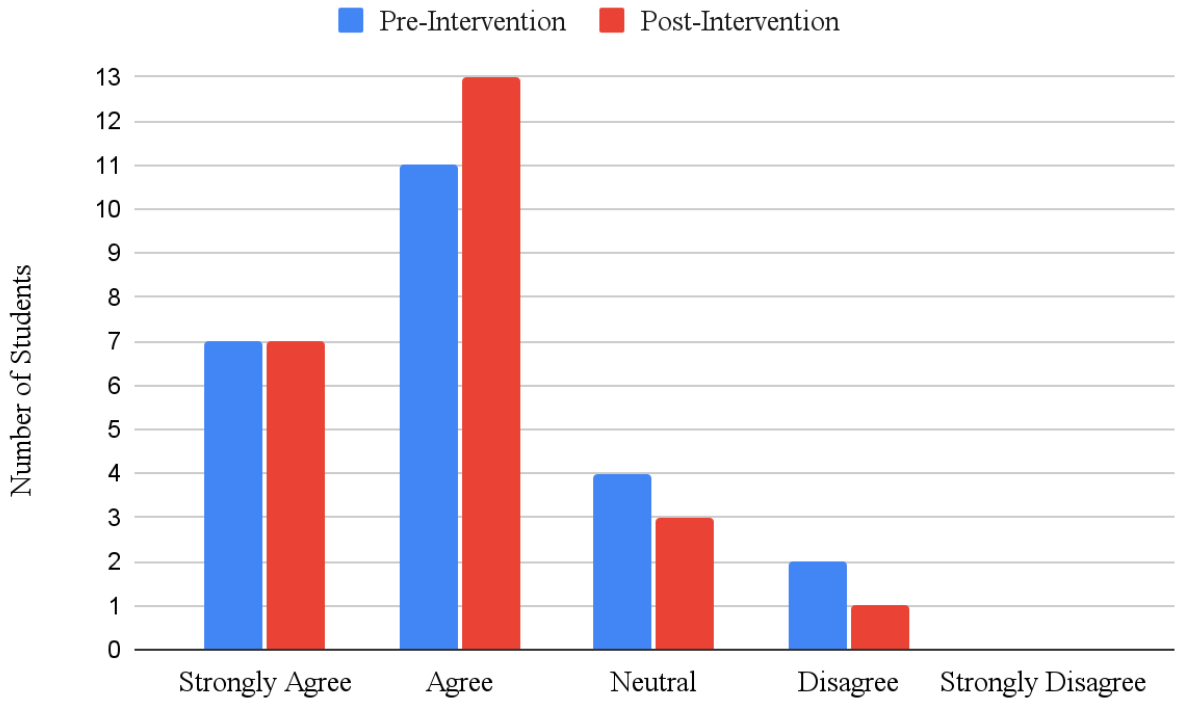
The paraprofessional identified the most significant challenge as the communication barrier between general education and students with DCD. The paraprofessional shared, "It can be challenging for me to hold conversations with some of them, and I work with them every day, so it’s even more difficult for a peer.” The researcher asked the paraprofessional to share ideas on overcoming communication or engagement barriers. The paraprofessional explained that “In an ideal world with all the time we want, we could give them some student-specific training or have them observe your (the researcher’s) classroom to see how you (the researcher) engage them as their primary teacher.” The paraprofessional in this study shared that she will not be coming back next year for family reasons but hopes they start the year in this model, whoever is in her role.

Along with the teacher and paraprofessional, the students provided feedback (see Appendix D) before the start of the intervention. Students were given the opportunity to respond to the statement “I am comfortable interacting with individuals who have a disability” using a

five-point scale (strongly agree, agree, neutral, disagree, strongly disagree). Data was collected from all 24 students in the class before and after the intervention and is shown in *Figure 1* below.

Figure 1

Student Comfortability Interacting with Individuals with Disabilities



Note. The figure above represents how comfortable students feel interacting with individuals with a disability before and after engaging in the study. Taken from the pre and post-intervention student questionnaires.

Students with DCD completed both the pre-intervention questionnaire and the post-intervention questionnaire. However, it should be noted that direct support from the paraprofessional was needed to complete the questionnaires. Three of the four students with DCD responded with “Neutral” to every question on both questionnaires while the fourth students with DCD did the same by responding with “Strongly Agree” or “Agree.”

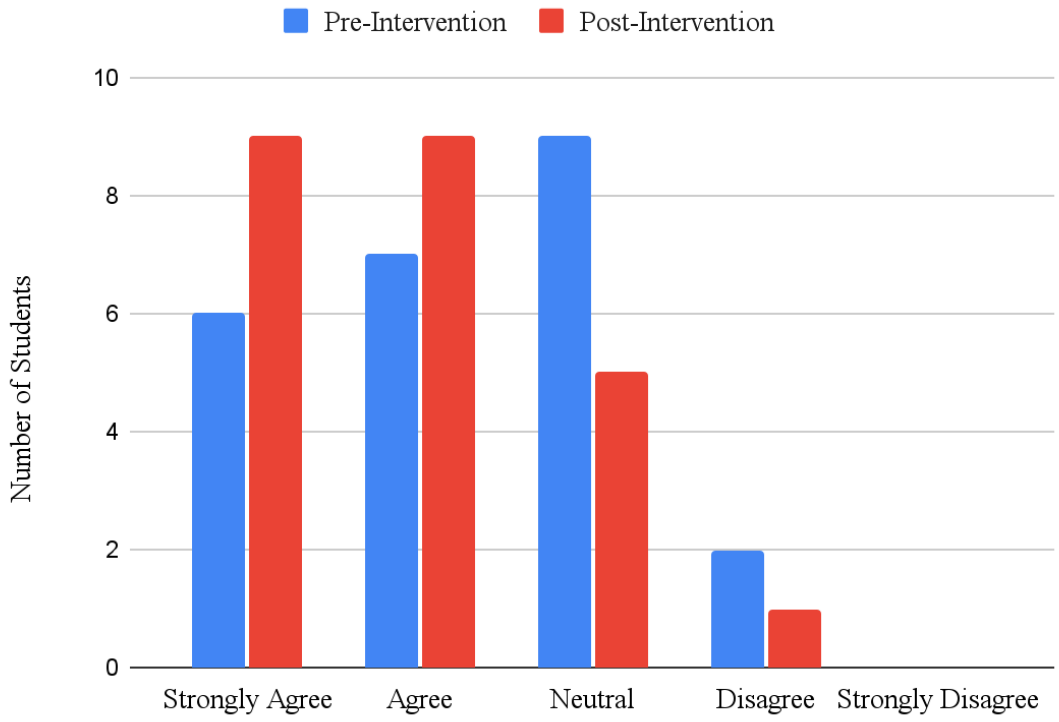
When isolating general education student questionnaires, 17 of 20 students responded with “Agree” or “Strongly Agree” before the intervention followed by 19 of 20 after the

intervention. There were many similarities between pre and post-intervention data, including the same six students responding with “Strongly Agree.” The vast majority of general education students in this Ceramics and Sculpture class feel comfortable interacting with individuals with a disability.

To gauge student willingness to participate in a peer-mediated support model, all students were asked to respond using the same five-point scale to the prompt “I am willing to support peers on projects or assignments.” Previous research notes that peer willingness to support individuals with disabilities is a critical factor in whether or not peer-mediated support can have positive outcomes (Carter et al., 2011). Data from before and after the intervention is shown in *Figure 2* below.

Figure 2

Student willingness to support peers on projects or assignments



Note. The figure above represents how willing students were to support peers on projects and assignments during Ceramics and Sculpture. Taken from the pre and post-intervention student questionnaires.

Students with DCD responded in the same way as with their comfortability. Three were "Neutral" and one was "Strongly Agree" for each question prompt on the pre and post-intervention questionnaires. Data obtained from the general education students displayed a change in willingness to support peers from the beginning of the intervention to the end.

Prior to the intervention, 12 of 20 general education students either "Agree" or "Strongly Agree" that they are willing to support peers on projects and assignments while six remained "Neutral" and two "Disagreed." The number of students that responded "Agree" or "Strongly Agree" rose up to 17 or 20 after the intervention while only two remained "Neutral" and one "Disagreed." There was a bigger change in *Figure 2* from the pre-intervention questionnaire to

the post when compared to the data in *Figure 1*. Students responded as comfortable interacting with individuals with disabilities, but that not equally as willing to support a peer on a project or assignment. Despite a difference in pre-intervention data in *Figure 1* and *Figure 2*, the majority of students responded as both comfortable and willing to support peers in their Ceramics and Sculpture class. Students who responded as both comfortable and willing in the pre-intervention questionnaire made up the majority of interactions between students with DCD and their general education peers recorded in the interaction counter throughout the study.

After the study, all students completed a post-intervention questionnaire with the same questions as the pre-intervention, with three additional questions. One question was to gauge how helpful students found the engagement menu (results explained above in teacher and paraprofessional conference data). The second question was *"Did you provide support to any peers during the last eight weeks?"* 9 of 24 students responded yes to this question, all of them general education students. The interaction counter identifies 13 of 20 general education students interacting with a student with DCD in some capacity throughout the study, but only nine self-identified as having provided support. When a student selected yes to this question, they were prompted to provide feedback via a short answer response. Responses are recorded in *Table 1* below.

Table 1

Student Feedback on Intervention

Student Code	Comment
[Student 6]	"I think it went well. I only have helped with small things that they couldn't figure out how to do but I think that it was successful."
[Student 7]	"I helped [Student 2] make some of her basket and we always said hi and bye to each other. She is funny :)"

[Student 8]	"I didn't really help at all, but it was fun having [Student 1] at our table!"
[Student 9]	"I think it went well, nothing really happened other than helping when they needed so I don't really know what else to say."
[Student 14]	"I think it went good, I mainly helped them with small things that they didn't understand but when I did help I think they understood better and they were really happy."
[Student 17]	"It went well and I had fun when I was helping them! And I also feel that they benefitted from my help too!"
[Student 19]	"[Student 2] was at my table and it was fun having her in our group for things."
[Student 22]	"My favorite thing was saying hi and bye to [Student 1] although I didn't always know how to help."
[Student 24]	"I helped [Student 2] make her basket weaving and I thought it went really well!"

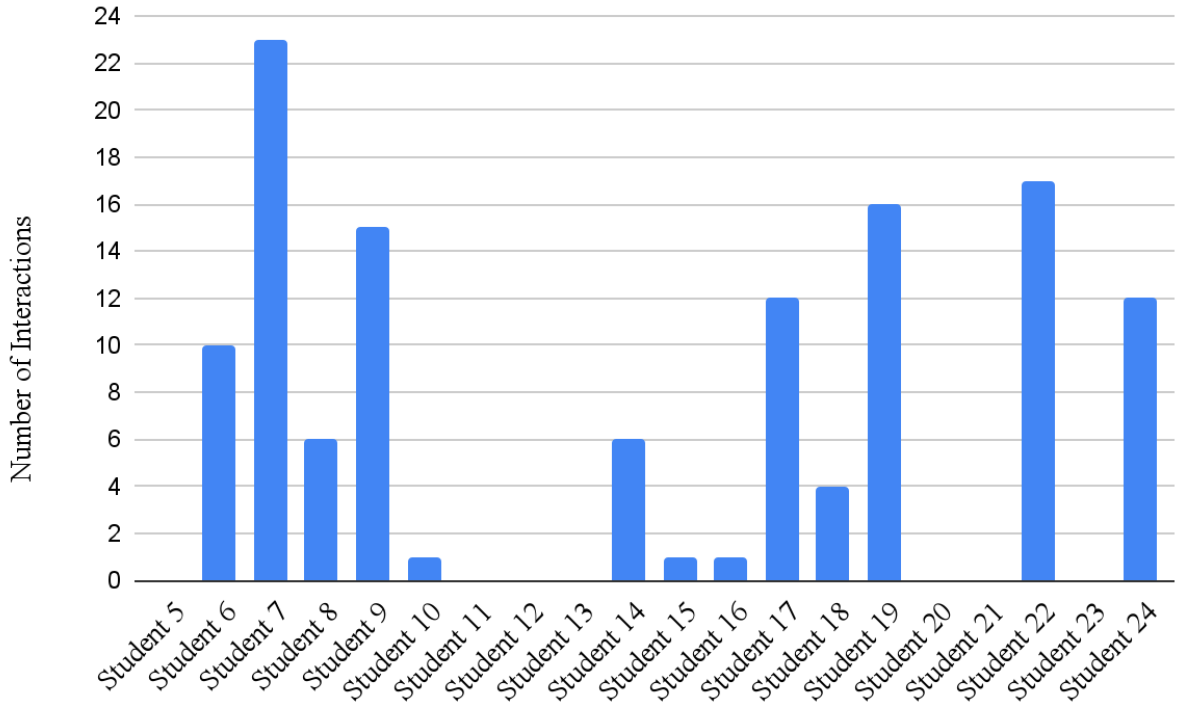
Note: The table above shows students' short answer responses about their experience participating in peer-mediated support. Taken from the post-intervention student questionnaire.

Upon analyzing the responses, some common themes emerged. The most common being that the students enjoyed having the students sit with them in their table groups. [Student 1] and [Student 2] were mentioned by name multiple times, which aligns with the data from the interaction counter below. [Student 1] and [Student 2] accounted for the most and second-most interactions recorded. Another common theme is that multiple students mentioned not helping much, or only helping on small things. [Student 22] mentions, "...although I didn't always know how to help." [Student 9] noted that nothing really happened, despite being involved in multiple significant interactions and engaging on a daily basis with [Student 4]. Specific data on the frequency of interactions between general education students and their peers with DCD are explored below.

The researcher used an interaction counter (see Appendix E) to observe any patterns emerging in which general education students frequently interacted with and engaged their peers with DCD. Data from the interaction counter sorted by general education student frequency of interactions is shown below in *Figure 3*.

Figure 3

General Education Student Frequency of Interactions with Students with DCD



Note. The figure above shows the frequency of interactions each general education student had with a peer with DCD. Taken from the interaction counter.

Narrative:

Of the 156 total interactions for the students with DCD recorded throughout the eight-week study period, 124 included general education peers. Patterns emerged as [Students 7, 9, 17, 19, 22, 24] consistently provided academic support or socially engaged their peers with DCD. Five of the six peers who interacted the most with the students with DCD responded with "strongly agree" on the pre and post-intervention questionnaires for their comfortability interacting with individuals with disabilities and their willingness to provide help to peers.

When comparing the frequency of interactions sorted by general education students to the intentional seating chart (see Appendix F) created by the teacher and researcher, patterns emerge. [Student 7] and [Student 22] sit directly next to different students with DCD, providing them multiple opportunities to engage each day. [Students 6, 8, and 14], seated at a table with [Student 1], combine to make up 31% of all interactions recorded. [Students 7, 17, 19, and 24], seated at a table with [Student 2], combine to make up 51% of all interactions. [Students 9 and 18] seated with both [Student 3 and 4] combine to make up 15% of all interactions. Of all interactions recorded between peers, 97% included a general education student who sits at the same table as a student with DCD leaving only 3% of interactions for students not seated near a peer with DCD.

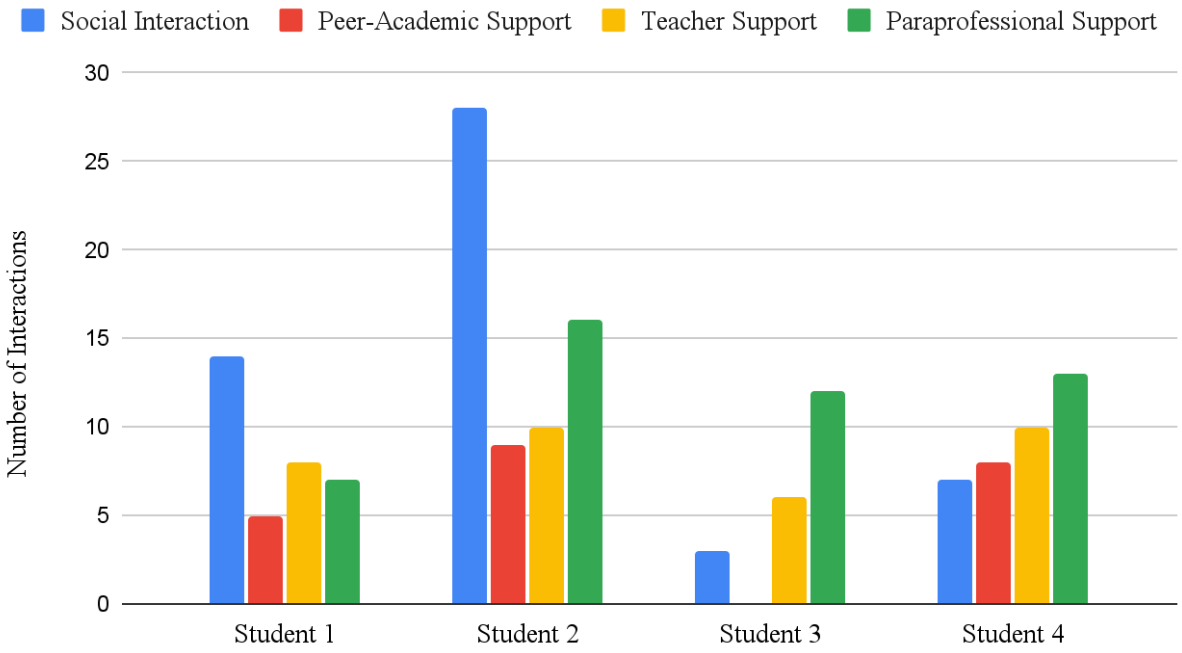
The researcher sorted the nature of interactions between general education and students with DCD into social interactions or peer-academic support. According to a common theme identified in the observational journal, social interactions often consisted of greetings, farewells, and simple questions or compliments about their artwork and clothing. An example of this noted in both the observational journal and interaction counter is when [Student 3] finished a yarn heart made for Valentine's day, and both [Student 9] and [Student 18] (tablemates) gave her a compliment regarding her work. Peer-academic support interactions included a wide variety of help given to students with DCD based on their unique needs. Support provided by general education students included simple tasks such as grabbing materials for a peer, helping a student cut, or writing their names on a project. Some students also engaged in more extensive support by providing one-on-one support. For example, [Student 24] and [Student 7] took turns independently working with [Student 2] to help her finish weaving her yarn basket. The researcher recorded as many interactions between general education and students with DCD as

possible. It's important to note that this study included observing multiple focus students at once, and it is possible interactions were not recorded.

In addition to peer interactions, the researcher recorded when the teacher and paraprofessional supported the students with DCD in the interaction counter. The researcher sorted data by the frequency of each type of interaction by the student in *Figure 4* below.

Figure 4

Students with DCD Frequency and Nature of Interactions



Note. The figure above represents the number of interactions for each DCD student sorted by the type of interaction. Taken from the interaction counter.

Upon analyzing all 156 interactions recorded, 55 were social interactions (35.3%), 46 were paraprofessional support (29.4%), 28 were teacher support (18%), and 27 were peer-academic support (17.3%). Simple social interactions occurred most often, while paraprofessional support remained a key factor for DCD student support. According to the paraprofessional in their post-intervention conference, she felt her role changed from direct support to a more classwide approach over time. However, data from the interaction counter

shows that despite a feeling of decreased support, the paraprofessional provided significantly more support to students with DCD than general education peers. It's important to note that each student with DCD has a unique set of differences that impacted the data results. The findings shared in *Figure 4* are discussed individually by each student to provide the context of the study in relation to their disability.

[Student 1] had 34 of 156 (21.8%) total interactions throughout the study. [Student 1] strongly desires to be independent and often refuses support from a paraprofessional or teacher to try to do a task on her own. Paraprofessional and teacher support are slightly above peer-academic support, while the most common type of interaction for [Student 1] was social interactions. Upon analyzing the observational journal, [Student 1] was timid and hesitant when she got a new seat but became more engaged with her environment as time progressed. During the sixth week of the intervention, [Student 1] began initiating greetings and farewells to her table mates, which continued throughout the eight-week data collection period.

[Student 2] had the most interactions of all students with DCD totaling 63 out of 156 (40.4%). Of the 63 interactions this student experienced throughout the study, social interactions were the most common at 28 (44.4%). [Student 2] has challenges with her speech and communication; however, she remains an outgoing student who enjoys laughing and joking. An example of this was observed in the observational journal. While rolling clay into coils, [Student 7] asked [Student 2], "What are you making?" [Student 2] responded with, "Ick!!" This made her tablemates laugh, but [Student 2] could not effectively communicate an answer to the question. [Student 2] often refuses adult help and avoids work completion despite her social engagement. Many paraprofessional support interactions recorded for [Student 2] included attempts to engage them in academic work.

[Student 3] had the least interactions among the students with DCD during the eight-week study. She had 21 interactions out of 156 (13.4%), with 12 of them being paraprofessional support. [Student 3] prefers to work with adults over peers and received no peer-academic support throughout the study. The paraprofessional and teacher can provide [Student 3] enough time to process while accommodating her communication needs, while her peers don't always do so. [Student 3] can engage in class activities independently without extensive support, limiting her opportunities to receive peer-academic support or engage socially.

[Student 4] was involved in 38 out of 156 (24.4%) total interactions. [Student 4] engaged in all types of interaction in a balanced manner, although teacher and paraprofessional support are both more common than peer interactions. [Student 4] completed assignments and projects in this class independently but still relies on the paraprofessional or teacher when she has questions. Due to contextual factors outside of the school setting, peer interaction is not a common practice for [Student 4] and can cause her anxiety. According to the observational journal, peer-academic support and social interaction increased as [Student 4] became familiar with her tablemates, especially [Student 9]. A significant interaction recorded in the observational journal for [Student 4] occurred when [Student 9] asked her to make a paper mache heart for their Valentine's day project. [Student 4] quickly accepted the invitation, and they completed the heart together over the subsequent two class periods.

The observational journal (see Appendix G) served as a qualitative data tool to add a narrative to the contextual factors of the study. More specifically, contextual factors include recording significant interactions, class content (projects and assignments), changes made throughout the study, and how often students with DCD came late or left early from class. One factor observed by the researcher is that all four students with DCD left class early every day.

Ceramics and Sculpture is their last class period of the day, which means students need time to get ready for the bus. Due to their disabilities, students with DCD need extra time to transition home. Leaving before the end of class was an unavoidable contextual factor that must be considered when reading this study's results. Another contextual factor that needs consideration is the distraction of the researcher in the classroom for the students with DCD. [Student 3] and [Student 4] in particular had difficulty adjusting to their primary teacher and case manager observing them in the classroom. Both students spent considerable time looking back at the researcher and giggling or losing focus on the task at hand.

The contextual factor that played a significant role in the frequency and nature of interactions in this study was the project or activity students were completing in class. Throughout the study, there were four different projects, and each had different results. The first assignment was to roll the clay into coils and design a bowl. Rolling the clay took fine motor skills that some of the students with DCD could not do, meaning they required much direct support. Most of the direct support came from the paraprofessional because the project was independent, and general education students were working on their own. The next project was a short, two-day unit of making Valentine's day crafts. The crafts were simple, and students were working together in groups. Both [Student 3] and [Student 4] experienced their most significant social interactions throughout the study during this unit. The third project was also the most significant change made during the study.

Initially, the teacher was planning to go right to the last project, but in collaboration with the researcher created a simple two-day group project as an introduction assignment. Each table group was to build a basket strong enough to carry two small bricks across the classroom using newspaper and tape. This introduction activity was the most effective project in increasing peer

interactions throughout the study. It was very collaborative, and groups naturally found ways to involve the students with DCD. [Student 1] was in charge of ripping tape for the group (suggested by the paraprofessional). [Student 2] was helping rip newspaper. [Student 3] and [Student 4] fully participated in brainstorming ideas and building the basket.

During the testing day, [Student 2]'s group chose her to carry their basket. As [Student 2] carried their basket, the class clapped and cheered her on as she made it across the room. At the finish line, [Student 2] dropped the basket and threw her arms up, yelling, "Yeah!" The teacher reflected on this significant interaction in the post-intervention conference saying, "That's a perfect example of the community I want in here all the time."

The final project was weaving a yarn basket. This assignment turned out to be a challenge for all students, similar to building clay bowls. There were limited opportunities for general education students to support peers with DCD because they needed help themselves. Social interactions continued to stay consistent throughout basket weaving, but the peer-academic interactions declined significantly until general education peers finished their projects and had time to help.

Using the data collected and explored in the findings, the researcher can draw conclusions on the effects of a peer-mediated support model on an inclusive middle school classroom.

Conclusion

Before the eight-week intervention period, students with DCD were isolated from their general education peers, rarely interacting socially or academically during their inclusive Ceramics and Sculpture class. Vygotsky's sociocultural theory (1978) stresses how critical interactions and social engagement between peers are in a child's cognitive development. The

study implemented a targeted seating chart, intentional lesson planning, and adult encouragement for general education students to engage peers with DCD. The data was analyzed to examine the effects of a peer-mediated support model on the social interactions between students with Developmental Cognitive Delay (DCD) and their general education peers in an inclusive middle school setting. The researcher can identify several conclusions regarding the effectiveness of a peer-mediated support model.

One conclusion that emerged is that when provided the opportunity, general education students who are comfortable interacting with and supporting peers with disabilities will naturally interact and engage with DCD students. Using their students' background knowledge, the researcher and teacher collaborated to create the targeted seating chart that resulted in positive outcomes. Natural social interactions between general education students and students with DCD sharing a table increased throughout the eight-week intervention period. In addition, the proximity that DCD students are to their general education peers played a role in how often they interacted with one another. General education students seated directly next to their DCD peers engaged most often in social interactions and peer-academic support during the study.

Collaboration between the researcher, teacher, and paraprofessional proved essential throughout the study. Frequent check-ins regarding the effectiveness of peer-mediated support and the study allowed the adults to continuously brainstorm how to improve the intervention. Most of the significant interactions in the study occurred when the researcher and teacher collaborated on a lesson plan or activity. At a middle school level, content becomes more complex and moves faster, making it challenging to differentiate content for students with an Intellectual Disability (ID) (Kart & Kart, 2021). Including the researcher (case manager) of the

students with DCD in lesson planning contributed insight into the specific needs of each student to help differentiate and individualize projects and assignments.

Multiple researchers note that teacher competence and attitude are crucial factors of success in an inclusive secondary setting (Doyle and Giangreco, 2013; Kart & Kart, 2021; Lekwa & Reddy, 2020; Rossetti & Goessling, 2010; Taylor et al., 2020; Wehmeyer et al., 2021). Both the teacher and paraprofessional shared in the pre-intervention conferences that they hoped for increased student interaction and community within the classroom. Their attitude and goals for success led to the teacher and paraprofessional providing informative feedback to the researcher and consistent engagement in implementing the peer-mediated support model. The teacher and paraprofessional displayed competence and a positive attitude throughout the study and were responsible for many of the conclusions the researcher identified while analyzing the data.

Lastly, the researcher can conclude that the nature of a student's disability impacts their ability to engage in a peer-mediated support model. The students with DCD in this study each have unique skill sets and need varying levels of support in a general education setting. Some students with DCD in the study displayed outgoing behavior toward general education peers, while others had difficulty interacting due to communication challenges and processing speed. Meaningful interactions in a peer support arrangement can lead to friendships down the line (Carter et al., 2016). Despite their varying capacities and ability to engage, the researcher observed all of the students with DCD experience a meaningful interaction during the study. The researcher can conclude that peer-mediated support in this inclusive setting is an effective model for increasing social interactions between students with DCD and their general education peers.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were drawn:

- When implementing a peer-mediated support model, engage general education students that are comfortable interacting and willing to support individuals with disabilities.
- The general education and special education teacher (case manager) should collaborate on lesson planning and creating a targeted seating chart to increase student interactions.
- The paraprofessionals' role in a secondary inclusive setting is more conducive to natural social interactions between students with DCD and their general education peers when they take a classwide support approach. Encouraging peer interactions and modeling how to support students with DCD can be an effective support model in a secondary inclusive setting.
- More research needs to be focused on the long-term effects of a peer-mediated support model. Meaningful friendships can be challenging to quantify, and the data collected in this study cannot encompass the impacts on students with DCD and their general education peers beyond the eight weeks.

The peer-mediated support model designed for this particular inclusive middle school class demonstrated positive outcomes for students with DCD and their general education peers. To translate these positive outcomes to settings beyond this study, the general education teacher, special education teacher, and paraprofessional should collaborate to individualize the peer-mediated support model to fit the students' specific needs, the course's content, and the classroom environment.

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Appendix A
Teacher Conference Questions (pre and post-intervention)

Teacher Conference Prompts: *Pre-Intervention*

- What experience do you have working with Developmental Cognitive Disability (DCD) students in or out of the classroom? Any prior relationship with the DCD students in your class?
- Have you received any prior training in Special Education (DCD)? Teacher preparation program, continuing education, in-service opportunities, or student-specific training?
- What strategies have you used to engage students with DCD in your curriculum and content?
- How is your school year going so far in all of your classes? Student engagement, behavior, etc.
- Do you have any experience utilizing a para in class? Any prior training?
- How does the paraprofessional support your 7th-period class? Direct, classwide, or mixed?
- How would you describe the peer interaction between DCD students and general education peers in 7th-period Ceramics and Sculpture?
- Are peers a viable option to support the DCD students within the curriculum of your class? Why or why not?
- What impacts do you envision implementing peer-mediated support could have in your 7th-period Ceramics and Sculpture?

Teacher Conference Prompts: *Post-Intervention*

- What were some benefits you noticed during the implementation of peer-mediated support in Ceramics and Sculpture?
- What were some drawbacks you noticed during the implementation of peer-mediated support in Ceramics and Sculpture?
- How would you compare peer interaction in this section of Ceramics and Sculpture compared to others?
- How would you describe the peer interaction between the Developmental Cognitive Disability (DCD) students and their general education peers now than before the intervention?
- Is using a peer-mediated support model something you would use in the future? Why or why not?
- Did you notice any differences in paraprofessional support throughout the intervention? Was there a decrease in direct student support?
- Was implementing a peer-mediated support model feasible for this elective art class? i.e. Did it create extra work for you? Were the results positive enough? Is direct paraprofessional support more appropriate?

Appendix B
Paraprofessional Conference Questions (pre and post-intervention)

Paraprofessional Conference Prompts: *Pre-Intervention*

- What experience do you have working with Developmental Cognitive Disability (DCD) students in or out of the classroom? Any prior relationship with the DCD students you support in 7th period?
- Have you received any prior training in Special Education (DCD)? Professional development, in-service opportunities, or student-specific training?
- How would you describe your role in 7th-Period Ceramics and Sculpture? Who, if anyone, do you receive direction from on how to support the DCD students?
- How do you feel best utilized in your role as a paraprofessional? Providing direct support, classwide support, or a combination?
- What strategies have you used to engage students with DCD in 7th-Period Ceramics and Sculpture?
- How would you describe the peer interaction between DCD students and general education peers in 7th-period Ceramics and Sculpture?
- Are peers a viable option to support the DCD students within the curriculum of your class? Why or why not?
- What impacts do you envision implementing peer-mediated support could have in your 7th-period Ceramics and Sculpture?

Paraprofessional Conference Prompts: *Post-Intervention*

- What were some benefits you noticed during the implementation of peer-mediated support in Ceramics and Sculpture?
- What were some drawbacks you noticed during the implementation of peer-mediated support in Ceramics and Sculpture?
- How would you describe the peer interaction between the Developmental Cognitive Disability (DCD) students and their general education peers now than before the intervention?
- What general observations do you have regarding the peer-mediated intervention?
- How did your role in the classroom change throughout the intervention, if at all?
- Is supporting a class utilizing a peer-mediated model something that you enjoyed? Why or why not?
- Was implementing a peer-mediated support model feasible for this elective art class? i.e. Did it create extra work for you? Were the results positive enough? Is direct paraprofessional support more appropriate?

Appendix C
Engagement Menu

Peer Engagement Tips

- Be Patient.
- Stay Positive.
- Work together! Everyone in your table group can help each other to be engaged academically and socially.
- Be willing to compromise - meet each other halfway.
- Ask Ms. Jolene or Ms. Cheline for support if you are unable to engage a peer.

Academic Engagement Tips

- Make sure everyone has all the materials for the daily activity - Ask others if they need help getting anything.
- Read any written directions out loud for the table.
- Ask everyone at your table if they know what steps to do for each activity - if not, try to simplify and support them.
- Support your table groups on activities - some students may need more individual help.
- Collaborate! - Share notes, help each other brainstorm ideas and provide feedback.
- Ask Ms. Cheline or Ms. Jolene if you have any questions about the activity for the day.

Non-Academic Discussion Prompts for In-Class Work Time

- What did you have for lunch today?
- What did you do last night after school?
- What did you do last weekend?
- What are you doing this weekend?
- Do you have any brothers or sisters? What are their names? How old are they?
- What activities do you like? Sports, art, music, video games, Youtube, etc.
- What is your favorite…? Food, animal, show, movie, color, songs, candy, etc.
    - If a student cannot identify a favorite or is having difficulty answering, try modifying the question to "Do you like _____?" and insert a movie, animal, food, or activity you think a student may like.
- Would you rather…?
    - Play Video Games or Go Outside?
    - Eat at home or a restaurant?
    - Go to the zoo or the aquarium?
    - Camp or stay in a hotel?
    - Skittles or a Snickers Bar?
    - Watch Youtube or Netflix?

Appendix D
Student Feedback (pre and post-intervention)

Who are you most likely to ask if you have a question or need help with an activity?

- Teacher
- Paraprofessional
- Peer or Table Partner
- Other

I prefer to work on my art projects and assignments…

- Alone
- With a random partner
- With a chosen partner
- With a random group (3 or 4)
- With a chosen group (3 or 4)
- No preference

I know all my classmate's names

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

I interact with peers in this class

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

I am comfortable asking the teacher for help

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

I am comfortable asking the paraprofessional for help

- Strongly Agree
- Agree

- Neutral
- Disagree
- Strongly Disagree

I am comfortable asking a peer for help

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

I would benefit from having peer-support

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

I am comfortable interacting with students with a disability

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

I am willing to help classmates on projects and activities

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Post-Intervention Added Questions

The engagement menu on my table was helpful when engaging my peers

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Did you support any individuals with disabilities during the clay faces, clay bowls, team basket making, or basket weaving projects?

- Yes
- No

If you answered the previous question yes, please share a SHORT description of how you felt it went?

Appendix E
Interaction Counter

Date:

Type of Interaction:

- Peer-Academic Support
- Social Interaction
- Paraprofessional Support
- Teacher Support

Note of Interaction:

DCD Student Codes:

- Student 1
- Student 2
- Student 3
- Student 4

General Education Student Codes:

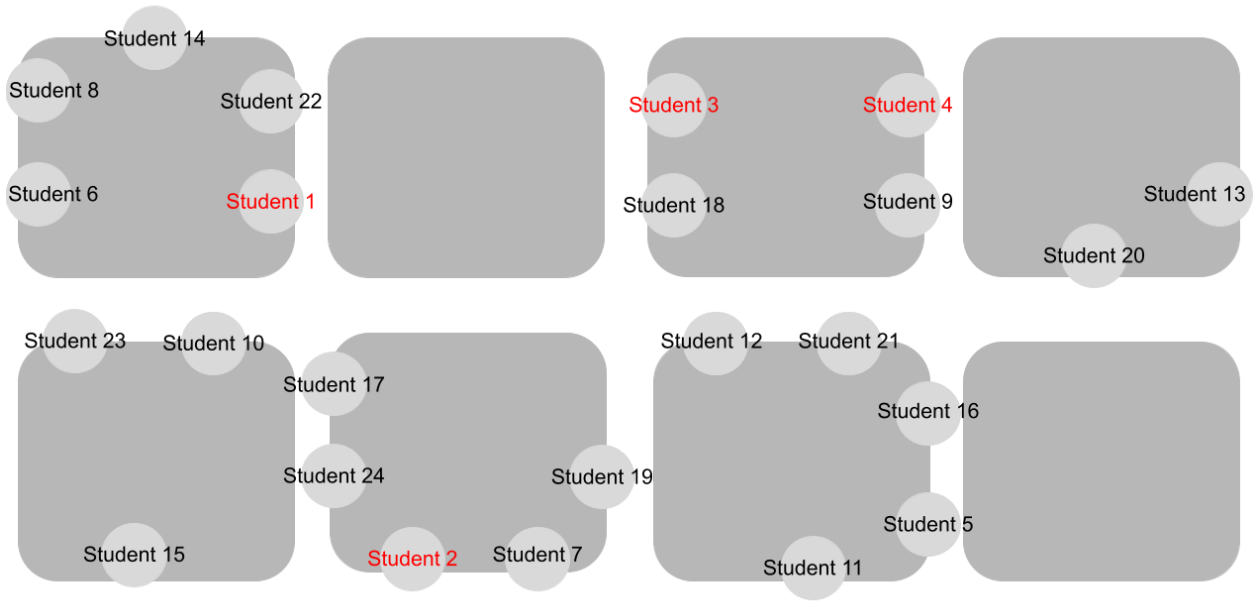
- Student 5
- Student 6
- Student 7
- Student 8
- Student 9
- Student 10
- Student 11
- Student 12
- Student 13
- Student 14
- Student 15
- Student 16
- Student 17
- Student 18
- Student 19
- Student 20
- Student 21
- Student 22
- Student 23
- Student 24

Appendix F

Seating Chart - Student Codes

Red: Developmental Cognitive Delay (DCD) Students

Black: General Education Students



Appendix G
Observational Journal

Date:

Student	Arrival	Departure
Student 1		
Student 2		
Student 3		
Student 4		

Daily Observational Journal
Lesson/Activity - Notes - Contextual Factors: Appointments, teacher absence, para absence, etc. -