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Supporting Children with Developmental Delays in the General Education Preschool Classroom

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Supporting Children with Developmental Delays in the General Education

Preschool Classroom

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Abstract

Increasing numbers of preschool-age students with developmental delays and other disabilities are educated in the general education classroom. Legislation, including the Individuals with Disabilities Education Act (IDEA), has supported the idea of classroom inclusion. In the inclusive classroom, preschoolers with developmental delays are educated in the least restrictive environment and attend class with typically developing peers. Because high-quality preschool programs already include play-based learning and an individualized curriculum, the preschool classroom naturally yields itself to inclusion practices. Although early childhood professionals may feel unprepared and apprehensive about teaching children with developmental delays, there are many methods available for supporting children with developmental delays that are practical to implement in the preschool classroom. Some ways children with developmental delays are supported in the classroom include specific strategies for inclusion, special education and family support, play-based learning and curriculum, individualized learning techniques, support across developmental domains, environmental strategies, and peer mediation strategies. This paper outlined some of these support methods in more detail by reviewing the literature and presenting specific strategies already practiced and implemented in many high-quality preschool programs.

Keywords: preschoolers with developmental delays, inclusion, individualized learning, teacher strategies

Supporting Preschoolers with Developmental Delays in the General Education Classroom

Chapter 1: Introduction

Early childhood, specifically the first eight years of life, is a period of distinct and important development for young children. Research has shown that children grow, change, and experience more brain development in those first eight years of early childhood than in any other time throughout life (Mattern, 2014). Changes in development occur throughout several learning areas including physical growth, cognitive growth, and social-emotional growth, and the early childhood timeframe is a critical period in the formation of skills in these developmental domains. One of the main goals of a preschool program is to foster the development of children throughout this period. A high-quality preschool program is important in supporting children of all learning levels (Griebeling, Elgas, & Konerman, 2015).

In children with typical development, developmental milestones generally happen along a predictable continuum. The timing of the milestones may vary but are generally achieved at some point within a predetermined timeframe (Mattern, 2014). Milestones not met within that timeframe may raise concerns about developmental delays (Johnson-Staub, 2014). When children are not developing as predicted, preschool teachers may be the first to identify atypical development in the preschool classroom setting (Mattern, 2014). Often, preschoolers with potential developmental delays have not yet received a formal evaluation, and the preschool teacher may be the first person to identify that need (Griebeling et al., 2015). Preschool teachers are important in influencing the way young children learn and are not only responsible for identifying learning differences but also in differentiating instruction to meet a variety of student needs.

Inclusivity and Legislation

Increasing numbers of children with developmental delays are participating in general education preschool classrooms (Guralnick, Neville, Hammond, & Connor, 2008). Legislation, through IDEA, advocates for inclusive practices for preschool-age children. Inclusion is a foundational concept of IDEA, and likewise inclusion is an important indicator of a high-quality program in early childhood education (Yang & Rusli, 2012). In the inclusive classroom, children with developmental delays and other disabilities are educated alongside typically developing peers. Inclusive teaching has numerous benefits for all preschool-age children in the classroom, and research has shown that inclusion can show developmental growth for both children with developmental disabilities and their typically developing peers (Yang & Rusli, 2012).

Inclusion in Preschool

For children with developmental delays, benefits of effective inclusion practices are widespread. Research has shown that children with disabilities who attended an inclusive preschool program have experienced increased developmental outcomes as opposed to children who attended a separate special education preschool setting and did not have experience working together with typically developing peers (Yang & Rusli, 2012). Such benefits included higher scores in language development, better developed social skills, improved academic skills, more positive behavior outcomes, development of meaningful friendships and social networks, and increased happiness (Yang & Rusli, 2012). Benefits for typically developing classmates included increased social-emotional skills such as acceptance, tolerance, sympathy, strong character development, and sometimes even specialized knowledge about specific disabilities and assistive devices and technology (Yang & Rusli, 2012).

Preschool teachers are essential in influencing the development of young learners and play a critical role in peer interactions in the classroom. Early childhood professionals are responsible for incorporating instructional strategies that accommodate for and encourage participation from children with differing abilities, including children with developmental delays (Mattern, 2014). However, despite strong advocacy for support for inclusion practices, there are still challenges in making inclusion strategies successful, especially among children with more severe developmental delays (Yang & Rusli, 2012). Incorporating inclusion strategies into practice is not as difficult as it may initially sound, and preschool teachers may not realize that many inclusion-friendly techniques are already in place throughout systems used in the typical preschool classroom. Individualized learning and teaching children with a large range of developmental abilities are already common practices in a high-quality preschool setting. Despite the natural tendencies towards inclusion that may be already present in the preschool setting, many teachers may still feel unprepared and improperly trained in meeting the needs of children with developmental delays in the classroom.

The Use of Inclusive Practices in the Classroom

Although inclusion practices and the benefits of inclusion are topics that have been well researched and are strongly supported, there continues to be a lack of knowledge about specific strategies for early childhood educators to use to effectively practice inclusive instruction in the general preschool classroom setting. Because the preschool years are a period of rapid development and because preschool is often a child's first exposure to formal schooling, careful observations in the preschool setting may uncover the need for further evaluation of children who present with suspected developmental delays. Preschool teachers often play a critical role not only in referral for evaluation, but also in communication with parents and coordination of

special education services. Furthermore, even when developmental delays have been diagnosed and special education services have been initiated prior to attendance in preschool programs, special education services are often limited to short periods of time each week or are serviced as part of the general education program. Therefore, general education preschool teachers are often balancing a mix of typically developing children with ranging developmental abilities, children with known developmental delays who are already receiving special education services, and children who have not yet been evaluated for suspected delays.

This paper attempted to fill that gap in the research by reviewing the literature already available about inclusion practices and then outlining specific strategies for inclusion in the general preschool classroom. Literature in the areas of identification and evaluation of preschool-age children with special needs, family communication, the history and importance of inclusion, curriculum and developmentally appropriate practice in relationship to children with developmental delays, and methods for accommodating children with special needs across learning domains and other classroom areas will be reviewed and synthesized to form meaningful strategies available for classroom use. Finally, barriers to inclusive practices were presented in order to address the need for further advocacy and future research in inclusion practices in general education preschool classrooms.

Summary

Early childhood, and specifically the preschool years, are a time of rapid development for young children. Although developmental timelines differ, development usually follows a predictable pattern within an expected timeframe (Mattern, 2014). When children are developing atypically, preschool teachers may be among the first to notice missed milestones and may suspect developmental delay (Griebeling et al., 2015). Early childhood educators play an

important role both in addressing the need for further evaluation and in supporting children with developmental delays in the classroom. Inclusion strategies are developmentally appropriate for preschool age children and are supported by IDEA, legislation that addresses how to best meet the needs of children with disabilities in educational settings. Inclusion practices, while well suited to high-quality practices already in place in early childhood classrooms, can be difficult to put into effective practice. Strategies to support inclusion in the preschool classroom are essential to promoting the research-proven benefits of inclusion practices for young students.

Chapter 2: Review of Literature

The support for children with disabilities through inclusive practices in the classroom are important to the future academic success of preschool age students. An ample amount of research exists to show the benefits of inclusion practices for children with developmental delays, but far less literature addresses strategies for using inclusion practices in the classroom. However, the research suggested that there are effective methods available to identify, evaluate, and refer students to special education services if required. Family communication and coordination of services are also important components of evaluation and referral for special education services. The importance of inclusion is well-supported alongside other important components of high-quality programs such as individualized learning and play-based curriculum. Literature was available to support the importance of those factors as well as providing inclusion implementation strategies across the learning domains. Finally, the transition from inclusion-friendly preschool programs into kindergarten was addressed in the literature.

Identification of Children with Developmental Delays

Often, preschool is the first formal education setting for young children. Therefore, even if developmental delays are present, the delays may have not yet been formally diagnosed. Preschool teachers play an important role in recognizing children who may have atypical development and may be responsible for observing and documenting developmental concerns. From there, the teacher may decide to refer the student for evaluation for special education services (Griebeling et al., 2015). This requires specialized knowledge of which children may require referral and where the child should be referred. The process also involves parent and family communication.

Evaluation and Referral

For children who are not developing typically, early identification and effective evaluation and intervention are important in providing the support needed for children to reach the best possible future academic potential. High-quality programs have successful processes in place to refer students for evaluation for outside services and to provide access to those special education programs (Mattern, 2014). Developmental screenings play an essential role in this process. Developmental screenings are generally accepted, formal, research-based tools that assess the developmental progress of young students (Johnson-Staub, 2014).

Commonly Used Assessment Tools to Identify Children with Developmental Delays

Various appropriate assessment tools have been developed to identify children with developmental delays (Guralnick & Bruder, 2016). However, identifying the correct screening tool to use and knowing how to administer the screening sometimes presents challenges. Some of the traditional tools used to identify eligibility for intervention include The Battelle Developmental Inventory; the Assessment, Evaluation, and Programming System (AEPS); the Bayley Scales of Development; The Kaufman Assessment Battery for Children; The Mullen Scales of Early Learning; The Wechsler Preschool and Primary Scale of Intelligence; The Stanford-Binet Intelligence Scale; and the Differential Abilities Scale (Macy, Bagnato, Macy, & Salaway, 2015). While the tools are available and have strengths for specific uses, there is no one best way to evaluate a child for developmental delays. Instead, using a combination of tools or combining assessment tools with interviews of parents and teachers may be more effective in gaining an overall best picture of the student's abilities.

Of the available tools, two of the most popular assessments used with preschool age children include Battelle Developmental Inventory (BDI) and the Assessment, Evaluation, and

Programming System (AEPS) (Hallam, Lyons, Pretti-Frontczak, & Grisham-Brown, 2014). A qualitative study performed in 2014 selected a sample size of 50 pre-Kindergarten students enrolled in Head Start programs and a university-based preschool program in a single local area. The study sought to investigate two of the most commonly used preschool assessment tools used for identifying developmental delays and other disabilities and compare the findings (Hallam et al., 2014). The study recorded data over a period of two school year terms. The children enrolled in the study were given both the AEPS and the BDI assessments to compare which children qualified for special education services.

The results showed that, while the two assessment tools agreed on identification of children with developmental delays approximately 78% of the time, the tools did not consistently identify the correct children the other 22% of the time (Hallam et al., 2014). In some cases, the BDI identified the child as qualifying for services while the AEPS showed the child's development to be in the expected range while in other cases, the AEPS identified atypical development that would qualify the child for outside services while the BDI produced results within the normal range. Limitations of the study included a small sample size and a need to reproduce the results in other geographic areas (Hallam et al., 2014). Although standardized assessment tools remain the best method to identify children with developmental delays, this study also highlighted some of the challenges standardized assessments present when working with young children. This study further emphasized the importance of teacher and parent interview in determining the big picture of which children may require special educational services.

Access to Special Education Services

In addition to using observation to identify children with potential developmental delays and evaluation by assessment to confirm those suspicions, preschools also play an important role in making sure students who require additional services have access to the specialized education required. It is an essential component of high-quality preschool programs to promote access to special education services (Mattern, 2014). In a mixed-methods study of preschool students in Pennsylvania, Mattern (2014) sought to determine whether preschool children, ages 3-5 years, with atypical development were receiving proper evidence-based referral to access to special education services and early intervention professionals. The study followed 226 participants in urban, suburban, and rural areas of Pennsylvania to assess proper implementation of services for children who qualified for early intervention. The researcher used online services and interviews to follow parents of students receiving services, early childhood education professionals in inclusive preschool environments, and special education professionals.

Survey results indicated that over 80% of educators (inclusive preschool teachers and special education specialists) and 40% of families identified preschool settings as the place where children were first discovered as qualifying for early intervention services (Mattern, 2014). This highlighted the importance of the role of the preschool teacher and the need for extensive knowledge of identification of atypical development. The study also found that parents and educators both rated the implementation of early intervention services as highly effective when there was a high level of collaboration between families, teachers, and early intervention providers, which again stresses the important role that preschool teachers play in promoting relationships and using effective strategies to communicate with families (Mattern, 2014).

Parent Communication

Parents also play a critical role in the process of identifying a child with developmental delays and in helping the child receive special education services. Preschool teachers may be responsible for having conversations with parents regarding children with newly identified developmental delays. It is the responsibility of preschool teachers to provide families with information needed to best support their child's development (Johnson-Staub, 2014). The support of parents within the home and school relationship is essential to helping young students with developmental delays to reach full academic potential. If concerns for developmental delays exist and if observation and assessment have indicated a need for outside special education services, it is important to involve family members in discussion as soon as possible.

Lendrum, Barlow, and Humphrey (2013) developed a mixed methods study to look at the effects of parental involvement on engagement and confidence in young children with developmental disabilities. The study showed the effects of implementing a plan aimed at increasing the quality of parent-school relationships at 334 schools in England. The program, which was named "Achievement for All," was developed to increase parental engagement for families of children with special educational needs. The study used school demographic data, results from surveys for parents and school administration, data outlining student progress in academics, and interviews to examine the efficacy of the communication program. Results of the two-year study showed that parental involvement increased throughout the course of the study. Schools used a variety of strategies to engage parents and created opportunities for at least three designated structured conversations about their child's accomplishments and goals, special educational needs, and how well the services provided have met the student's needs. At the end

of the study, parental engagement and student success were both higher than before initiation of the program (Ledrum et al., 2013).

Parents and teachers identified several benefits of the program. On the parent surveys, parents stated having an increased understanding of school procedures and policies, feeling more confident that their children were benefitting from special education services, and feeling more connected to their child's teachers and specialist instructors. Teachers reported having more communication with parents to talk about what was going well and what the children were accomplishing instead of only reporting problems that required solutions (Ledrum et al., 2013). While the study did have some limitations including the need to account for many variables in student services and developmental needs and the need to replicate the study in other countries, it also laid the foundation for the importance of home and school connections for young children. Implications of the study could serve as an important reminder of the importance in involving parents in communication and involvement for students with special educational needs.

The Importance of Inclusion

In the United States, the first legislation to support inclusion in early childhood education was the Handicapped Children's Early Education Act of 1968 (Guralnick & Bruder, 2016). From approximately 1968-1998, approximately 700 studies were funded to determine best practices for inclusion in preschool and elementary school settings. After undergoing changes throughout the years, the Handicapped Children's Early Education Act became the Individuals with Disabilities Education Act in 1991. IDEA was most recently revised in both 2004 and 2007, and it continues to evolve to keep current with best practices in education for students with disabilities. Continued state and federal legislation has also evolved to further support inclusion practices of educating children with developmental delays alongside typically developing peers (Guralnick &

Bruder, 2016). The importance of inclusion practices has taken on global significance as well. In 2016, over 160 countries signed the United Nations Educational, Scientific, and Cultural Organization's commitment to meeting the needs of students with disabilities in inclusive environments (Noggle & Stites, 2017).

For preschool students, the inclusion of children with special needs in classrooms with typically developing students has become a primary goal of early childhood education programs (Yu, Ostrosky, & Fowler, 2015). IDEA consists of age-appropriate goals for preschool-age children that include universal access to intervention services, quality inclusion with typically developing peers, and the developmental benefits that result from high-quality inclusion programs (Guralnick & Bruder, 2016). The idea of the least restrictive environment (LRE) is also an important component of IDEA and states that preschoolers with special needs should be educated in inclusive classrooms as part of the required free and appropriate education of young children (Guralnick & Bruder, 2016).

The Chinese Preschool Inclusion Survey study surveyed 541 Chinese preschool teachers and early education pre-service teachers in a large Chinese province to examine how teachers view the importance of inclusion (Hu, Wu, Su, & Roberts, 2016). The Chinese Preschool Inclusion Survey tool was administered to a total of 671 teachers, 541 of which met the qualifications for the study. The survey, based on a similar survey from the United States, was part of a comprehensive longitudinal study to quantitatively track inclusion practices in preschool settings. The data was scored on 60 criteria in the areas of access, participation, and support. Teachers rated general inclusion beliefs, curricula beliefs, support for parents and teachers, and classroom practices as most important criteria of inclusion practices. However,

when asked about feasibility of implementing inclusion practices in the classroom, both current and pre-service teachers felt less comfortable (Hu et al., 2016).

The researchers suspected that preschool educators may find implementation of inclusive practices to be more intimidating due to lack of experience and professional development regarding children with developmental delays (Hu et al., 2016). However, the empirical support for inclusion in the classroom was encouraging and may suggest that, with more professional development, teachers would be more comfortable implementing the inclusion practices that are viewed as important in the classroom. Limitations of the study included the fact that the data may be skewed due to the perception that inclusion is important in the demographic areas surveyed and that there may be a large gap between the knowledge of pre-service and established preschool educators (Hu et al., 2016). The data collected in the study suggested that the majority of the early education professionals viewed inclusion practices as important and desired to implement inclusive strategies in the classroom (Hu et al., 2016).

High-Quality Care, Curriculum, and Play-Based Learning

For inclusion strategies to be effectively implemented in the preschool setting, it is important that the preschool environment is committed to high-quality care and follows developmentally appropriate practices in the classroom. High-quality preschool settings are generally inclusive by nature and are used to simultaneously serving children at varying developmental levels (Griebeling et al., 2015). Through participation in high-quality programs, access to special education services, incorporation of effective instructional practices that support development, and enhancement of future academic success are promoted (Mattern, 2014). In preschool, quality is measured by commitment to practice, the use of ongoing observation and assessment practices, and a commitment to appropriate curricula. Appropriate tools are available

to measure the quality of inclusive practices, teaching methods for inclusion in early childhood settings, and to provide data on instructional practices (Guralnick & Bruder, 2016).

High-Quality Care

Participation in a high-quality early childhood education program is essential for children who experience atypical development (Mattern, 2014). Participation in high-quality programming can promote learning and contribute to future academic success (Mattern, 2014). A quality program may be defined as a developmentally appropriate, structured environment with identified goals and planned curriculum that promotes school readiness (Warren, Martinez, & Sortino, 2016). A quality environment may also include well-trained educators and a commitment to the social and cognitive development of young children (Warren et al., 2016). The National Association for the Education of Young Children (NAEYC), in a joint position statement with the Division for Early Childhood and the Council of Exceptional Children, emphasized that high-quality inclusion programs encourage participation, social relationships, and positive learning outcomes for all children (Warren et al., 2016).

In a mixed methods study that combined quantitative measurements of student growth with a qualitative analysis of the perception of developmental gains and participation in an inclusive setting, the researchers attempted to measure the impact of a high-quality inclusive setting on children enrolled in the program (Warren et al., 2016). Participants in the study included 46 out of 60 preschool age students enrolled in an inclusive program in Southern California. The study took place over the course of one school year with analysis in the fall and in the spring. The Preschool Desired Results Developmental Profile-Access, already administered to all preschool students in California, and the Brigance Diagnostic Inventory of Early Development, an assessment tool used to measure developmental performance levels of

young children, were used to quantitatively measure the outcomes of the program. In addition, parents of 30 of the 46 children enrolled in the quantitative study as well as the children's early childhood educators and specialists participated in the qualitative component of the study. This portion of the study used surveys and interviews to gain knowledge about the perspective development of inclusion in the program (Warren et al., 2016).

Results, when accounting for indicators of a high-quality inclusive environment, found that students, families, and the school community all benefitted from the program (Warren et al., 2016). Parents and staff observed significant academic growth in students, which were attributed to the quality indicators of the program. Most notably, parents emphasized the engaging curriculum and the focus on school readiness in the program. Parents and staff also noted the social emotional growth of students, especially in the areas of building confidence and socializing with others. The inclusive environment also played an important role in the sense of the community of the students and families enrolled. Although the study was limited due to the small number of participants, the results indicated that program quality indicators had a marked effect on contributing to the success of the program in one inclusive setting (Warren et al., 2016).

Curriculum

Curriculum options in high-quality preschool programs are well defined in the literature. Preschool curricula should be interesting to children, developmentally appropriate, and promote development. Individualized instruction is also a component of a well-developed preschool curriculum. Individualized learning is essential to inclusive practices in the classroom because, by intentional design, individual learning practices are appropriate for children at varying developmental levels (Guralnick & Bruder, 2016). In addition, most preschool curricula already include adaptations for children with special needs (Guralnick & Bruder, 2016). Therefore,

many evidence-based curricula are already well-designed for children with developmental delays and can help to promote joint participation between children with disabilities and typically developing children (Guralnick & Bruder, 2016).

Play-Based Learning

Best practice dictates that preschool curriculum should be play based. Evidence-based research supports that play is the way children learn new skills. Through play, children develop socially, cognitively, emotionally, and physically (Rowe, 2010). Additionally, play allows for children to learn the self-regulation skills required for executive functioning and allows children to explore new ways to interact with the environment and begin to understand the world (Rowe, 2010). Regardless of ability, all children are capable of playing, and if play is developmentally appropriate, all children should be able to engage in meaningful play (Rowe, 2010).

Additionally, play skills are important in social interaction and formation of friendship.

One qualitative study followed four typically developing children and four children with developmental delays who attended two private preschool programs in a large metropolitan city (Rowe, 2010). The researcher in this qualitative study observed the children during free play for three weeks and used the AEPS to evaluate skills in the areas of fine motor, gross motor, adaptive, social-communication, social, and cognitive development. Interactions between peers and types of play were recorded throughout the sessions. Findings reported that all of the children enrolled in the study actively engaged in a variety of peer interactions and play experiences. Children with developmental delays were less likely to participate in sophisticated pretend play, which was probably related to lower levels of language ability, but all of the children participated to some extent in all types of available play (Rowe, 2010).

The findings of this study were significant for inclusive preschool settings because play is essential to overall development of preschool students. While a limitation to this study was the small sample size, the research indicated that as long as play is developmentally appropriate, all children were able to participate in play at similar levels. This was true even if the developmental abilities of the children differed (Rowe, 2010). This could be significant to inclusive preschool settings in choosing a play-based curriculum that is suitable to the varying abilities of the enrolled students.

Supporting Children in the Classroom Through Learning Domains

Language and Literacy

Throughout the preschool years, young children develop the fundamental foundation, known as emergent literacy skills, necessary for future learning in this area (Botts, Losardo, Tillery, & Werts, 2014). Emergent literacy skills include recognition of environmental print, understanding of letters and letter formation, knowledge of the relationship between speech and print, phonological awareness, and development of understanding of oral speech (Botts et al., 2014). Despite indication that these skills are generally taught in a traditional preschool curriculum, children with developmental delays may have trouble understanding basic literacy skills.

One quantitative study sought to focus on the effectiveness of two language and literacy intervention approaches targeted toward preschool-age children with developmental delays (Botts et al., 2014). The participants included five male children ages four and five years old with mild to moderate language delays based out of a university-based classroom. The classroom was an inclusive classroom and was comprised of children with and without developmental delays, including language delays and other types of delays. The study measured two different

intervention approaches that included an activity-based intervention protocol and an embedded direct instruction intervention. The study recorded the effect of the intervention methods on acquisition and maintenance of phonological awareness (Botts et al., 2014).

The performance of the children was measured by formal assessment of the treatment objective criteria. Results indicated that the highly structured embedded program resulted in more effective acquisition of phonological awareness skills. The activity-based intervention did show increased phonological awareness skills throughout the testing period, however the direct embedded instruction resulted in more children reaching more targeted objectives at a faster rate (Botts et al., 2014). While the findings were somewhat surprising based on what is known about the importance of play-based learning in the preschool classroom, the results supported prior research that found that children with language delays may benefit from the use of direct instruction methods to meet targeted learning objectives. The researchers also found that direct and individualized instruction strategies in a stable learning environment may result in more rapid learning (Botts et al., 2014). The largest limitation to this study was the small sample size.

This study may indicate that children with language delays benefit most from specific and targeted attempts to teach phonological awareness and other emergent literacy skills (Botts et al., 2014). This information could provide specific teaching strategies for early childhood educators working with children with delays in language development. Specifically, these results could indicate that individualized teaching plans for children with language delays may need to include direct instruction on phonological awareness. This strategy, while potentially easily implemented and effective, may differ from the play or activity-based learning activities that teachers may typically focus on for this age group. While this study was classified as a

replication study, further research may be necessary to support this strategy for effectiveness in the preschool classroom (Botts et al., 2014).

Cognitive

In the preschool classroom, cognitive development often happens through play-based learning. Some of the most important cognitive skills a child can learn relate to executive functioning skills, which refer to a broad set of cognitive abilities that prepare a child to solve problems and exhibit self-control (Willoughby, Magnus, Vernon-Feagans, & Blair, 2017). Research has shown that a strong foundation in executive functioning skills can lead to future academic success (Willoughby et al., 2017). Because executive functioning skills require a high level of advanced cognitive skill, previous research has shown that children with developmental delays are more likely to have lower levels of these important skills, which can have a profound impact on school readiness and future academic success. One study suggested that, if there was a way to measure executive functioning skills of preschoolers, that may serve as a helpful indicator to identify students at risk for potential cognitive delays (Willoughby et al., 2017).

The study took place in two large geographical areas of the United States with high numbers of families living in poverty. The area included three counties in eastern North Carolina and three counties in central Pennsylvania. This quantitative study included 1292 participants. The participants were followed from two months of age until they reached ages three through five, for a total of three to five years (Willoughby et al., 2017). Family assessments and home visits were completed on all willing children in the six counties when the children were two months of age to gather demographic and family information. When tracked three years later, 1292 of the children agreed to continue participation in the study. The continued participants were measured regularly between three and five years of age by use of assessment tools and

family and teacher interviews in order to quantitatively measure progress in advancing executive functioning skills (Willoughby et al., 2017)

Results indicated that most children developed large improvements in executive function between the ages of three and five years. Among the children who developed less progress or had less of a growth curve in advancing executive function skills, there was a large degree of overlap of children who eventually required special education services in preschool or in kindergarten (Willoughby et al., 2017). Limitations of this study included the fact that there were several variables that could have skewed results and that assessment periods may have been spaced too far apart. However, the results indicated that ongoing assessment of executive functioning skills may help to identify children at risk for developmental delays. Furthermore, targeted teaching strategies aimed at increasing mastering executive function skills may have profound effects in future academic learning for children with developmental delays (Willoughby et al., 2017).

Social-Emotional

Executive functioning skills play an important role in both cognitive and social emotional development of preschool-age children. Forming friendships, learning to get along with peers, and learning self-control are all important to forming relationships in the classroom. The development of friendships is important to the long-term success of young children (Noggle & Stites, 2017). Starting at around age three, young children start to use their social skills to interact with other students as they start to play together (Stanton-Chapman & Brown, 2015). However, before children can learn to play together, important skills including having a basic understanding of receptive and expressive language, knowing how to make a simple and appropriate request, and understanding pragmatics of social interactions must be mastered

(Stanton-Chapman & Brown, 2015). Children with developmental delays may have not yet mastered those advanced skills, and as a result, the lack of proper interactive play skills may have long term effects on social interactions of children with developmental disabilities. As a result, children with developmental delays may have difficulty maintaining friendships or may not be socially aware or accepted by peers (Stanton-Chapman & Brown, 2015).

Social-Emotional Communication for Children with Developmental Delays

One study sought to evaluate play behaviors of children with developmental disabilities who participated in a social-emotional communication intervention (Stanton-Chapman & Brown, 2015). The intervention specifically targeted peer interactions by tracking initiations with peers, proper social interactions, the use of peers' names in the initiation, and taking turns. This quantitative study followed 12 preschool students enrolled in an inclusive preschool classroom in one rural elementary school-based preschool program. All participants were three years old when the study began, and all of the participating children were receiving some type of special educational services. Each participant was paired with a different peer for each of several observation sessions. The researchers hypothesized that an increase in observable peer interactions would occur after an intentional intervention was administered (Stanton-Chapman & Brown, 2015).

The researchers observed the peer groups two to three times per week for 20-25 minutes over a span of 10 weeks. During the study, various dramatic play items were introduced, the children were shown how to use the items, and stories and pictures illustrated how the items were used. Following the instructional period, the partner groups were then asked to play with the items, and the peer interactions were quantitatively scored and tracked according to type of interaction. The results showed that all of the children enrolled in the study engaged in a higher

frequency of parallel play interactions by the end of the study period. The study indicated that social communication intervention was highly effective in helping children with developmental delays form friendships and engage in social interactions with peers (Stanton-Chapman & Brown, 2015). Limitations of this study included the small sample size and the fact that duplicate props were offered to the children, which may have limited peer interactions more than if the children had to share materials (Stanton-Chapman & Brown, 2015).

Social-Emotional Development by Emotion Recognition

In addition to peer interactions, there are other effective ways to measure social-emotional skills in an inclusive classroom. Another quantitative study wanted to explore how instructional practices could increase emotion recognition in children with developmental delays. Emotion recognition is a basic skill that is thought to facilitate social-emotional development and social competence in young children because in order for children to respond appropriately to social cues in the classroom, the children must be able to identify basic emotions (Downs & Strand, 2008). This quantitative study divided 16 preschoolers enrolled in a publicly funded preschool program in Washington state into two groups. One group received intervention in emotion recognition throughout the test period while the other group served as a control group. All children enrolled in the study were previously diagnosed with developmental delays, and the study took place over the course of one academic year (Downs & Strand, 2008).

The intervention group received targeted instruction on emotion recognition for a total of 30-42 hours throughout the test period. At the end of the study, this group showed significant growth in emotion recognition over the control group when assessed with a standard evaluation tool (Downs & Strand, 2008). Because there is a link between the understanding of emotion and social-emotional competence of young children when forming peer friendships, the researchers

were encouraged to see that direct and specific instructional strategies were effective in increasing competency in this area for children with developmental delays. Limitations of the study included the small sample size, the lack of diversity of the participants, and the need for replication of the results. However, the study provided a more in depth understanding of the link between emotion recognition and social competence in preschool age children with developmental delays (Downs & Strand, 2008).

Physical

The first five years of life are a critical time of physical growth and development for young children (Yang, Ostrosky, Favazza, Stalega, & Block, 2019). Through active play and physical activities, children need many opportunities to develop gross motor skills (Yang et al., 2019). The development of motor skills can impact development across other learning domains and can be especially important for children with developmental delays in order to promote physical learning as well as learning in other domain areas (Yang et al., 2019). Physical activities can be planned or modified to ensure that all children, including with developmental delays, can participate in gross motor activities (Yang et al., 2019). Inclusive physical activities can be designed to support learning goals for children with physical disabilities or delays (Bittner, Silliman-French, Lieberman & Lytle, 2020).

In a mixed methods study, 44 children both typically developing and with motor delays were followed to measure the effect of motor ability and executive function on participation in daily activities in the inclusive classroom (Rosenberg, Jacobi, & Bart, 2017). The study included a mixture of surveys, assessments, and parent and teacher interviews to measure how motor ability affects independence in the classroom and participation in classroom activities. Results indicated that children with decreased motor abilities participated less often in classroom

activities than typically developing peers. However, the study also concluded that supporting inhibitory control ability, through executive function skills, could be helpful in predicting the independence level of children in classroom participation (Rosenberg et al., 2017). Limitations of the study included having multiple variables and not enough information about the overall development of participants outside of motor ability and executive function level. Implications of this study suggest that by supporting inhibitory control, children with physical developmental disabilities can achieve increased participation in the classroom.

Other Inclusion Support Strategies

Outside of the typical preschool curriculum and developmental learning domains, other strategies exist in the preschool classroom to support children with developmental delays. In addition to supporting developmental criteria, other teaching strategies could be helpful in engaging students with differing learning abilities in an inclusive preschool classroom environment. Among these strategies, project-based learning and partnerships between typically developing students and peers with developmental delays may be essential components to promoting inclusivity and learning in the classroom. Additionally, more recent research has suggested that there are positive benefits for typical developing students who attend inclusive preschool programs in addition to benefits experienced by children with developmental delays (Noggle & Stites, 2017).

Project-Based Learning

Differentiated and individualized learning are common ideas in high-quality preschool programs and are critical in supporting children at varying developmental levels. These ideas fit nicely into both developmentally appropriate best practice and the notion of the importance of inclusivity for students with developmental delays. Support for individualized learning is

especially evident in the context of emergent curriculum, and specifically, with project-based learning (Griebing, Elgas, & Konerman, 2015). Because the learning style is flexible and designed by students, project-based learning can easily accommodate children at different levels of development and offer equal opportunities to students, which makes it an ideal approach in an inclusive preschool setting (Griebing et al., 2015).

In a qualitative study that followed 16 preschool age children enrolled in a Reggio-inspired preschool program in an urban area of the Midwest United States, the researchers followed a group of preschoolers with developmental delays as they engaged in a project-based learning unit about trees. The study followed the work of the students in a variety of ways through interview, work samples, and observation as they engaged in the self-directed unit (Griebing et al., 2015). The study found that the children with developmental delays demonstrated positive social and cognitive changes throughout the study period. Among the observations noted, the researchers concluded that the students had increased participation in activities in the classroom, initiated learning experiences by serving as leaders and contributing to group knowledge, and showed increased peer interactions with typically developing students (Griebing et al., 2015).

Results indicated that project work is rich with opportunities and experiences that facilitate classroom success and promote inclusive practices. Limitations of the study included the small sample size and the fact that the Reggio program already used project-based learning practices that may have contributed to the results during the study (Griebing et al., 2015). However, the study also indicated that project-based learning could be an effective strategy in increasing knowledge, confidence, and participation in students with developmental delays in the

inclusive preschool environment. This could also be a useful method of encouraging individualized learning and focusing on the strengths of children with learning delays.

Peer Mediation

Peer mediation, or the partnership between typically developing children and students with developmental delays, is another strategy that could be effective in the inclusive preschool classroom. Peers provide an important source of support for classmates with developmental delays. While teacher involvement in play may disrupt the play sequence and the social interactions that are happening in the classroom, peers can often help develop play further while continuing social interactions (Yang & Rusli, 2012). Peer mediation skills can be naturally incorporated in everyday play and play-based learning experiences in the preschool classroom and can serve to keep both typically developing children and children with developmental delays better engaged in play and socialization (Yang & Rusli, 2012).

Yang and Rusli (2012) sought to explore the benefits of peer mediation in the preschool classroom. The qualitative study used survey-based methods to inquire about how early childhood professionals felt about using peer mediation in the classroom. The study took place out of the University of Kansas and enrolled 50 participants from the Midwestern United States in the study. Enrolled professionals included general education preschool teachers, special education teachers, special education services providers, and preservice teachers enrolled in graduate programs at the university. Thirteen peer mediated strategies were examined for practical use in the classroom. Strategies incorporated items that varied from environmental arrangement to teacher-student interactions. Teachers indicated that strategies such as prompting students for direct communication with peers and helping students to make interpretations about how peers were feeling to be most useful in the classroom.

Results indicated that, while twelve out of thirteen of the strategies were viewed as useful, only five of the strategies were used frequently in the classroom. Some of the barriers identified by the teachers included inadequate teacher training, time constraints, and lack of interest of peers when children with developmental delays do not reciprocate interactions (Yang & Rusli, 2012). Limitations of the study include the small sample size, the lack of demographic diversity, and the need for replication. While the results of the study indicated that specific teaching strategies involving peer mediation were not always used in the classroom in practice, in theory, teachers viewed peer mediation practices as valuable learning opportunities for children with developmental delays.

Benefits of Inclusion for Typically Developing Peers

Although the study by Yang and Rusli (2012) indicated that peer mediation practices were not always implemented in the preschool classroom, research has identified contrary evidence that there are several benefits to typically developing peers enrolled in inclusive preschool programs. Children, in general, tend to be naturally accepting of classmates (Yu et al., 2015). In an inclusive environment, typically developing children may develop leadership skills and learn to promote social interactions. Intentionally designed peer groups can increase learning and acceptance in typically developing children in addition to providing children with developmental delays with positive social relationships. Typical students enrolled in inclusive programs may also be more likely to increase factual knowledge about disabilities in addition to demonstrating compassion in properly assisting others (Noggle & Stites, 2017). Both groups of children can show increased developmental gains in a variety of learning areas that positively impact future academic success (Yu et al., 2015).

The Lived Experience in an Inclusive Classroom

A qualitative study explored the experience of three typically developing children enrolled in an inclusive classroom. The study used documentation, archival records, direct observation, work samples, teacher portfolios, and interviews with the participants to document how the students viewed children with developmental delays (Noggle & Stites, 2017).

Information was gathered throughout one academic year, and the researchers recorded how the experiences of the children changed over time. The results showed that the typically developing children enrolled in the study made substantial gains in cooperation, willingness to include others, and increased patience. Additionally, the students showed gains in learning new methods for adapting to the strengths and needs of other children. The students showed increased language skills, increased confidence, and increased acceptance for children with disabilities. All three children demonstrated remarkable increases in social-emotional and self-regulation skills (Noggle & Stites, 2017).

Limitations of the study were that the study did not consider the peer training component to learn how the children with developmental disabilities gained skills during the test period and that the sample did not include students with diverse socio-economic statuses. Additionally, the students enrolled in the study attended a very high-quality preschool program and were pre-screened before being selected for the study, so the peer may have been already pre-disposed to learning these skills (Noggle & Stites, 2017). This study provided qualitative evidence of developmental gains, especially in the social-emotional domain, for typically developing students enrolled in inclusive programs.

Knowledge of Students with Disabilities

Another study sought to determine the extent to which typically developing preschool students were able to identify disabilities in classmates in an inclusive setting. The researchers examined the relationship between identification of a disability in a classmate and how it affected the relationship and play interactions with the classmate (Yu, Ostrosky, & Fowler, 2015). The study was conducted in three inclusive classrooms in two public school preschool programs in a small urban Midwestern community in the United States. Of the 45 preschool students enrolled in the study, three children with more significant disabilities were chosen as target children for observation throughout the study. The researchers used standardized tools to investigate the preferences of the children when choosing playmates in the classroom and to measure the social acceptance of child interactions. Surveys using hypothetical situations were used to measure the perception of the children, and data was collected to identify play preferences between typically developing children and children with developmental delays enrolled in the program (Yu et al., 2015).

The researchers found that the majority of the typically developing children enrolled in the study could identify at least one classmate with a disability but could rarely identify all classmates with disabilities. The children were more likely to choose play partners based on if the child “liked to play with the child” than if “the child had a disability” (Yu et al., 2015). The results showed that children were not less likely to play with another classmate just because the other child had a disability. Results also indicated that typically developing children enrolled in inclusive programs had some knowledge of disabilities but that having a disability did not exclude a child from being a potential playmate (Yu et al., 2015). This information could be used to promote positive attitudes and acceptance of young children with developmental delays.

Limitations of the study included the small sample size and the similar demographics between children in the participating classrooms (Yu et al., 2015).

School Readiness and Transition to Kindergarten

Inclusive preschool programs offer many benefits to both typically developing students and students with developmental delays. While many strategies exist to make inclusive programs beneficial to enrolled students, sometimes challenges begin when students with developmental delays transition to kindergarten (Guralnick et al., 2008). While some students do stay in inclusive programs in kindergarten, participation in inclusive programs sometimes declines in first and second grade as academic expectations increase (Guralnick et al., 2008). In one study that examined this trend, the researchers followed inclusive classroom placements from kindergarten through elementary school (Guralnick et al., 2008). The participants included 90 children with developmental delays from 11 school districts in a large metropolitan area, and the children were followed for a three-year period.

Data collected in this mixed method study included school placement data, parent survey and interview results, and teacher responses to standardized tools that measured academic and social competence (Guralnick et al., 2008). Results indicated that by the beginning of the second year, 88% of students who attended inclusive preschool programs were still enrolled in fully inclusive classrooms. However, by the beginning of the third year, only 47% of students who had attended inclusive preschool programs were still enrolled in fully inclusive elementary school programs. This study illustrated some of the potential challenges present during the transition from inclusive preschool programs to inclusive elementary programs and may suggest that academic demands may play an important role in continued inclusive placements (Guralnick et al., 2008).

Summary

Legislation under IDEA specifies that inclusive practices are developmentally appropriate in high-quality preschool programs. Because preschool is often the first formal education setting for young children, preschool teachers may first identify children with developmental delays and may play an important role in referral, evaluation, and family communication for children first entering special education settings. High-quality programming, including effective curriculum and play-based learning, can be naturally conducive to inclusive learning for students with varying abilities. Research supports the importance of inclusive practices, and a review of the literature illustrates that effective strategies exist to support teachers and students with developmental delays in learning alongside typically developing classmates.

Preschool teachers can use effective practices found in the literature to support young children throughout the language and literacy, cognitive, social-emotional, and physical developmental domains. Other strategies, such as project-based learning and peer mediation may be effective in supporting children with developmental domains as well. The literature supports the idea that inclusive preschool programs offer benefits to typically developing students as well as students with developmental delays. The transition to elementary school may present additional challenges for students with developmental delays, and many students enrolled in inclusive preschool programs may face challenges as academic expectations increase. However, participation in inclusive preschool programs may have lifelong effects on helping children with developmental delays to achieve full academic potential (Yu et al., 2015).

Chapter 3: Research Summary and Conclusions

Teaching methods used in high-quality preschool programs often support inclusion of children with developmental delays in the general education classroom. However, preschool teachers may still feel unprepared to support young children with special needs in the preschool environment. Research, as suggested in the literature review, illustrated that although many teachers viewed inclusion as important, inclusion techniques may feel intimidating to implement in the classroom (Yang & Rusli, 2012). Review of past studies suggested several effective strategies to support children with developmental delays in the inclusive classroom. Strategies explored in the research included specific methods for supporting young children with developmental delays from referral for evaluation through transition to kindergarten.

Identification of Children with Developmental Delays

One of the main goals for preschool is to foster the overall development of young children. Marked changes in physical, cognitive, and social-emotional growth happen throughout the early educational years, and preschool is a period of large changes in development (Mattern, 2014). While the development of children varies and not all children reach milestones at the same time, children not reaching milestones appropriately may indicate developmental delays (Mattern, 2014). Preschool teachers often play an important role in recognizing potential developmental delays, referring children for evaluation for special education services, communicating information to families, and ensuring services are accessed.

Whenever possible, the literature illustrated that parents and caregivers played an important role in the evaluation process. Parent screening tools, such as the Ages and Stages Questionnaire (ASQ) could give valuable input into the evaluation process by including parent observation and gaining information that cannot be obtained through traditional classroom

assessment (Johnson-Staub, 2014). Preschool teachers may also play an important role in informing parents about IDEA and that early childhood special education programs are provided free of charge for children needing services (Johnson-Staub, 2014).

The Importance of Inclusion

Inclusion for children with special needs is a legal requirement through IDEA, and there are many ways to support inclusion in the preschool environment. IDEA states that every child with a qualifying developmental delay is required to have an Individualized Education Plan (IEP) which outlines specific goals and objectives for the student to achieve. Teachers support those goals by providing opportunities for individualized learning within the classroom (Bittner et al., 2020). Under IDEA, legislation also requires that students with special needs be educated in the least restrictive environment. The high-quality preschool classroom, by design, can naturally become a least restrictive environment because many high-quality preschool programs already offer individualized learning opportunities to children at varying developmental levels (Griebeling et al., 2015). Commitment to inclusion could potentially have positive, life-altering effects on the development of children with disabilities in the classroom (Noggle & Stites, 2017). Preschool teachers also play an important role in ensuring that school environments promote social acceptance and meaningful peer interactions with students of varying abilities (Yu et al., 2015).

High-Quality Care, Curriculum, and Play-Based Learning

Through play, children develop the skills necessary for development across learning domains. Play also enables children to develop a strong foundation of executive functioning skills which play an important role in higher order thinking and self-regulation. Play-based curriculum is developmentally appropriate for preschoolers and should be utilized in high-quality

preschool environments (Rowe, 2010). Play, however, is a very basic and natural childhood activity, and it should be easily observed in a typical preschool classroom (Staton-Chapman & Brown, 2015). Play skills serve as a good marker for typical development, and if play skills are lacking, teachers may suspect developmental delays (Staton-Chapman & Brown, 2015). While socio-dramatic play may be especially important in development and may be less advanced in children with developmental delays, it is important for children to have access to different types of play. Children with developmental delays may have opportunities to work on IEP skills through play during both free play and guided play experiences (Rowe, 2010).

Strategies for Supporting Children Through Learning Domains

Preschool teachers can help children with developmental delays by targeting specific learning goals through regular daily activities. These activities should take place throughout the classroom in a variety of areas and should include activities from the learning domains used for typically developing preschool students. Teaching strategies can be used to effectively address targeted learning objectives outlined in the IEP through regular play-based activities. The literature supported student learning throughout the language/literacy, cognitive, social-emotional, and physical domains.

Language and Literacy

Language, communication, and pre-literacy skills are essential learning in the preschool environment. Young children with developmental delays may lack some of the skills needed to effectively communicate with peers which can have a lasting impact on future academic learning and in forming friendships with peers (Botts et al., 2014). The research study performed by Botts et al. (2014) suggested that children with language delays may benefit more from targeted direct learning programs focusing on phonological awareness than through activity-based programs

that were rich in language opportunities. While the results were surprising based on what research states about play-based learning and the benefits play-based learning offers to preschool students, information from the study could be beneficial in recognizing that children with developmental delays do require special education services to directly work on skills in addition to opportunities to practice those skills in the classroom. Play-based skills that focus on language learning, particularly in the areas of vocabulary and phonological awareness, could still benefit children with language delays. Furthermore, having opportunities to practice conversational speech through play-based learning activities could be beneficial to forming peer relationships.

Cognitive

Many of the cognitive skills learned in preschool focus on executive function and higher order thinking skills. Children with developmental delays may be at a disadvantage for learning these skills, and specific intervention may be required for young children with special needs to make progress in these areas. Effective strategies for teaching these skills may help students with developmental delays improve academic readiness (Willoughby et al., 2017). Targeted play intervention strategies may be effective in teaching students some of these higher order thinking tasks such as divergent thinking, creativity, and problem-solving (Stanton-Chapman & Brown, 2015). Teachers can use targeted approaches to help children with developmental delays succeed in learning cognitive skills. Benefits of early intervention, by both teachers and special educational resources, may be directly related to the future academic success of young children with developmental delays (Johnson-Staub, 2014).

Social-Emotional

One goal of IDEA was the importance of social integration between typically developing children and children with developmental delays. Research stated that evidence of meaningful

interactions and participation between students with developmental delays and typically developing peers should be clearly evident in inclusive settings (Guralnick & Bruder, 2016). In inclusive settings, it may be assumed that meaningful relationships and friendships can be formed for children of differing abilities (Noggle & Stites, 2017). Preschool teachers play an important role in identifying children who are not appropriately forming meaningful peer interactions and in intervening in these situations in order to promote the formation of friendships. Preschool teachers can help to form these relationships, which in turn can help peers to influence each other through various social interactions. Forming strong friendships between typically developing preschoolers and preschoolers with developmental delays can have a lasting impact on future ability to form meaningful social interactions with peers (Guralnick & Bruder, 2016).

Physical

Developmentally appropriate physical activity is important to the core of a high-quality preschool program (Bittner et al., 2020). Physical development requires the use of large muscles to gain increased movement and muscle control (Yang et al., 2019). Research recommends that preschool age children engage in at least two hours of physical play per day, which should include a combination of structured and unstructured activity. Proper opportunity for physical play promotes the many opportunities needed for young children to master new physical skills (Yang et al., 2019). Children with developmental delays may or may not have a physical component to the delay, however preschool teachers can play an important role in physical development of children with physical disabilities. One effective strategy is to incorporate movement breaks throughout the day, and for children with physical limitations, teachers can plan activities that all children in the class are able to participate (Yang et al., 2019).

Inclusive physical activities should be offered in the classroom outside of designated physical times including physical therapy and physical education classes (Bittner et al., 2020). With regards to physical ability, it is important for preschool teachers to understand the difference between a modification and an adaptation. Accommodation refers to a change in the manner in which the environment or the materials are used or adapted, but the adaptation does not change the standard or the expectation of the student or the general program. A modification changes the action that the child is doing in order to accomplish different content (Bittner et al., 2020). Whenever possible, IDEA and the least restrictive environment promote accommodations over modifications, and modifications should be used only when adaptations to the environment or materials are not possible (Bittner et al., 2020).

Other Support Strategies

In addition to tailoring teaching strategies to meet the needs of students with developmental delays throughout the traditional learning domains, other strategies can be implemented in the preschool classroom to meet the needs of students with varying abilities. Two of the strategies outlined in the literature review included project-based learning and peer mediation. Through project-based learning, students of varying abilities are encouraged to contribute to the learning of classmates and are given the opportunity to learn using various materials. Project work values the strengths and contributions of all students involved, regardless of learning ability. Children are given the opportunity to learn through experience, and teachers are given the opportunity to observe the work of the children. This observation by teachers can be used as a framework to focus on future learning in specific areas, which may be especially helpful for children with IEP goals to meet (Griebing et al., 2015). Peer mediation also provides opportunities for children with developmental delays to learn from typically developing peers.

Basic peer mediation skills include encouraging peer interactions, praising friends when they do engage in interactions, making eye contact to establish joint attention, and initiating play between children. Peers may also play an important role in encouraging responses from children with developmental delays and asking questions to further develop the play (Yang & Rusli, 2012). The research indicated that peer mediation can be especially helpful in increasing social skills and promoting interactions between typically developing children and children with developmental delays.

School Readiness and Transition to Kindergarten

Preschool teachers also play an important role in the transition of children to elementary school. As shown in the research, the implementation of targeted learning strategies in the inclusive preschool environment can have a positive effect on future learning outcomes for children with developmental delays (Guralnick & Bruder, 2016). Helping children with developmental delays to meet targeted learning objectives from the IEP throughout the learning domains, encouraging children to learn how to form meaningful peer interactions and friendships, and supporting the development of a strong framework in executive functioning skills are essential in promoting school readiness. Learning these skills can have a profound impact on academic success in kindergarten (Guralnick et al., 2008).

Children who have attended inclusive preschool settings are likely to be placed in inclusive kindergarten classrooms (Guralnick et al., 2008). However, the research illustrated that children with developmental delays may continue to experience difficulties with academic skills. Academic difficulties, especially as content becomes more difficult, may influence future inclusive classroom placement. Families and teachers can work together to serve as advocates for children with developmental delays, and children who have already demonstrated success in

inclusive programs may continue to be effectively accommodated in inclusive elementary settings (Guralnick et al., 2008).

Summary

Both research and legislation support the idea of inclusion in the preschool setting for children with developmental delays. Practical strategies can be implemented to meet the needs of young children with developmental delays through play-based and targeted intervention strategies. A flexible learning environment is ideal in promoting the idea that all young children, including those with developmental and physical delays are able to access, participate in, and make meaningful developmental gains (Yang et al., 2019). Preschool teachers can implement principles that guide teachers to ensure that learning opportunities are appropriate for the children enrolled in the program and that children are offered a variety of ways to access and utilize curriculum content, develop new skills, and demonstrate learning (Yang et al., 2019). This information can provide guidance for increased inclusivity and future focus of study in early childhood education.

Chapter 4: Discussion, Application, and Future Studies

High-quality preschool care ensures that children of all abilities are welcome in the classroom. Individualized learning practices allow for instructional differentiation through careful observation and assessment of preschool age students. Furthermore, both legislation through IDEA and best practice through NAEYC, provide clear direction of the expectation of inclusive practices in the classroom setting. While learning effective teaching strategies to support children with developmental delays is an important first step, more work can be done to ensure excellence in inclusive practices in the future. To truly excel as educators, it is important to identify the barriers in existence to achieving inclusive practices in the classroom and to examine areas for future advocacy and research.

Current Barriers to Supporting Children with Developmental Delays

When considering the idea of inclusivity in preschool classrooms, it is important to consider areas for potential improvement. One way to do that is to consider any barriers currently in place that prevent inclusive practices. Mattern (2014) examined some of the barriers teachers identified that make using inclusive practices difficult. Some of those identified included inadequate availability of appropriate assessment tools and insufficient professional development for pre-service teachers and current classroom teachers. Other barriers included the absence of collaboration among the community and the absence of collaboration among service providers. Insufficient funding for special education programs and a lack of availability of inclusive preschool programs were also identified as possible barriers (Mattern, 2014) (Guralnick & Bruder, 2016).

In the classroom, some teachers identified gaps in knowledge of effective practices for the identification, inclusion, and teaching of children with special needs. Some teachers

acknowledged receiving training in specific strategies for working with children with developmental delays but still noted feeling uncomfortable using these strategies in the classroom (Mattern, 2014). This identifies a potential need for more professional development for early childhood professionals both at the pre-service and ongoing development levels. In order to successfully identify children with developmental delays and ensure access to early intervention, teachers must both have access to and feel comfortable using authentic assessment tools.

The other areas identified as barriers included lack of collaboration of providers and lack of funding for special education programs. Some teachers also identified lack of special educational service providers as a barrier to achieving inclusive integration in the preschool classroom (Mattern, 2014). Despite the legal requirement for the existence of programs nationwide to provide access to special education services free of charge for all qualifying children, universal access to services is still a concern for preschool teachers and families of preschool age children with developmental delays (Guralnick & Bruder, 2016). In order for inclusive preschool programs to be effective, teachers must have the support of available special education providers, and collaboration between service providers and classroom teachers is essential.

Finally, lack of funding for special education services and for inclusive preschool programs must be addressed. In a 2016 study, it was reported that almost 25% of preschool age children with identified developmental delays did not have access to any amount of time with typically developing peers. Only 38%, less than half of the participating children in the study were enrolled in fully inclusive preschool programs (Guralnick & Bruder, 2016). Access to high-quality inclusive preschool programs remains a barrier to children with special needs, especially in rural areas and inner-city schools (Guralnick & Bruder, 2016).

Advocacy for Inclusion in the Preschool Classroom

Despite strong support for inclusion practices, there are easily identifiable challenges in the practice of including children with developmental delays in the general education preschool setting. There are still inequities for children with special needs in the classroom. Children with disabilities, including those with developmental delays, are more likely to be excluded or isolated in the preschool classroom (Yang & Rusli, 2012). To advocate for inclusion, the key areas identified above must be addressed through teacher, administrative, and legislative action. Legal advocacy is needed at the community, state, and national level. High-quality programs must advocate for public policy that supports professional development and collaboration between classroom teachers, special education teachers, therapists, and program directors (Mattern, 2014).

Local and National Legislation

State and community strategies that connect families, early childhood programs, and special education providers should be examined and enhanced. One initial advocacy strategy would be to enhance support for and availability of effective developmental screenings. Providing funding and reimbursement for expensive screening tools and the necessary staff needed to administer those evaluation tools could strongly increase identification and access to proper evaluation (Johnson-Staub, 2014). One suggestion is to consider tying mandatory developmental screening to state licensing or quality rating improvement system (QRIS) standards at the state level (Johnson-Staub, 2014). These QRIS indicators already support high-quality programs and provide areas for future growth. National programs are also needed to promote efforts to enhance developmental screenings and to foster relationships with early

childhood education professionals, policymakers, and funding considerations (Johnson-Staub, 2014).

Professional Development

Another distinct area for advocacy is in professional development for early childhood education professionals. Equipping teachers with the skills and knowledge needed to implement evidence-based practices for inclusion in the classroom is essential to the future of inclusive strategies (Yang & Rusli, 2012). Training in targeting IEP objectives, using inclusive strategies that work for students of varying ability where all can contribute, and peer mediation techniques are all important to the professional development of preschool teachers who service children with developmental delays. Professional development should also focus on further techniques for identifying children with developmental delays and usage of proper assessment tools and referral procedures (Mattern, 2014). Professional development could also focus on enhancement of access for inclusion techniques and increased opportunities for available programs that use inclusive teaching (Guralnick & Bruder, 2016). Early childhood professionals who have strong knowledge of early intervention screening and inclusive teaching techniques should share that knowledge with colleagues and other professional organizations in the community (Mattern, 2014).

The Future of Inclusion in the Preschool Classroom

Guralnick and Bruder (2016) identified four key goals for the future of inclusive practices in early childhood education. Those goals included improvements in the areas of access, accommodations and feasibility, developmental progress, and social integration. While those goals may sound daunting, challenging early childhood professionals to aim higher to achieve best practices for children with developmental delays and other disabilities in the classroom is

the future of inclusive teaching. The first step is to have the knowledge of what should be done to better service children enrolled in preschool programs.

First, to continue the culture of responsive care, early childhood professionals and policymakers must act on that knowledge and continue to strive for higher standards. Several strategies may exist to put that idea into practice. Some possibilities for action include consideration of how universal pre-K may impact children with special educational needs in the classroom and requiring developmental assessments for all preschool students enrolled in early childhood programs. Knowledge of inclusion-based practices may progress as universal pre-K programs continue to be implemented in more states across the nation (Guralnick & Bruder, 2016). Tying developmental assessment to QRIS standards in more states may also play an essential role in early identification and intervention for young children with developmental delays.

Other strategies for the future may include increased focus on replication of information already attained as well as the requiring of professional development in working with children with developmental delays. Further replication of intervention-based studies, especially in the areas of many of the strategies outlined in the literature review, may also provide an important role in addressing the best strategies for working with children with developmental delays in the classroom. More data in the areas of project-based learning, peer mediation, and school readiness may prove especially influential in addressing effective strategies for improving inclusion in the preschool setting. Finally, professional development in teaching young children with developmental delays may help preschool teachers feel more comfortable implementing inclusive strategies in the preschool setting.

Conclusion

Children with developmental delays may be first identified and referred for special education services while attending a general education preschool program. Observation and assessment play an important role in the identification of children with potential delays, and choosing the correct developmentally appropriate assessment tool is critical to ensuring young children have access to special educational services. Preschool teachers are responsible for communication with families and fostering the development of young children. Children learn academic and social skills in preschool that have a lifelong impact on educational success, and for children with developmental delays, the outcomes of attending an inclusive preschool setting outweigh the outcomes of attending a special education setting (Yang & Rusli, 2012). Higher scores in language development, social skills, academic success, improved behavioral outcomes, and development of friendships and social networks are all positive impacts of inclusive preschool programs (Yang & Rusli, 2012).

Advocacy for children with developmental delays is required, especially in the areas of assessment, funding, policymaking, and professional development to ensure a positive future for inclusive practices in high-quality preschool programs. Future implications in the area of inclusion may want to focus on universal pre-K as a benefit for children with developmental delays and the requirement of developmental assessment as part of QRIS goals. Further replication of studies in specialty areas of inclusion such as project-based learning and peer mediation may be helpful in providing teachers with new strategies for working with young children with developmental delays. Professional development that targets inclusion and inclusive teaching strategies may be helpful in providing preschool teachers with more comfort in working with children with special needs in the classroom. Together, policymakers and

educators can ensure improvements in access to special education services, accommodations for children with special needs, developmental progress and learning standards that meet the needs of children with varying abilities, and social integration and the formation of meaningful peer interactions are achieved for children with developmental delays.

References

- Bittner, M., Silliman-French, L., Lieberman, L. J., & Lytle, R. (2020). Twelve myths and facts about physical education for students with disabilities. *Journal of Physical Education, Recreation & Dance, 91*(1), 24–32.
- Botts, D. C., Losardo, A. S., Tillery, C. Y., & Werts, M. G. (2014). A comparison of activity-based intervention and embedded direct instruction when teaching emergent literacy skills. *Journal of Special Education, 48*(2), 120–134.
- Downs, A., & Strand, P. (2008). Effectiveness of emotion recognition training for young children with developmental delays. *Journal of Early and Intensive Behavior Intervention, 5*(1), 75–89.
- Griebeling, S., Elgas, P., & Konerman, R. (2015). “Trees and things that live in trees”: Three children with special needs experience the project approach. *Early Childhood Research & Practice, 17*(1).
- Guralnick, M. J., & Bruder, M. B. (2016). Early childhood inclusion in the United States: Goals, current status, and future directions. *Infants and Young Children, 29*(3), 166–177.
- Guralnick, M. J., Neville, B., Hammond, M. A., & Connor, R. T. (2008). Continuity and change from full-inclusion early childhood programs through the early elementary period. *Journal of Early Intervention, 30*(3), 237–250.
- Hallam, R., Lyons, A., Pretti-Frontczak, K., & Grisham-Brown, J. (2014). Comparing apples and oranges: The mismeasurement of young children through the mismatch of assessment purpose and the interpretation of results. *Topics in Early Childhood Special Education, 34*(2), 106-115.

- Hu, B. Y., Wu, H. P., Su, X. Y., & Roberts, S. K. (2017). An examination of Chinese preservice and inservice early childhood teachers' perspectives on the importance and feasibility of the implementation of key characteristics of quality inclusion. *International Journal of Inclusive Education, 21*(2), 187–204.
- Johnson-Staub, C. (2014). First steps for early success: State strategies to support developmental screening in early childhood settings. In *Center for Law and Social Policy, Inc. (CLASP)*. Center for Law and Social Policy, Inc. (CLASP).
- Lendrum, A., Barlow, A., & Humphrey, N. (2015). Developing positive school–home relationships through structured conversations with parents of learners with special educational needs and disabilities (SEND). *Journal of Research in Special Educational Needs, 15*(2), 87-96.
- Macy, M., Bagnato, S. J., Macy, R. S. & Salaway, J. (2015). Conventional tests and testing for early intervention eligibility. *Infants & Young Children, 28*(2), 182–204.
doi: 10.1097/IYC.0000000000000032
- Mattern, J. A. (2015). A mixed-methods study of early intervention implementation in the commonwealth of Pennsylvania: Supports, services, and policies for young children with developmental delays and disabilities. *Early Childhood Education Journal, 43*(1), 57–67.
- Noggle, A. K., & Stites, M. L. (2017). Inclusion and preschoolers who are typically developing: The lived experience. *Early Childhood Education Journal, 46*(5), 511–522.
- Rosenberg, L., Jacobi, S., & Bart, O. (2017). Executive functions and motor ability contribute to children's participation in daily activities. *Journal of Occupational Therapy, Schools & Early Intervention, 10*(3), 315–326.

- Rowe, M. (2010). Shaving cream and cowboys: A descriptive study of play differences between typically developing and developmentally delayed preschoolers. *Education Research and Perspectives, 37*(2), 64–78.
- Stanton-Chapman, T. L., & Brown, T. S. (2015). A strategy to increase the social interactions of 3-year-old children with disabilities in an inclusive classroom. *Topics in Early Childhood Special Education, 35*(1), 4–14.
- Warren, S. R., Martinez, R. S., & Sortino, L. A. (2016). Exploring the quality indicators of a successful full-inclusion preschool program. *Journal of Research in Childhood Education, 30*(4), 540–553.
- Willoughby, M. T., Magnus, B., Vernon-Feagans, L., & Blair, C. B. (2017). Developmental delays in executive function from 3 to 5 years of age predict kindergarten academic readiness. *Journal of Learning Disabilities, 50*(4), 359–372.
- Yang, C., & Rusli, E. (2012). Teacher training in using effective strategies for preschool children with disabilities in inclusive classrooms. *Journal of College Teaching & Learning (Online), 9*(1), 53.
- Yang, H.-W., Ostrosky, M. M., Favazza, P. C., Stalega, M. V., & Block, M. E. (2019). Embedding motor activities into inclusive preschools. *Young Exceptional Children, 22*(4), 177–186.
- Yu, S., Ostrosky, M., & Fowler, S. (2015). The relationship between preschoolers' attitudes and play behaviors toward classmates with disabilities. *Topics in Early Childhood Special Education, 35*(1), 40-51.