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Preschool Inclusion

Key Findings from Research and Implications for Policy

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An estimated 745,336 children age 3 to 5 have disabilities or developmental delays that entitle them to receive preschool special education services under Part B of the Individuals with Disabilities Education Act (IDEA) (U.S. Department of Education, 2015). Federal policy directs school districts to provide preschool special education services in the least restrictive environment (LRE). Compliance with LRE requires, in most cases, that children with disabilities participate in inclusive early care and education settings alongside typically developing children. Currently, however, nearly one-fourth of children who participate in preschool special education (23%) are served in separate classes, while 38% are in inclusive early care and education classrooms at least ten hours a day where they receive the majority of hours of their special education and related services (U.S. Department of Education, 2014). Other children's experiences include at least ten hours a week in inclusive early care and education settings with the majority of special education services provided outside of that setting and less than ten hours a week in inclusive early care and education with most special education services offered in that setting or in another environment. A recent policy statement issued by the U.S. Department of Health and Human Services (HHS) and U.S. Department of Education (DOE) on early childhood inclusion presents extensive recommendations for state and local actions that could improve young children's access to high quality inclusive preschool programs (HHS/DOE, 2015).

This brief builds on the research review and policy recommendations in the HHS/DOE policy statement. It highlights research relevant to three questions, outlined below:

1) What are the effects of inclusive preschool on children's early learning and development?

2) What is known about the quality of inclusive preschool programs?

3) What is known about how to improve the quality of inclusive preschool?

In a final section, this brief presents recommendations for policies that are supported by research, including policies related to the funding of early care and education programs, states' professional development systems, and investments in gathering critical information about inclusive preschool programs for ongoing monitoring and quality improvement.

The majority of studies reviewed in the following sections were published between 2000 and 2015 and were found through searches for research articles in the Child Care and Early Education Research Connections collection (http://www.researchconnections.org/childcare/welcome). Individual studies examining interventions and professional development were included in the review only if they were conducted in inclusive classrooms, while existing reviews sometimes include research in other settings.

What are the effects of preschool inclusion on children's development?

Preschool inclusion refers to the practice of educating children age 3 to 5 years with disabilities alongside their typically developing peers. Inclusive classrooms can be found in community based child care, Head Start, and preschool programs (Odom et al., 2004), and much of the research to date has examined inclusion in these settings. In studies that focused on children with disabilities in inclusive classrooms, the

most common disabilities were speech, language, and hearing impairments, developmental delays, cognitive impairments, Autism Spectrum Disorder (ASD), Down syndrome, and other health conditions (Green, Terry, & Gallagher, 2014; Holahan & Costenbader, 2000; Nahmias, Kase, & Mandell, 2014; Phillips & Meloy, 2012; Rafferty, Piscitelli, & Boettcher, 2003).

Research has found that children with disabilities in inclusive classrooms are more likely to engage in peer interactions compared to children with disabilities in segregated settings (Odom et al., 2004; Kwon, Elicker, & Kontos; 2011). This finding is important since interactions with peers reduce young children's social isolation and provide opportunities to acquire social, language and academic skills.

Research has also examined the math, language, literacy, and cognitive outcomes of children with disabilities in inclusive classrooms. Phillips and Meloy (2012) found that both children with disabilities and typically developing children who attended an inclusive high quality prekindergarten program made significant gains in early literacy scores but not in early math, and achievement gains were comparable across the two groups. Green et al. (2014) found generally positive impacts on the language and literacy outcomes of children with disabilities in inclusive classrooms that established strong teaching practices and learning environments as part of the federally funded Early Reading First initiative. Children with disabilities made similar gains in print awareness and oral language as their typically developing peers, although they did not catch up to them, and the gap between the groups widened for phonological awareness skills. The authors suggest that more explicit small group instruction in phonological awareness may be necessary for children with disabilities. In examining the effect of inclusion on children with ASD, Nahmias et al. (2014) found that placement in inclusive settings as compared to autism-only or mixed-disability settings, was associated with better cognitive outcomes upon entry into elementary school, especially for children with initially lower social-emotional skills.

Findings concerning the effects of inclusion based on severity of disability are limited. One study found that children with disabilities who function at a higher level of social-emotional development make more progress on social skills in inclusive settings than in segregated settings, while those functioning at a lower level progress at the same rate in inclusive and segregated settings (Holohan & Costenbader, 2000). Another study, which examined preschoolers' gains in language skills and social competence in inclusive and segregated classes, found that for children with mild to moderate disabilities, there were no differences in gains between inclusive and segregated classes. However, for children with severe disabilities, gains were greater for those in inclusive classes compared to their peers in segregated classes, though problem behaviors were lower for those in segregated classes (Rafferty et al., 2003).

In examining the effect of inclusion on typically developing children, most of the research has focused on the attitudes of typically developing children towards children with disabilities. Research shows that typically developing children in inclusive settings have more positive attitudes towards children with disabilities compared to children who do not encounter peers with disabilities (Diamond & Huang, 2005; Yu, Ostrosky, & Fowler, 2012). Additionally, Diamond (2001) found that typically developing children in inclusive classrooms who had social contact with classmates with disabilities scored higher on measures of emotion understanding compared to children who had social contact only with other typically developing children.

Overall, the research provides support for inclusion as a strategy for improving key competencies related to later school success, and for helping children with disabilities become more fully engaged in the social life of preschool classrooms. However, there are several important factors that can influence the effects of inclusion on children with disabilities, especially features of program quality. The next section will focus on what we know about the quality of inclusive programs.

What is known about quality in inclusive early care and education classrooms?

In their recent discussion about how to advance high quality preschool inclusion, Barton and Smith (2015) review the empirical support for the three dimensions of effective inclusion outlined in the DEC/NAEYC (2009) statement on preschool inclusion programs: 1) access to learning opportunities (e.g., through provision of materials that can be used both by children with and without physical disabilities); 2) active participation in learning, assisted by adults using individualized practices; and 3) supports that give adults (teachers and parents) the resources they need to help children learn. Current research has only begun to examine these and other dimensions of quality in inclusive classrooms. However, emerging research points to several important aspects of quality that should be considered in ongoing efforts to assess and strengthen inclusive learning opportunities for preschoolers with disabilities.

One approach to assessing quality in inclusive classrooms has been to use measures of quality that are typically used in assessments of regular early care and education settings, without regard to their inclusion of children with disabilities. In the first of a set of studies that used a global measure of quality, the Early Childhood Environmental Rating Scale-Revised (ECERS-R, Harms, Clifford, & Cryer, 1998), both inclusive and non-inclusive classrooms received scores mainly in the "good" range, though higher scores were found in the inclusive classrooms (Hestenes, Cassidy, Shimm, & Hegde, 2008). The preschool programs in this study were likely among the higher quality ones in the state, North Carolina, since they were participating in ECERS-R assessments in an attempt to earn higher ratings in the state's Quality Rating Improvement System (QRIS). In a second study with a smaller, but more diverse group of child care programs in three cities in North Carolina, global quality for inclusive classrooms, based on ECERS-R scores, was in the high average to good range and similar to non-inclusive classrooms. Ratings on a measure of teacher-child interaction, the Teacher-Child Interaction Scale (Farran and Collins, 1996), indicated significantly more developmentally appropriate, sensitive, and responsive teacher behavior in inclusive compared to non-inclusive classrooms. In both studies, teacher education and staff-child ratios were related to global quality.

Other research has focused on practices that support children's learning in specific domains. Using a measure of the literacy environment and the instructional support subscale of the Classroom Assessment Scoring System (CLASS Pre-K; Pianta, La Paro, & Hamre, 2008), Guo, Sawyer, Justice, and Kaderavek (2013) documented weaknesses in both the provision of literacy materials (e.g., writing tools, print models, and literacy props) and the quality of supports for children's language development in inclusive preschool classrooms. In this study, higher teacher education – having a Master's degree – was associated with higher quality instruction as measured by the CLASS subscale that includes a focus on supports for children's language development. The findings of low quality language and literacy learning experiences in the 54 inclusive classrooms in this study are notable in light of the relatively high level of classroom teachers' education; all teachers had a four-year degree, 57 percent had a Master's degree, and 50 percent had a degree in special education. Irvin, Boyd, and Odom (2015) examined teacher talk in inclusive classrooms and found that teacher talk intended to support peer interactions was infrequent and occurred most often in settings where children with autism who were targeted for social skills interventions did not spend much time. A recent national survey of Head Start teachers investigated teacher practices used to support the language and literacy of children with various disabilities (McDonnell, Hawken, Johnston, Kidder, Lynes, & McDonnell, 2014). While teachers reported daily use of many research-based strategies, their responses indicated low use of practices that can help make literacy materials accessible to visually and physically disabled children, and only about half or fewer of the teachers reported daily use of key language support strategies for children with speech and language disabilities.

Recently, the development of a measure specifically designed to assess the quality of inclusive classrooms has created opportunities to examine dimensions of

classroom quality that are viewed as important to the learning experiences of preschoolers with disabilities. The Inclusive Classroom Profile (ICP) is an observation-based assessment of classroom practices that have been shown in previous research to support the development of young children, age 2 to 5, with disabilities in an inclusive classroom (Soukakou, Winton, West, Sideris, & Rucker, 2015). Its items generally relate to the quality dimensions outlined in the DEC/NAEYC position statement. For example, an item's assessment of a program's adaptation of space, materials, and equipment measures an aspect of children's access to learning experiences while another item's assessment of supports for peer interaction reflects a focus on teachers' efforts to promote active participation.

The ICP has shown promise in two validity studies, although future research is needed to investigate relationships between scores and child outcomes (Soukakou, 2012; Soukakou et al., 2015). In the US study of the ICP, considerable variability in scores was found among programs that had received QRIS ratings in the middle to high range, suggesting that the ICP could be used to assess programs' need for technical assistance specifically focused on high quality inclusion practices that promote the learning of children with disabilities (Soukakou et al., 2015). Compared to other types of programs (e.g., prekindergarten, Head Start), child care settings had the lowest ICP scores, possibly reflecting what the researchers note as a weaker mandate to enroll children with disabilities and less access to appropriate technical assistance. Another recent study of Head Start classrooms that used the ICP also found high variability in quality across classrooms; research characterized children in low-scoring classrooms as being physically present, but not fully participating in classroom learning experiences due to a lack of individualized supports for their engagement (Muccio, Kidd, White, & Burns, 2014). In a survey of needed and available supports for inclusion administered to teachers in this study, most teachers indicated that professional development is critical to helping them deliver effective inclusion practices while this support is not available to support their teaching.

Other potentially important features of quality in inclusive classrooms are structural and compositional attributes. Some of the studies reviewed here found relationships between quality indicators and teacher education (Guo et al., 2013; Hestenes et al., 2008) or teacher- child ratios (Hestenes et al., 2008). These results align with those that have been found, although not with complete consistency, in studies of early care and education settings not serving children with disabilities (e.g., Burchinal, Cryer, Clifford, & Howes, 2002; Phillips, Mekos, Scarr, McCartney, & Abbott–Shim, 2001). Classroom composition refers to the mix of children in the classroom who have certain characteristics. Recently, researchers have begun to investigate "peer effects" that may become evident when there is variation across classrooms in the percentage of children with strong versus weak skills in certain domains, such as language and social competence. In the first study of peer effects on children's language skills in inclusive preschool classrooms, Justice, Logan, Lin, and Kaderavek (2014) found that all children in inclusive classrooms where peers had, on average, weaker language skills, showed less growth in language skills over the school year. Peer effects were strongest for children with disabilities who were in classrooms with peers who had weak language skills. This study was implemented in programs where about 50 percent of children had IEPs, although there was some variation across classrooms. Recently, other researchers used compositional measures in Head Start classrooms to predict children's social competence and behavior problems in kindergarten (Yudron, Jones, & Raver, 2014). Head Start programs tend to be inclusive given a requirement that at least ten percent of children enrolled in Head Start programs are children with disabilities. Kindergarten children's internalizing behavior (e.g., sadness, anxiety) was predicted by their participation in Head Start classrooms with a high proportion of children with very elevated externalizing behaviors (e.g., challenging behavior such as hitting or yelling), and their social competence was predicted by the classroom average on a measure of challenging behavior.

At present, it is not possible to draw broad conclusions about the quality of preschool inclusion programs from the still limited number of studies that

have assessed these programs with different types of measures. In addition to varied results across studies using different measures, the approach to recruiting programs appears, in some cases, to have limited the range of quality in the sample. Considered together, the studies do suggest possible strengths and limitations of individual measures and ways they might be used in combination. Global measures of quality such as the ECCERS-R might be most useful as a measure of foundational quality. Inclusive programs that achieve good quality on a global quality measure most likely have basic features of quality that provide a foundation for other features that are more directly tied to the learning experiences of children with disabilities. A classroom assessment tool like the ICP measures specific features of the classroom environment and teaching that are used to support the learning of children with disabilities. It is likely that some inclusive programs that demonstrate good global quality show weaker practices that should be used in teaching children with disabilities. At the same time, the ICP does not focus its assessment of teaching practices in particular domains, such as language and literacy; programs assessed with the ICP may need to find additional ways to examine and document teaching practices directed to children with disabilities that can promote learning in specific domains, including language, literacy, social-competence, and early math. Finally, structural and compositional measures appear to influence the learning experiences of children in inclusive classrooms.

What is known about how to improve the quality of inclusive preschool programs?

Interventions

While research points to the benefits of preschool inclusion programs for young children with disabilities, simply enrolling them in programs with typically developing peers might be insufficient to address their learning needs (Odom et al., 2004). Interventions and specialized instruction that focus on improving particular skills of children with disabilities are typically needed to create high quality learning experiences in inclusive classrooms (Odom, Buysse, & Soukakou, 2011). This section examines research on different types of interventions that have been used in inclusive classrooms to support the learning of young children with disabilities.

Naturalistic Approaches and Embedded Instruction

According to Snyder, Rakap, et al. (2015) naturalistic interventions have four features: instruction occurs in typically occurring activities and routines; instruction focuses on skills needed by the child to participate fully in activities or to meet activity demands; the teaching episode is child-initiated or initiated by an adult based on the child's interest; and the adults who implement the intervention are those who interact with the child regularly. An example of a naturalistic teaching strategy is modifying the learning environment by placing a desired object out of reach to encourage a child with limited communication and social skills to express interest in the object to the teacher or a peer. In their recent review of research on naturalistic instructional approaches, Snyder, Rakap, et al. (2015), found that in the majority of studies naturalistic approaches resulted in the acquisition of targeted skills, including communication, social and preacademic competencies. Although fewer than 50 percent of studies reported information about whether children maintained these skills or showed an ability to use them in a variety of situations, the 20 studies that provided maintenance data reported evidence that a high percentage of children maintained skills during the study period. In addition, 18 studies reported that some children generalized these skills across settings and people. Most of the studies in the review examined interventions carried out in inclusive classrooms.

One type of naturalistic approach, embedded instruction, uses teaching strategies designed to address specific objectives in the child's Individual Education Plan (IEP) during naturally occurring classroom routines, activities and transitions (e.g., circle time,

free play, learning centers, snack time) (Rakap & Parlak-Rakap, 2011). In their review of studies that used embedded instruction in inclusive preschool classrooms, Rakap and Parklak-Rakap (2011) conclude that embedded instruction is an effective practice for teaching a range of skills, including language, preacademic, and social skills, to children with disabilities in inclusive preschool programs. Additionally, they find that embedded instruction resulted in the generalization of these skills across settings, activities and people, as well as the maintenance of these skills over time.

Two recent studies have also examined the use of embedded direct instruction in promoting literacy and math skills among preschool children with disabilities in inclusive programs. One study compared the use of an activity-based intervention (a more child-directed approach with naturally occurring antecedents and consequences) with embedded direct instruction on the phonological awareness skills of five children diagnosed with mild to moderate language impairment in an inclusive preschool classroom (Bott, Losardo, Tillery, & Werts, 2014). The study found that embedded direct instruction was more effective than an activity-based intervention in helping children acquire phonological awareness skills. Learning these particular skills, the researchers suggest, may require that teachers initiate and lead a learning task that provides explicit and systematic instruction. Davenport and Johnston (2015) examined the effect of embedding direct instruction approaches (prompting, providing consequences and prompt fading) on teaching math and numeracy skills to three preschool children with developmental delays in an inclusive classroom, using a learning center where the children preferred to play during free choice time. Results indicated that reducing the strength of the prompt over time was effective in teaching the identified skills and resulted in generalization of these skills to new people.

Peer-Mediated Strategies

Peer mediated strategies comprise another approach to promoting social, communication, and language skills of young children with disabilities and can also be embedded in ongoing activities and routines in inclusive classrooms. In peer-mediated strategies, typically developing children are taught ways to interact with and help children with disabilities acquire new skills (Neitzel, 2008). Research has demonstrated the effectiveness of peer-mediated strategies in increasing the social interactions between typically developing children and children with disabilities (Terpstra & Tamura, 2008; Odom et al., 2004). Examples include peer imitation strategies in which children with and without disabilities take turns being the 'leader' in a small group activity while the other children are asked to imitate the leader (Garfinkle & Schwartz, 2002); training typically developing children to use songs, finger play and verbal cues to encourage peers with disabilities to remain in an activity and participate in circle time (Robertson, Green, Alper, Schloss, & Kolher, 2003); and training typically developing children on the use of visual aids to initiate play (Nelson, McDonnel, Johnston, Crompton, & Nelson, 2007).

Teacher-led Interventions that use Stories

One type of teacher-led social-skills intervention uses social stories that describe a situation that a child may encounter and the behaviors the child should use in that situation (Gray & Garand, 1993). Often, social stories are written to highlight behaviors that individual children need to modify, and reading the stories to children is sometimes combined with other interventions such as verbal prompts to encourage children to use desired behaviors. Crozier and Tincani (2007) used social stories and verbal prompts to enhance behaviors of three preschoolers with autism in an inclusive classroom. They found that while there was an overall increase in the targeted prosocial behaviors across participants, not all the children maintained the behavior after the intervention, suggesting that ongoing use of the social stories may be necessary to maintain their effect. Another study (More, Sileo, Higgins, Tandy, & Tannock, 2013) used social stories that described general social skills (e.g., taking turns, giving a compliment, inviting a friend to play) rather than specific skills that individual children needed to strengthen. The study was conducted in a community-based inclusive preschool program that served children whose disabilities included developmental delay,

autism, and other health impairments. Even under a condition in which the social stories were read to children and they were given a chance to practice targeted behaviors directly after the story, the children did not demonstrate an increase in prosocial behaviors. The researchers suggest that it may be important to tailor the content of a social story to the needs of individual children.

Another teacher-led social-skills intervention in an inclusive classroom combined shared story book reading with theme-related dramatic play activities that incorporated social interaction (e.g., grocery store, doctor's office, construction) and prompts to engage in desired behaviors. Stanton-Chapman and Snell (2010) evaluated the effects of the intervention on children's conversation and play. The children with disabilities had specific language impairment, developmental delay, or behavior disorder. The intervention led to their increased initiations of social interactions that resulted in immediate peer responses as well as increased peer play following the intervention, and for some children, an increase in positive interactions on the playground.

Professional Development

The quality of teacher practices in inclusive classrooms is highly dependent on their professional development. Early childhood researchers have called for the expansion of both inservice and preservice professional development that bridges the gap between research and practice and contributes to highly effective teachers in inclusive classrooms (Chang, Early, & Winton, 2005; Campbell & Milbourne, 2005; Snyder, Hemmeter, & Fox, 2015). Two key goals of professional development are improving teachers' positive attitudes about inclusion (e.g., Bruns & Mogharreban, 2007; Mitchell & Hegde, 2007; Muccio et al., 2014; Rheams & Bain, 2004) and increasing their ability to use targeted strategies in the daily routines of children with disabilities in an inclusive classroom (e.g., Artman-Meeker & Hemmeter, 2013; Brown, Gaitman, & Harjusola-Webb, 2014; Harjusola-Webb & Robbins, 2012; Muccio et al., 2014; Ottley & Hanline, 2014). The next sections will focus on these two aspects of professional development.

Teacher Beliefs and Attitudes towards Inclusion

Numerous studies have investigated early childhood educators' beliefs and attitudes about inclusion (e.g., Bruns & Mogharreban, 2007; Mitchell & Hegde, 2007; Muccio et al., 2014; Rheams & Bain, 2004). Bruns and Mogharreban (2007) found that the majority (over 75%) of Head Start and Pre-K teachers who were surveyed had positive attitudes about inclusion and reported using several effective practices in inclusive classrooms to promote learning for children with disabilities. Other studies have found associations between positive teacher beliefs about inclusion and effective inclusion practices (e.g., Mitchell & Hegde, 2007; Muccio et al., 2014; Rakap, Cig, & Parlak-Rakap, 2015; Rheams & Bain, 2004). Early childhood educators with more positive attitudes toward teaching children in inclusive classrooms are more likely to implement teaching strategies related to goals in children's IEPs during daily routines, create accessible environments for children with disabilities, and use appropriate strategies to promote positive behavior outcomes. However, the exact factors that might be influencing teacher beliefs and practices have been hard to decipher (Mitchell & Hegde, 2007).

In an effort to learn about experiences that might help early childhood teachers develop positive attitudes toward inclusion, Voss and Bufkin (2011) surveyed 123 preservice students in a program preparing early childhood education and early childhood special education teachers. The student teachers participated in courses (e.g., on evidence-based inclusive teaching strategies) that were coordinated with structured field placements in inclusive classrooms where they worked with children with disabilities. Survey results showed that student teachers' confidence in their ability to work effectively with children with disabilities in inclusive classrooms, and interest in this work, increased significantly over the time they completed their courses and fieldwork. Data from interviews and reflections documented students' initial perceived lack of competence and the high

value they later placed on their work in inclusive classrooms. Similarly, Rakap et al. (2015) found that preservice teachers' participation in two courses in special education positively influenced their attitudes towards inclusion, their willingness to include children with severe disabilities in their classrooms, and their level of comfort when interacting with individuals with disabilities; the course focused on specific instructional strategies for working with children with disabilities in inclusive classrooms had the largest positive impact. The researchers concluded that teacher candidates should be required to take courses that would provide them with instructional strategies that can be helpful while working with children with disabilities and opportunities to apply these strategies in classroom settings.

Professional Development to Improve Practice

Several studies have tested the benefits of coaching in combination with training in an intervention to support high quality inclusion practices (e.g., Artman-Meeker & Hemmeter, 2013; Brown et al., 2014; Harjusola-Webb & Robbins, 2012; Ottley & Hanline, 2014). These studies show that a combination of group training and coaching helps early childhood educators use recommended practices more regularly than educators who are not provided with these supports. Additional features of these successful professional development initiatives include the provision of continued support for the intervention's delivery, performance-specific feedback to teachers about their use of targeted practices during coaching sessions, and ongoing monitoring of instructional practices. In some cases, prolonged coaching, lasting as much as two years, appears necessary in order to reach fidelity when implementing a comprehensive, evidence-based intervention (Strain & Bovey, 2011).

There is growing evidence that some forms of technology-based training and coaching can play a role in helping improve teacher practices in inclusive classrooms. Snyder, Hemmeter, McLean, et al. (2015) compared on-site expert coaching with web-mediated self-coaching for teachers in inclusive classrooms. In web-mediated coaching, teachers had access to a password protected website and additional frequent emails, phone calls, and video conferencing between the coach and teacher were used. These researchers found positive practice-based coaching effects across the two approaches on some of the teachers' embedded instruction practices (e.g., instruction to support writing). However, teachers in the on-site coaching condition implemented embedded instruction more frequently and their embedded instruction showed higher quality (fidelity to how they were trained to implement embedded instruction) than teachers in the self-coaching condition and teachers who had not received coaching. When using The Classroom Assessment Scoring System PreK (CLASS PreK; Pianta, La Paro, & Hamre, 2008) these researchers reported no statistically significant differences across intervention conditions for the emotional support, instructional support, and classroom organization domains.

Hemmeter, Hardy, Schnitz, Adams, and Kinder (2015) investigated the effects of training and coaching on teachers' implementation and generalization of practices related to the Pyramid Model for Promoting Social-Emotional Competence in Young Children. The coach augmented in-person group training included video examples and discussions of how to individualize the practices in the teacher's classroom with in-person coaching and email feedback after reviewing videos of teacher practices. Researchers report that all teachers in this study increased their use of targeted teaching practices and maintained the use of practices with only periodic reminders. Further, Artman-Meeker and Hemmeter (2013) found distance training by reviewing video of teachers' classroom performance and providing email feedback to be an efficient and viable coaching practice that reduced coach and teachers' investment in time and produced significant changes in practice.

Another coaching delivery format uses bug-in-ear technology to support professionals' acquisition of applied skills in naturally occurring routines in inclusive classrooms (e.g., Rock, et al., 2014; Rock et al., 2012; Scheeler, McKinnon, & Stout, 2012). The bug-in-ear is a wireless, one-way communication instrument that allows the coach to communicate privately with the early childhood educator. In a single-case design study with four teacher-child

dyads, Ottley and Hanline (2014) found this method of coaching to significantly increase four early childhood educators' use and partial maintenance of embedded communication support strategies in an inclusive classroom.

What policies can support inclusion practices that benefit children?

The research reviewed in this brief indicates that young children with disabilities benefit from being in inclusive early care and education settings with typically developing peers, although the extent of children's learning and social development is likely to depend on many features of the setting (e.g., teachers' use of effective instruction tailored to the needs of individual children with disabilities; classroom composition, and teacher-child ratios). Typically developing children in inclusive classrooms also appear to benefit, acquiring a greater ability to understand others' emotions and more positive attitudes towards individuals with disabilities. Overall, the research underscores the importance of policies designed to increase the number of children with disabilities who have access to high quality inclusive preschool settings. The research also suggests that policies aimed at improving the quality of inclusive preschool programs should reflect a growing body of knowledge about evidence-informed teaching practices and strategies for achieving high quality early childhood inclusion. The recent HHS/DOE, 2015 policy statement on inclusion of children with disabilities in early childhood programs, presented a wide range of recommendations for state and local action. The recommendations offered below are aligned with and build upon those presented in this federal guidance.

States should review policies across early care and education programs that affect young children's access to high quality inclusive preschool programs and establish multiple policies to promote access to these programs. The HHS/DOE, 2015 statement suggests that states use an existing policy council or task force, including the Early Learning Advisory Council, to develop a comprehensive plan for increasing young children's access to inclusive programs. The following are policies that should be considered as key elements in a comprehensive effort to increase young children's access to inclusive programs:

- Prekindergarten and child care programs should be required to conduct and report on outreach efforts to agencies serving young children with disabilities to encourage enrollment of these children; programs should also be required to report on the number of children with different types of disabilities that they enroll.

- Funding for early care and education for children with disabilities should be largely reserved for participation in inclusive classrooms to help ensure adequate slots across geographic areas, and adequate staffing, services, environmental supports, and professional development in these programs.

- States should conduct periodic surveys of programs' classroom compositions (ratios of typically developing children to children with disabilities), child-teacher ratios, teacher education, and professional development supports to determine how many children with disabilities are in programs with features associated with more positive learning experiences for children with disabilities.

States should review and strengthen pre-service early childhood teacher preparation programs to ensure that course work and fieldwork are designed to help teachers develop positive views about inclusion and learn to use evidence-based practices that benefit children with disabilities in inclusive programs. In addition to considering dual degree programs in special and regular early childhood education, early childhood teacher training programs should be required to have course work and linked practicum experiences in inclusive classrooms that use research-based practices and mentor student teachers in the use of these practices.

States' Professional Development (PD) Systems, including QRIS, should offer linked training and coaching designed to help teachers use

evidence-based practices that promote learning in children with disabilities in inclusive classrooms. A growing body of research, highlighted in this brief, supports the benefits of a wide range of instructional practices that can be used in inclusive classrooms (e.g., embedded instruction, peer-mediated strategies). Competencies for professional development specialists and ongoing training and support for these specialists should include a strong focus on evidence-informed practices that help children with disabilities acquire school readiness skills. States should provide adequate funding to ensure that these specialists can work with early care and education programs across the state using on-site and technology-based training and coaching strategies that have demonstrated efficacy.

State QRIS standards should provide indicators that promote efforts to strengthen the quality of inclusive programs. The following are examples related to these goals:

- Requirements that directors and teachers participate in professional development that helps them acquire skills in implementing research-based practices known to promote learning in young children with disabilities in inclusive classrooms.

- QRIS standards with indicators at all levels that describe research-based practices for promoting the learning of children with disabilities in inclusive preschool classrooms.

States' QRIS or professional development systems should support programs and providers in the use of classroom assessments that identify strengths and gaps in practices that are important to the learning and social-emotional growth of young children with disabilities in inclusive classrooms. This approach will require that more global assessments be supplemented by efforts to assess practices known to benefit children with disabilities, including practices used to support children's learning in key domains, such as language and literacy.

States should provide guidelines concerning classroom ratios of children with disabilities to typically developing children. Research on peer effects in inclusive classrooms, reviewed earlier, generally aligns with a recommendation to use the principal of natural proportions, offered in the recent federal statement on inclusion (HHS/DOE, 2015). According to this principle, the proportion of young children in an inclusive classroom should be similar to the proportion of young children with disabilities in the general population. The practical result would be guidance recommending that children with disabilities not comprise more than about one-third of a class since prevalence estimates of children with disabilities are 15 percent in the general population and twice this percentage among low-income children (Boyle et al., 2011). A higher percentage of typically developing peers, whose skills might be expected to be stronger than their peers who have disabilities, would create a classroom composition with peer effects that would likely benefit children with disabilities.

State and local agencies that invest in evaluations of preschool programs and QRIS should maximize opportunities to learn about the effectiveness of inclusive classrooms in the district, city, or state, and features of programs in which children show the strongest learning outcomes. This will require establishing study goals that include learning about inclusive programs' impacts on children, documenting key features of inclusive classrooms that may influence children's learning (e.g., classroom composition, staffing, use of professional development) and using appropriate measures of quality to capture practices relevant to young children with disabilities in inclusive classrooms.

Conclusion

The 2009 joint statement on preschool inclusion by the Division for Early Childhood of the Council of Exceptional Children and the National Association for the Education of Young Children (DEC/NAEYC, 2009) presaged key recommendations found in this brief and in the recent HHS/DOE statement. Although gaps in research exist, there is now substantial evidence concerning the benefits of preschool inclusion and research that can help guide efforts to achieve high quality preschool inclusion. This research should strongly inform policies designed to help young children with disabilities have greater access to high quality inclusion, expanding their opportunities to achieve their full potential.

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