INCLUSIVE EDUCATION IN SCHOOLS AND EARLY CHILDHOOD SETTINGS

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Abstract

Inclusive education is generally conceptualized as *access* to learning opportunities, *participation* with typically-developing peers and adults, and systems-level *supports* (Division for Early Childhood [DEC] & National Association for the Education of Young Children [NAEYC], 2009). This definition has become the cornerstone for efforts to support teachers' practice (Barton & Smith, 2015a; Odom, Buysse, & Soukakou, 2011) and federal efforts to advance high-quality inclusive education (U.S. Department of Health and Human Services & U.S. Department of Education, 2015). Yet, research has inconsistently taken up this definition, instead, positioning any classroom with both children with and without disabilities as inclusive (e.g., Hardiman, Guerin, & Fitzsimons, 2009; Nahimas, Kase, & Mandell, 2014; Pelatti, Dynia, Logan, Justice, & Kaderavek, 2016; Rafferty, Piscitelli, & Boettcher, 2003). Additionally, the rapid increase in early childhood education (ECE) programs has created a patchwork early education system with differences based on funding sources, attendance eligibility criteria, teaching and staffing patterns, and program standards, among other features (Guralnick & Bruder, 2016). Consequently, children with disabilities may be included into a variety of different types of early childhood settings that differ based on their classroom's organizational context and service delivery models (Odom et al., 1999). More research is needed to understand how the three core features of inclusive education (access, participation, supports) may differ across different types of early childhood settings. Such information would allow the field to differentially support programs to facilitate high-quality inclusive education for young children with developmental delays or disabilities.

The present dissertation study aimed to add to the literature regarding the influence of contextual features (i.e., organizational context, service delivery model) on the quality of

children's inclusive education and their individual classroom experiences. The study was conceptually grounded in bioecological systems theory (Bronfenbrenner, 1994; Bronfenbrenner & Morris, 2006), the DEC and NAEYC (2009) definition of inclusive education, and the inclusion models categorization put forth by Odom and colleagues (1999). The study used a sequential explanatory mixed methods design (Creswell & Plano Clark, 2011; Ivankova, Creswell, & Stick, 2006) and embedded, multiple case study method of inquiry (Yin, 2014). Seven classrooms across four programs participated, including 12 children with disabilities and nine children without disabilities who participated as focus children. The classrooms represented three inclusion models: Co-teaching classrooms within the public school setting, early childhood special education (ECSE) classrooms within the public school setting, and early childhood education (ECE) classrooms within a community-based center. The Classrooms Assessment Scoring System (CLASS) and the Inclusive Classroom Profile (ICP) were used as classroom-level measures of global and inclusion quality, respectively. Additionally, the Classroom Code for Interactive Recording of Children's Learning Environments (CIRCLE) served as a child-level measure of children's individual classroom experiences. Finally, 11 classroom teachers and four program administrators participated in interviews to provide their perspectives on implementing inclusive education within their contexts.

Findings revealed multiple differences between organizational contexts and service delivery models. Organizational contexts appeared to differ in the extent to which teachers provided academic content aligned with early learning standards, how much teachers incorporated child-initiated activities, and teachers' progress monitoring practices. Service delivery models appeared to differ in teachers' feedback practices for children with and without disabilities, teachers' facilitation of peer interactions, and the ways teachers taught academic

content. Programs' differential approaches to the general education curriculum, lesson planning processes, and teacher feedback mechanisms appeared to influence the contextual differences that were observed.

Findings provide evidence that early childhood settings do indeed differ in their strengths and needs related to providing high-quality inclusive education. Additionally, findings have significant implications for future research on inclusive education. By examining inclusive education across multiple contexts using a mixed methods approach, this exploratory study contributes a new perspective about how high-quality inclusive education may be supported in context-specific ways.

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Table of Contents

List of Figures

List of Tables

Chapter 1: Background

Recently, the U.S. Department of Health and Human Services and Department of Education released an unprecedented joint policy statement further promoting and providing guidance on including children with disabilities into high-quality early childhood education (ECE) programs. The statement was groundbreaking, in part, because it specifically noted the need for children with disabilities to be included into otherwise high-quality ECE programs, regardless of whether the program is within a public school (U.S. Department of Health and Human Services & U.S. Department of Education, 2015). The statement moved away from the assumption that a high-quality classroom guarantees high-quality inclusive practices, and vice versa, by differentiating the need for high-quality ECE and high-quality inclusion. Further, by specifically considering the different types of early childhood education programs young children are educated within, the federal departments pointed to a conceptualization of inclusive education as a matter of instructional practice and institutional processes, rather than physical placement. Thus, the statement both reiterated a definition of inclusive education that is not placement-based and indicated the importance of context when considering how to support high-quality inclusive education. The present study aimed to advance the field's understanding of inclusive education as a contextualized process in line with the federal statement promoting high-quality inclusive education.

This chapter outlines background information for the present dissertation study by discussing the contexts and key features of inclusive early childhood education. The background information will be organized around three areas: the evolution of how inclusive education is defined in early childhood education, the diversity of classroom features across early childhood settings that may influence inclusive practices, and definitions of quality in early childhood

education settings. Implications for research and a context-specific understanding of high-quality inclusive education will be addressed across each of these three areas.

Defining Inclusive Education: Place or Practice?

Theoretical and Conceptual Definitions of Inclusive Education

Efforts have continuously been made to conceptually define inclusive education as a matter of instructional practice and social integration, not placement (Odom, Buysse, & Soukakou, 2011). During one of the earlier efforts to characterize inclusive education, researchers argued that inclusion is a locally-defined, flexible, and individualized process based on the needs of the children and families being served (Schwartz, Sandall, Odom, Horn, & Beckman, 2002). The authors, part of the Early Childhood Research Institute on Inclusion (ECRII), argued for the need to divorce inclusive education from a particular setting in order to provide appropriate and effective services to all children and families. Following this perspective, the Division for Early Childhood (DEC) and National Association for the Education of Young Childhood (NAEYC) put forth a more defined, yet not placement-focused, conceptualization of inclusive education as: a) *access* to a wide variety of learning opportunities, b) individualized accommodations and modifications that facilitate *participation* with adults and peers, and c) systems-level *supports* that undergird classroom efforts (e.g., professional development) (DEC & NAEYC, 2009). The two professional organizations published the joint statement in order to advance a shared national definition of inclusion that would support a better understanding of the practices and supports necessary for its high-quality implementation (DEC & NAEYC, 2009).

The DEC and NAEYC (2009) statement has since become a center point in efforts to define or conceptualize the key components of early childhood inclusion. However, scholars

have continued to build on this conceptualization to identify key aspects of early childhood inclusive education. For example, Odom et al. (2011) synthesized research from two national centers on inclusion to identify "synthesis points" around the conceptualization and implementation of early childhood inclusion. These points included a broad definition of inclusive education as being essentially about belonging, participation, and reaching one's full potential. Additionally, the authors pointed to several practices as being essential for high-quality inclusion, including: collaboration; specialized instruction, interventions, and supports; and professional development. The authors' discussion of these practices indicates possible points of divergence between inclusion and *high-quality* inclusion. Finally, the aforementioned US Department of Education & Department of Health and Human Services (2015) policy statement both affirmed and built on the DEC and NAEYC definition of inclusion. The federal departments signaled a focus on inclusive practice and institutional structures, rather than physical placement, by naming the defining features of high-quality inclusive education as: a) high expectations for children; b) participation in learning and social activities with peers without disabilities; c) the use of evidence-based practices to foster learning and development; and d) the promotion of friendships and a sense of belonging.

In a break from most of the literature conceptualizing early childhood inclusion, Guralnick and Bruder (2016) conceptualized early childhood inclusion not by its defining features, but by its unique goals. The authors discussed inclusive education as education that promotes access to educational opportunities for all children, integrates accommodations to meet the needs of children with and without disabilities, supports children's developmental progress, and facilitates meaningful participation between children with and without disabilities (social integration). By focusing on the goals of inclusion, rather than specific characteristics, Guralnick

and Bruder's conceptualization effectively advances a view of inclusive education as an amalgamation of any practices, supports, and contexts that fulfill these goals. Although Guralnick and Bruder's (2016) inclusive education goals are not built on the three components of DEC and NAEYC's (2009) definition of inclusion (access, participation, supports), there is clear overlap. Thus, professional organizations, researchers, and policymakers have argued for a complex, and possibly fluid, definition of early childhood inclusive education that does not solely rely on a particular physical placement.

Definition of Inclusive Education within Empirical Research

While theoretical conceptualizations of inclusive education have focused on practice rather than placement, this same nuance has been inconsistently applied in research studying the enactment and outcomes of inclusive education. That is, the ways inclusive education has been operationalized in empirical research has varied. Odom and ECRII colleagues originally delineated "forms of inclusion" based on two dimensions –organizational context (i.e., the type of institution that classrooms are a part of) and service delivery model (i.e., the person or people primarily responsible for providing individualized services) (Odom et al., 1999). This two-factor conceptualization does not serve as a philosophical or theoretical definition of inclusion, but rather is an empirically-based representation of the ways it may be realistically enacted (Odom et al., 2011).

In contrast to ECRII's work, the physical presence of both children with and without disabilities has largely become the sole indicator of an inclusive classroom in research examining young children's outcomes in inclusive classrooms (e.g., Fisher & Meyer, 2002; Hardiman, Guerin, & Fitzsimons, 2009; Nahimas, Kase, & Mandell, 2014; Rafferty, Piscitelli, & Boettcher, 2003). For example, classrooms designated as inclusive in a study by Nahmias and colleagues

(2014) included reverse mainstreaming classrooms (i.e., classrooms lead by a special education teacher with a majority of the children having a disability label), Head Start classrooms, and community-based preschool settings. Although the three classrooms were collapsed under the "inclusive classroom" categorization, they represent three different models of inclusion, according to the categorization by Odom et al. (1999). In such research, there is often a lack of information about classroom context, instruction, and special education service delivery. When such information is given, there are extensive differences in the types of classrooms and practices that have been represented (Oh-Young & Filler, 2015). Therefore, it is difficult to comprehensively discern what specific practices and institutional processes contributed to the child outcomes that were reported. Researchers' operationalization of inclusion does not invalidate findings. However, the results give little information about *how* to implement high-quality inclusive education in ways that support all children's development.

In another line of research, multiple studies have been conducted that investigate children's outcomes based on their placement in different intervention programs that take place within classrooms that include children with and without disabilities (e.g., Boyd et al., 2014; Sainato, Morrison, Jung, Axe, & Nixon, 2015). These studies have examined classrooms that serve as comprehensive treatment models with specific supports, teaching strategies, and proportions of children with and without disabilities. Importantly, while these classrooms have children without identified disabilities in them, they operate with a focus on addressing the specific needs of children with disabilities, particularly children with autism spectrum disorder (ASD). In these studies, teaching practices and specialized services are heavily prescribed. While such intervention models are positioned as inclusive programs, whether classrooms primarily serving children with disabilities (i.e., "reverse mainstreaming" or "reverse inclusion"

classrooms) can be considered inclusive has been debated. In particular, several federal policy statements challenge the categorization of reverse mainstreaming classrooms as constituting a general early education classroom. The U.S. Department of Special Education and Rehabilitative Services published a "Dear Colleague" letter in 2012 that defined "regular early childhood programs" as those that have at least 50% children without identified disabilities for the purposes of annual Least Restrictive Environment (LRE) data collection (U.S. Department of Special Education and Rehabilitative Services, 2012). The previously discussed federal policy statement went even further to specifically recommend that states create policies to "ensure the principle of natural proportions guide the design of inclusive early childhood programs," meaning the proportion of children with and without disabilities in inclusive classrooms should reflect that of the general population (U.S. Department of Health and Human Services & U.S. Department of Education, 2015. P. 7). Most recently, yet another "Dear Colleague" letter was released that reiterated the previous definition of the "regular early childhood program" and listed specific placements that would fall under that category (U.S. Department of Education, 2017). In sum, most of the empirical literature looking at children's experiences and outcomes in inclusive classrooms has alternately reported little information on the classroom context and practices, or the classroom context and instructional practices have been diligently controlled as a method of intervention. Both strands of research have generally defined inclusion according to the physical presence of children with and without disabilities.

Defining inclusive education within early childhood contexts has proven to be a complex endeavor. While theoretical and policy-based definitions of early childhood inclusive education focus on practice and institutional processes, research looking at children's experiences and outcomes in settings that include children with and without disabilities has inconsistently taken

up such a definition. Thus, there is a need for research that more closely connects theoretical definitions of inclusive education to its practical enactment. The present dissertation addresses this need, in part, by examining how previously-identified contextual features of inclusive education influence children's classroom experiences.

Diversity in Classroom Features Across Early Childhood Settings

Moving from the perspective that inclusive education is a matter of practice and process, not place, it is necessary to separately consider the places, or contexts, inclusive education takes place within and how such context may influence its implementation. However, considering context within early childhood education and special education is complicated by the wide variety in program and classroom features. The rapid increase in early childhood education (ECE) programs has created a patchwork early education system with differences based on funding sources, attendance eligibility criteria, teaching and staffing patterns, and program standards, among other features (Guralnick & Bruder, 2016). Here, I discuss a few key features that have been shown to differ across ECE programs and that are particularly relevant to the implementation of inclusive education.

Organizational Context and Service Delivery Model

As previously mentioned, Odom and ERCII colleagues (1999) developed a categorization of inclusion models based on organizational context and service delivery model. The researchers identified six organizational contexts that characterize the type of institution classrooms are based within (e.g., community-based child care, Head Start, Public School Early Childhood Education). These were later collapsed into three categories: community-based programs, Head Start programs, and public school programs (Odom & Bailey, 2001). The organizations primarily differ by funding source (i.e., federal or local public funds vs. private funds), regulations, and the

families they primarily serve (i.e., Head Start programs are specifically for families with a low socioeconomic status). Another group of researchers proposed a fourth organizational context – blended programs. Blended programs are those that combine multiple resources or funds, such as Head Start, Title 1, special education, and state funding (Tsao, Odom, Buysse, Skinner, West, & Votztum-Komanecki, 2008). Additionally, the original ECRII researchers identified six models of individualized service provision that denote who assumes primary responsibility for planning, implementing, and monitoring activities for children with disabilities in the classroom on a day-to-day basis: itinerant teacher with direct child services or teacher consultation, team teaching, early childhood teacher model, early childhood special education (ECSE) teacher model, and integrative/inclusive activities (Odom et al., 1999).

I utilized organizational context and service delivery model categorization in the present study as one way to understand the various contexts of inclusive education that may influence its implementation. At least one study using the ECRII categorization has found differences in the ways children experience inclusive classrooms based on their organizational context and associated ecological features (Tsao et al., 2008). Understanding that inclusive practices may differ across settings introduces the need, and opportunity, to better understand the complex, bidirectional relationship between inclusive practices and inclusive contexts.

Teacher Qualifications and Instructional Support

Variability in the education and professional development of early childhood educators is a key challenge to the advancement of early childhood inclusive education (U.S. Department of Education & U.S. Department of Health and Human Services, 2015). In particular, teachers' educational background varies greatly by organizational context. For example, the most recent Head Start Family and Child Experiences Survey (FACES) study found that less than half of

Head Start teachers held a bachelor's degree and slightly more than half had training in early childhood education (Hulsey et al., 2011). Meanwhile, public school teachers are generally required to possess a bachelor's degree in ECE and/or early childhood special education (ECSE) and meet additional state licensure requirements (Saracho & Spodek, 2007). Saluja, Early, and Clifford (2002) similarly found stark differences in teacher educational attainment across early childhood programs when looking at public schools, private and non-profit community-based centers, and Head Start programs. The researchers found that public school teachers had the highest educational attainment while private community-based programs generally had the most variance in personnel requirements. In public school settings, research has found that approximately 81% of early childhood teachers in public school programs hold a bachelor's degree (Clifford et al., 2005). As state and national accountability measures have been implemented, the gap in teacher qualifications between public school and community-based teachers has likely increased (French, 2010).

However, whether teachers have a Bachelors' degree can be misleading as a measure of their preparation to implement inclusive practices. Early childhood licensure requirements vary greatly across states. The extent to which educator preparation program content reflects evidence-based inclusive practices and support needs for children with varying abilities and backgrounds is inconsistent (DEC, 2017; Pugach, Blanton, & Correa, 2011; Stayton, Smith, Dietrich, & Bruder, 2012). In a study of seventeen state certification standards (representing all five major certification models within ECE and ECSE), Stayton and colleagues found that only three states' teacher certification standards met or nearly met 100% of Council for Exceptional Children (CEC) standards for early childhood special educators. Thirteen states' policies met 52% or less of the CEC standards. Finally, three state certification policies did not include any

standards or competencies that referenced professional association standards (i.e., CEC or NAEYC standards) (Stayton et al., 2012). These numbers indicate great variability in teacher preparation for early educators that would potentially affect their ability to implement high-quality inclusive education.

Professional development and organizational support for teachers may also play a critical role in their ability to implement high-quality practices (Early et al., 2007) and have developmentally-supportive interactions with children (Bogard, Traylor, & Takanishi, 2008). For example, Vu, Jeon, and Howes (2008) found that teachers' educational attainment predicted classroom quality in private and nonprofit center-based classrooms (e.g., Head Start or community-based child care programs), but not in public school districts or state-sponsored preschool programs. These divergent effects may, in part, be due to the supports teachers receive in those settings and whether such support addresses their needs. There is evidence that teachers practicing in different contexts have different professional development and support needs. Head Start teachers (who would be categorized as operating under the ECE teacher service delivery model and Head Start organizational context) have expressed specific concerns about using adapted or specialized materials, integrating individualized education plan (IEP) goals into the curriculum, and working with children with more extensive communication and motor needs (Bruns & Mogharreban, 2008). Additionally, Head Start teachers have reported a significant need for instructional support professionals focused on implementing inclusive practices (Muccio, Kidd, White, & Burns, 2014). Meanwhile, early childhood educators in public school settings have reported a need for better consideration of classroom load (e.g., classroom size, teacher: child ratios, and the type and severity of children's needs) and reliable resource personnel (e.g., in-class, collaborative, and administrative support for instruction) (Leatherman

& Neimeyer, 2005; Smith & Smith, 2000). Thus, organizational structure and program expectations may contribute to teachers' unique professional development and instructional support needs.

In contrast to most Head Start and general education teachers, itinerant teachers are specifically trained in ECSE and typically have a focus on supporting the inclusion of children with disabilities in a variety of contexts (Dinnebell, McInemey, & Hale, 2006). Their support needs related to facilitating inclusive education are often tied to their unique role. Nelson, Lindeman, and Stroup-Rentier (2011) described great ambiguity and role-specific challenges in the itinerant service delivery models. Itinerant teachers reported that ECE programs and families expected them to primarily provide direct support to children despite consultation being a recommended practice, and a central component of their training. Regardless of their primary role in the classroom, itinerant teachers reported collaborative consultation as important, but one of their biggest challenges (Nelson et al., 2011).

In sum, both general early childhood educators and the most specialized professionals have reported training and instructional support challenges that affect their ability to implement inclusive education. Yet, these challenges largely align with differences in teachers' roles and context. More research is needed that investigates how variations in teacher qualifications and instructional support influence children's inclusive experiences. Such research would yield possible ways to better support teachers in role- and context-specific ways.

Classroom Make-Up

It is difficult to comprehensively characterize the children who attend early childhood education classrooms. However, it is important to consider the many ways programs may differ in regard to the primary children and families they serve. Perhaps the most expansive

investigation of the children and families served by public preschool classrooms found great diversity in the social, linguistic, and economic characteristics of children attending state-funded programs (Clifford et al., 2005). Importantly, that was due to significant differences in state policies around attendance eligibility criteria and the lack of a national universal preschool system. Some states reserve public preschool programs for children receiving special education services under the Individuals with Disabilities Education Act (IDEA) and children from families with a lower-socioeconomic status. The later eligibility criterion is reflected in the fact that a little more than half of children attending public preschool programs are from families with incomes equal to or less than 150% of the federal poverty guidelines (Clifford et al., 2005). Note that this investigation excluded Head Start classrooms, which specifically serve children from lower-income backgrounds. Thus, the actual percentage of children who attend publically-funded preschool (in either center-based or public school-based classrooms) who are from a lower-socioeconomic status family is likely higher.

When discussing the make-up of inclusive classrooms, another classroom feature that is unique to early childhood classrooms is variation in the ratio of children with and without disabilities. In addition to inclusive ECE classrooms that primarily serve children without disabilities, reverse inclusion (or reverse mainstreaming) classrooms have been developed in which approximately half or more of the children in the classroom receive special education services. The proportion of children with and without disabilities is not associated with any particular model within the categorization put forth by Odom and the ECRII researchers. However, reverse inclusion classrooms are typically led by an early childhood special education teacher (the ECSE Teacher service delivery model). Additionally, they typically have much smaller numbers of children and a lower teacher: child ratio compared to general ECE

classrooms. As previously mentioned, because such classrooms have both children with and without disabilities, they are routinely considered to be inclusive, though this is a point of controversy and continued federal and state intervention to promote natural proportions (U.S. Department of Health and Human Services and U.S. Department of Education, 2015).

Program Standards

One central way organizational context may influence inclusive education is through a program's funding and oversight agency. Public school-based early education programs are subject to state funding and academic standards, similar to K-12 education. Thus, these classrooms are often required to follow certain curriculum, assessments, or early learning standards that can vary by state and district. For example, in Kansas, publically-funded early education programs are required to follow the Kansas Early Learning Standards (KELS; Kansas State Department of Education [KSDE], 2013). Although the standards are not a curriculum, early educators in publically-funded programs are required to address them in their curriculum for all children. Further, districts may prescribe certain assessments that align with the standards, and may determine resources based on the standards (e.g., instructional pacing guides, guidelines for curriculum or classroom materials). KSDE describes their standards as a framework to guide curriculum, professional development, assessment decisions, information sharing between professionals and families, and program evaluation (KSDE, 2013). Regarding children with identified disabilities, the KELS guide specifically cites the standards as supporting "quality programming for ALL children" and advises that they should be used as "the starting point from which individual adaptations or modifications can be created to meet the special needs of any child (KSDE, 2013, pg. 8). While the guidelines are not specific to public school settings, they were developed by representatives from public school districts and publically-sponsored

programs (e.g., IDEA Part C services), and are intended to prepare children to be ready for the public school K-12 College and Career Ready Standards. Presumably, publically-funded programs are held more accountable to following such state-mandated standards because they are often tied to state accreditation. For example, schools pursuing continued accreditation in Kansas must show evidence of ongoing training for teachers in state assessments and curriculum standards (KSDE, 2018).

Head Start programs are considered publically-funded programs, but are rarely affiliated with a public school district and/or under the supervision of state departments of education. Instead, Head Start programs receive funding and oversight from the federal Office of Head Start, and are required to follow very specific federal guidelines dictating curricula, child and classroom assessments, family-professional partnerships, and environmental features. Head Start is specifically for children from low-income families, and classrooms are required to be open to children with disabilities. The Office of Head Start has extensive regulations for programs. For example, center-based Head Start programs must follow a certain staff: child ratio, have facilities approved, use certain classroom quality and child-level assessments (e.g., the Classroom Assessment Scoring System [CLASS] to assess teacher and program quality), and demonstrate family communication policies and practices that align with the Head Start Parent, Family, and Community Engagement Framework. Although the Office of Head Start does not dictate that programs use a certain curriculum, curricula must be scientifically-valid and align with the Head Start Early Learning Outcomes Framework (Administration for Children and Families Head Start Standards, 2016). Finally, the Office of Head Start provides some resources and professional development specifically supporting children with disabilities, including the Head Start Center for Inclusion and program-based disabilities services coordinators. Thus, Head Start

programs are heavily guided by the requirements put forth by their funding agency in ways that would influence teachers' practice, assessments, and the classroom experiences of children with disabilities.

Perhaps surprisingly, only four out of every ten children attend a publically-funded preschool program, including through Head Start programs and specialized ECSE services (U.S. Department of Education, 2015). Therefore, it is significant that community-based early education programs may be accredited by a variety of agencies who subsequently influence program standards and teaching practices. Alternately, such programs may choose to not pursue separate accreditation or oversight outside of state licensing requirements. Perhaps the most well-known and respected non-public accreditation source is that of the National Association for the Education of Young Children (NAEYC). Attaining NAEYC accreditation is an extensive process that requires programs to maintain ten standards that address teaching practices, curriculum, relationships between children and adults, family-professional collaboration, progress monitoring, the physical environment, and management. Early childhood programs are subject to an extensive review of their policies, instructional planning, and administration, and must also pass a site visit. Some standards are very specific. For example, programs are not allowed to have liquids and foods that are hotter than 110 degrees Fahrenheit in areas with children (NAEYC, 2018). Within the curriculum standard, programs must be able to show at least two examples of how they changed classroom materials as children's skill levels changed over time and must submit at least two weeks of annotated lesson plans (NAEYC, 2018). There are extensive differences between accrediting agencies that would influence the quality of the programs and children's experiences. For example, NAEYC specifically requires programs to use both comprehensive norm-referenced, standardized tests *and* informal, staff-developed

assessment methods, such as observation tools, checklists, and work samples. The former is to be used to determine children's eligibility for special services and to collect information on program effectiveness while the later are intended to support curriculum development and daily planning (NAEYC, 2018). In contrast, the National Early Childhood Program Accreditation (NECPA) standards simply state that programs should assess children's developmental progress in some way that monitors all developmental domains and aligns with curriculum goals (NECPA, 2018). In addition to assessment and oversight, these outside agencies also offer professional resources to affiliated programs. For example, NAEYC has staff who can provide technical assistance on a variety of topics and offers both in-person and online professional development. However, while engaging in such outside accreditation programs can benefit program quality and teachers' practice, it costs money to go through such processes and maintain accreditation. Thus, programs in primarily low-income communities may be less likely to have the financial resources to go through outside accreditation. Further, NAEYC only accredits school- and center-based programs –home-based preschool programs are ineligible for accreditation.

In contrast to the extensive standards required by these outside agencies, any early childhood program can be licensed to operate by achieving what are typically much less strict state requirements. For example, in Kansas, programs can be licensed as a child care and education program as long as they maintain certain staff: child ratios, have a program director and teachers with a minimal level of teaching experience or education, conduct background checks on all workers and volunteers, and pass an annual health and safety inspection. Further, the educational expectations of program directors and teachers depend on the number of children the program serves (Kansas Department of Health and Environment, 2018). There are no requirements for curriculum or progress monitoring. The large differences between what states

require to license early education programs and the optional accreditation program standards point to a source of substantial inequities in the quality and practices of early childhood programs.

In sum, there is great diversity in the standards with which early childhood education programs may align themselves. These differences greatly influence the organizational context of inclusive education because such standards and accreditation requirements determine a wide range of practices, instructional supports, and environmental features. The significant differences in standards and program requirements further highlights the need to examine potential differences in children's inclusive experiences based on the context inclusion takes place within. It is difficult to understand how early education programs may implement high-quality inclusive education without considering the other standards and regulations they must maintain.

Definitions of Quality in Early Childhood Education

High-quality inclusive education depends on children being included into already high-quality environments (U.S. Department of Health and Human Services & U.S. Department of Education, 2015). Yet, assessments of quality in early childhood education classrooms typically do not account for the presence of inclusive practices and supports specific to children with disabilities (Buysse & Hollingsworth, 2009; Odom et al., 2011). Further, the definition of high-quality inclusion does not replace other notions of early childhood education program quality. Rather, the two complement each other (Odom et al., 2011). Thus, there needs to be separate considerations of the quality of the environments children are included into and the quality of practices and structures that facilitate their inclusion. In this section, I explore current conceptualizations of global and inclusion quality to discuss the early childhood field's current understanding of high-quality inclusive education and areas where work is still needed.

Global Early Childhood Education Quality

Global quality within early childhood education has been defined and measured in several different ways. There are benefits and challenges to each of the ways global quality has been defined. Moreover, each conceptualization of global quality has implications for how ECE programs support global quality, and consequentially, the potential quality children with disabilities have access to within inclusive classrooms.

Theoretical Definition. Global quality has been broadly conceptualized as consisting of two dimensions: 1) process quality, which includes the quality of the curriculum and instruction, and the presence of supportive teacher-child interactions and 2) structural quality, which includes consideration of physical environment features, child: teacher ratios, and teacher qualifications (Buysse & Hollingsworth, 2009; Early et al., 2007; Odom et al., 2011). Scholars have argued that such a broad definition of quality is preferable to one based on a particular assessment or set of program standards because it allows individualization to children, families, and communities (Odom et al., 2011). Thus, a "high-quality" early education program contains evidence-based structures and processes, but incorporates practices that are responsive to the children and families being served. However, the process-structure conceptualization of quality has also been critiqued as being too researcher-centered, meaning these dimensions have been determined based on the observations and perspectives of researchers, and not those of children, families, and early childhood educators (Fenech, 2011). Further, due to its expansiveness, translating this conceptual definition of global quality to improved practice can be a nebulous task.

Global Quality Assessments. Global quality has also been defined according to certain well-established assessment tools such as the Classroom Assessment Scoring System (CLASS) and Early Childhood Environment Rating Scale –Revised (ECERS-R). Such assessment-based

definitions of quality have been used widely for early education program accountability and quality improvement (Pianta, Downer, & Hamre, 2016). These assessments often mix process and structural elements within and across assessment domains. For example, the CLASS has three domains of classroom quality: emotional support, classroom organization, and instructional support (Downer, Booren, Lima, Luckner, & Pianta, 2010). Each domain includes three to four dimensions that may include both process and structural indicators to consider when scoring. For example, the Classroom Organization domain includes three dimensions: behavior management (which has process- and structure-oriented items), productivity (which only has process-oriented items), and instructional learning formats (which has both process- and structure-oriented items). Similarly, some of the ECERS-R's seven subscales only address structural elements of quality while others include both structural and process elements. For example, the Space and Furnishings subscale considers only structural elements, but the Language-Reasoning subscale includes both structural considerations (e.g., the physical presence of books and pictures) and process-oriented elements (e.g., the extent to which staff encourage children to communicate).

There are several challenges with defining ECE global quality based on the continued use of a particular assessment. First, the purpose of an evaluation can greatly influence how assessment results are interpreted and reported. That is, whether an assessment is being conducted for research, instructional support, or accountability reporting may determine whether assessors base decisions and report on: aggregate factor scores (e.g., the Instructional Support domain within the CLASS), specific subscale or dimension scores (e.g., the Concept Development dimension in the CLASS or the Language-Reasoning subscale within the ECERS-R), or individual items (e.g., the amount of books and pictures in a classroom). Researchers typically report total or dimension scores (e.g., Bassok, Fitzpatrick, Greenberg, & Loeb, 2016;

Coley, Votruba-Drzal, Collins, & Cook, 2016; Dennis & O'Connor, 2013; Pelatti, Dynia, Logan, Justice, & Kaderavek, 2016), but individual assessment items have been utilized in state preschool evaluations to determine financial appropriation (Bryant, 2010). Variations in the level at which quality is measured makes it difficult to determine what constitutes a high-quality classroom. Does a "high-quality" preschool classroom or program have to score highly on a certain percentage of items, on all or most assessment subscales, or on all or most conceptual domains? The answer to that question may depend on who is conducting the assessment and the purposes of the evaluation.

There is also some concern that overreliance on a certain tool to define and assess program quality may have unintended consequences that actually hurt efforts to improve ECE quality. For example, while the ECERS-R has played a major role in the implementation of regulations and investments that support early childhood education, the relationship between programs' ECERS-R scores and child outcomes has changed over time. Pianta and colleagues (2016) observed that, as ECE program quality has become ubiquitous with ECERS scores, in particular, variation in ECERS-R scores has decreased, and correlations between ECERS scores and child outcomes has weakened over time. Thus, overreliance on the ECERS-R to determine programs' quality seems to have possibly created a ceiling effect, making it more difficult to identify and intervene on quality issues within programs.

Quality Rating Improvement Systems (QRIS). The third major way global quality has been conceptualized in the early childhood education field is according to state-specific quality rating improvement systems (QRISs) and similar standards-based frameworks, such as those associated with the aforementioned accreditation standards (e.g., the NAEYC Program Standards and Accreditation Criteria) (Odom et al., 2011; Pianta et al., 2016). That is, a "high-quality"

program is one that is rated highly on a list of state- or agency-established quality indicators. QRISs have been developed at both the local and state level to assess quality in early education programs in ways that allow for accountability, targeted technical assistance, and consumer information. Most QRISs rate programs according to a plethora of quality indicators that are then combined into a composite score. Such scores are often attached to accountability and incentive programs (e.g., the Race to the Top Early Learning Challenge Grants), or improvement plans (Pianta et al., 2016).

There are several challenges to using QRIS systems to evaluate and intervene on global quality within ECE programs. First, it is often optional for a program to use a certain QRIS, as is the case for the Kansas state-developed QRIS, and the specificity and rigor of such systems vary widely (Kirby, Caronongan, Malone, & Boller, 2015). Additionally, the use of a QRIS is assumed to be associated with improved outcomes for children, but little research has documented that relationship. In fact, some evidence suggests that the rating scores themselves are not associated with child learning outcomes (Hong et al., 2015; Sabol & Pianta, 2015). Finally, QRISs are difficult to use as a measure of quality due to the large number of quality indicators used, arbitrary cut points, and methods for aggregating scores (Pianta et al., 2016). While QRISs have facilitated large investments in early childhood quality improvement, a more targeted approach focusing on specific research-based aspects of quality, such as teacher-child interactions, may be more promising (Clements & Sarama, 2011; Pianta et al., 2016).

Quality of Inclusion

Theoretical Definition. Quality of inclusion is different from the global quality of an ECE program, and still a fairly new concept. As such, little work has been conducted around theoretically defining inclusion quality separate from definitions of inclusive education.

Inclusion quality may be broadly defined as the quality of program and classroom features specifically necessary to provide individualized services and supports that facilitate access to the general education curriculum, participation and relationships with peers and adults, and a sense of belonging (Odom et al., 2011; Schwartz et al., 2002).

Inclusion Quality Assessments. Because traditional measures of ECE quality do not typically include measures of practices or supports specific to children with disabilities, separate measures are needed (Odom et al., 2011). Multiple measures and checklists of inclusion quality have been developed, though few have been subject to rigorous validity and reliability testing. For example, the Quality Inclusive Experiences Measure (QIEM; Wolery, Pauca, Brashers, & Grant, 2000) provides a comprehensive, individualized assessment of inclusion quality using observation, staff interviews, and document reviews. The measure includes seven subscales addressing classroom features, such as individualization, physical environment accessibility, participation, and engagement. While promising, the QIEM has not been adequately validated (Lero, 2010; Odom et al., 2011). Other tools that have been utilized as a measure of inclusion quality have largely been self-assessments intended to support professional development and program improvement. For example, *The Administrator's Guide to Preschool Inclusion* (Wolery & Odom, 2000) and *The Preschool Inclusion Toolbox* (Barton & Smith, 2015b) both contain self-assessment inclusion quality checklists. The Early Childhood Technical Assistance Center (ECTA) has also published the Local District Preschool Inclusion Self-Assessment (Cate, Dell, & Whaley, 2018). While not validated measures, such checklists are intended to measure the key features of high-quality inclusion and guide practice.

The most recently developed inclusion quality measure, the Inclusive Classroom Profile (ICP; Soukakou, 2016), assesses specific aspects of classroom environment and practice

necessary for addressing the developmental needs of children with disabilities. The ICP is conceptually based on DEC and NAEYC's (2009) definition of inclusive education. The measure uses a format similar to that of the ECERS-R. It consists of 11 subscales reflecting essential inclusive practices such as adaptations of space and materials, adaptation of group activities, facilitating peer interactions, and progress monitoring. A set of detailed quality indicators accompanies each item. Although the ICP is still a relatively new measure, initial validation studies are promising (Soukakou, 2012; Soukakou, Winton, West, Sideris, & Rucker, 2014). It is important to note that the ICP, like other measures of inclusion quality, only assesses classroom features and practices unique to the education of young children with disabilities –it does not include global quality indicators or assessments in accordance with the field's previously discussed conceptualizations of global quality. Thus, the ICP and other inclusion quality measures do not encompass a complete measure of inclusive education quality and should be used in conjunction with global quality measures (Odom et al., 2011).

Stakeholder Perspectives. In addition to formal classroom assessments, researchers have investigated what practitioners and families prioritize as features that impact the quality of inclusive education children experience. These studies provide stakeholder perspectives on the key features of high-quality inclusive education in ways that have typically not been utilized in the literature on global ECE quality. For example, Barton and Smith (2015a) issued a national survey to early childhood special education administrators. Respondents named a number of barriers to implementing high-quality inclusive education and possible solutions to overcome those challenges. Solutions included promoting positive attitudes and beliefs about inclusive education, fiscal policies that support access to high-quality public and private settings (that is, global quality), the redistribution of staff and resources, and co-teaching and other personnel

improvements. Hurley and Horn (2010) used a unique methodology to have families and professionals rank and describe priorities for implementing inclusive education. Priorities included personnel ensuring children's active participation in classroom activities and routines, the provision of individualized accommodations and adaptations, and collaboration amongst families, teachers, and other professionals. Importantly, the second most valued feature of inclusive education was that children are included into an otherwise high-quality program. The ranking further indicates the importance of differentiating high-quality inclusive education as dependent on, but separate from, global classroom quality. These less conventional methods represent stakeholder priorities for high-quality inclusive education and go beyond defining inclusive education to name specific practices that are important for its effective implementation.

In sum, "quality" is a complex concept in inclusive early childhood education that does not have a singular definition or conceptualization. Defining what constitutes high-quality inclusive education demands considering both global quality (what children are included into) and the quality of inclusion or inclusive practices they are experiencing. Global quality, specifically, has been defined in multiple ways, some of which are unique to certain assessment tools, purposes, and contexts. Meanwhile, inclusion quality has a much shorter history, perhaps in part, because of the field's tendency to define inclusion according to physical placement. Global quality and inclusion quality has seldom been combined in a systematic way. Instead, they have been individually conceptualized and measured. A dual consideration of global and inclusion quality would allow a more complete picture of inclusive education and a better understanding of the key features that constitute *high-quality* inclusive education.

Statement of the Problem

In order to continue increasing children's access to high-quality inclusive education, an implementation science framework has been recommended (Barton & Smith, 2015a; Odom et al., 2011). Such a framework necessitates establishing the ideal key features of early childhood inclusive education and systematically determining how practitioners may adapt those features based on context. The goal of implementation science is to help "scale up," or increase the use of, evidence-based practices while maintaining their efficacy (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Odom, 2009; Odom et al., 2011). As such, an implementation science framework (focused on key features and systematic, efficacious adjustments) would help achieve two important goals. First, taking an implementation science approach to investigating and implementing inclusive education would help the field continue to move away from inclusive education being conceptualized as a singular, uniform physical placement. Secondly, an implementation science approach would support practitioners' ability to implement high-quality inclusive education using context-specific supports and resources.

However, based on the topics discussed in this chapter, there are still several challenges to using an implementation science framework to advance high-quality inclusive education. Namely, while key features of inclusive education have been identified (e.g., Barton & Smith, 2015a; DEC & NAEYC, 2009; Hurley & Horn, 2010; Odom et al., 2011), early childhood inclusive education is inconsistently studied based on the presence of those features rather than a single physical placement that has children with and without disabilities. Further, little is known about how those features may need to be adapted or supported in different ways based on the many contextual differences across early childhood settings. Gupta and Rous (2016) recently observed that early childhood education research has largely focused on implementation fidelity, rather than understanding how additional factors influence the adaption, use, and efficacy of

practices or interventions. Something similar could be said of research on inclusive education. It has often focused on children with and without disabilities being in the same classroom, rather than understanding the contextual factors that influence the quality of children's experiences once they're there. Finally, the definition and measurement of global and inclusion quality have evolved independently of each other with largely unexplored implications for how they dually constitute inclusive education quality. It is currently difficult to differentiate inclusive education and *high-quality* inclusive education.

Together, these challenges point to a need for research that investigates the practical implementation of inclusive education in contextualized and multifaceted ways. Such inquiry would provide a better understanding of how inclusive education can be differentially implemented across multiple types of early childhood contexts while maintaining the quality of key features. Understanding how inclusive education could be best implemented within different contexts would subsequently support the intentions of implementation science –to increase use while maintaining efficacy –and potentially address the challenges practitioners and families have called attention to.

In the present study, I sought to add to what is currently known about the influence of context on the implementation of inclusive education. The study used DEC and NAEYC's (2009) conceptual definition of early childhood inclusive education, Odom and colleagues' categorization of inclusion models, and a concurrent assessment of global and inclusion quality to address the challenges of previous research. The purpose of this research was not to compare early childhood contexts in order to judge one as being of a higher quality. Instead, the study aimed to provide insight into how inclusive practices and supports may differ across inclusive settings due to context-specific processes, institutional supports, and practical considerations.

Ultimately, this information could contribute to efforts to support inclusive education in context-specific, yet high-quality, ways across all early childhood settings. The study probed the following research questions:

1. How do features of the organizational context influence the global quality of inclusive classrooms?
2. How do features of the organizational context influence the quality of children's inclusion?
3. How do features of the service delivery model influence the quality of children's inclusion?
4. How do features of the service delivery model influence the individualized learning experiences of children with disabilities in inclusive classrooms?

In subsequent chapters, I review relevant literature discussing what is known about the relationship between inclusive education context and quality (Chapter 2), outline my research methodology (Chapter 3), present findings (Chapter 4), and discuss implications for future research and practice (Chapter 5).

Chapter 2: Literature Review

Inclusive education in early childhood settings has previously been investigated in a variety of ways, with scholars generally addressing ways to define inclusive education, the prevalence of early childhood inclusion, children's outcomes in inclusive classrooms, and key inclusive practices or supports (Odom, Buysse, & Soukakou, 2011). The focus of the present study was to add to the current knowledge about inclusive education by examining the influence of contextual features on its implementation. In particular, the potential relationship between context, classroom quality, and children's individual experiences was explored. The focus of this review is to discuss literature that is closely relevant to the specific purposes of the present study. A more selected and concept-oriented review was conducted due to the vast nature of research on inclusive education, and the multiple intersecting areas of research that the present study builds upon. Relevance was prioritized over a comprehensive examination of a single strand of early childhood inclusive education research in preparation for the conceptualization, implementation, and interpretation of the study (Maxwell, 2006). The present chapter reviews literature according to three core questions:

1. What are the key features of high-quality inclusive early childhood classrooms most often discussed in the literature?
2. How has the quality of inclusive classrooms been studied?
3. What has been proposed as the potential influences of contextual features on the quality of inclusive early childhood education classrooms?

As suggested by these core questions, literature was considered relevant if it spoke to the ways the early childhood education (ECE)/early childhood special education (ECSE) field understands what inclusive education is, the relationship between global ECE quality and high-

quality inclusion, and the contextual features that may influence inclusive education. Furthermore, the perspectives of multiple stakeholders were interwoven throughout, including practitioners and families. This review was limited to early childhood literature because of the unique context and circumstances of ECE, as noted in Chapter One. Additionally, because a secondary goal of the present study was to advance the ways inclusive education is researched, particular attention was paid to the methods used by researchers to investigate inclusive practices and the settings in which the research was conducted.

Key Features of High-Quality Inclusive Education –Access, Participation, Supports

Efforts to identify the essential features of high-quality early childhood inclusive education has often been addressed concurrently with attempts to define inclusive education. That is, inclusive education may be defined according to the practices that should be present. The DEC and NAEYC (2009) joint position statement on early childhood inclusive education illustrates this approach, and has become a cornerstone resource for both how the field defines inclusion and some of the key features that should be present. According to the position statement, a common understanding of what inclusive education means is important for "determining the practices and supports necessary to achieve high quality inclusion" (DEC/NAEYC, 2009, p. 1). Following this purpose, DEC and NAEYC identified three core components –access, participation, and supports –and several key practices that exemplify them. Other literature has similarly aligned itself with this definition of inclusive education as scholars have attempted to identify its key practices and promote the expansion of inclusion (e.g., Barton & Smith, 2015a; Buysse, 2011; U.S. Department of Health and Human Services & U.S. Department of Education, 2015). These three components serve as anchors in reviewing practices and structures that have consistently been identified in the literature as facilitating high-

quality inclusive education. Given the focus of the present study on organizational context and service delivery models, the institutional *supports* component is given particular focus.

Access

DEC and NAEYC (2009) defined *access* as the provision of a wide range of learning opportunities, activities, settings, and environments. Importantly, the professional organizations listed the contexts inclusion could occur within while discussing access to learning opportunities. It could be surmised that such a consideration of organizational and community contexts while discussing access indicates that physical placement alone does not guarantee or deny access to learning opportunities. Instead, the instructional practices and specialized processes within such contexts promote access. Access, and as an extension, inclusive education, is not defined by the setting within which it takes place, but rather the practices that ensure children's learning opportunities. Key practices that support access include the use of universal design (to direct the removal of physical and structural barriers that impede environmental access), universal design for learning (to provide multiple formats for learning), and the use of technology (DEC/NAEYC, 2009).

The practices that DEC and NAEYC (2009) named as facilitating access to learning opportunities are generally supported by research. For example, a UDL framework has been successfully used to make curricular modifications and adaptations that addresses children's individual needs (e.g., Horn & Banerjee, 2009; Odom et al., 2010). The use of technology within early childhood classrooms is still controversial and inconsistent (Parette, Quesenberry, & Blum, 2010). However, assistive technology can be central to helping children with more extensive needs maneuver the classroom and communicate (Ragonesi, Chen, Agrawal, & Galloway, 2010; Trembath, Balandin, Togher, & Stancliffe, 2009). Additionally, there is some evidence that

technology supports children's skills when used in structured ways, particularly language and literacy skills. For example, Moody, Justice, and Cabell (2010) compared children's engagement and communication when they were read storybooks by an adult or electronically (with some adult facilitation). Children showed greater persistence during the e-book, but produced more communicative initiations during the adult-led storybook condition. Notably, the e-book also changed the adult's behavior –teachers made more labelling references during the adult-led condition. The importance of continued, effective adult facilitation when technology is being used within inclusive classrooms is consistent across the literature and especially imperative for children with disabilities or other special needs (Aronin & Floyd, 2013; Bus, Takacs, & Kegel, 2015; Flewitt, Messer, & Kucirkova, 2015; Segal-Drori, Korat, Shamir, & Klein, 2010).

Participation

DEC and NAEYC (2009) defined *participation* as children's ability to engage, play, and learn with their peers with and without disabilities as well as adults. The inclusion of participation as a core principle of inclusive education closely aligns with other definitions of inclusive education that prioritize children's sense of belonging, classroom membership, and engagement with peers (e.g., Hurley & Horn, 2010; Odom et al., 2011; Schwartz, Sandall, Odom, Horn, & Beckman, 2002). In particular, Hurley and Horn (2010) found that both parents and practitioners highly value practices that support children's participation in the classroom. In their study, participants ranked characteristics of inclusive education that they saw as the most important priorities to achieve high-quality inclusive education. The most valued characteristic of inclusive settings, for both parents and professionals, was that program personnel ensure that children with disabilities are active participants in all classroom routines and activities.

Although DEC and NAEYC's (2009) definition of participation includes interaction with adults as well as peers, some scholars have focused on children's interaction with peers, specifically, as a key feature of inclusive education. For example, Guralnick and Bruder (2016) named 'social integration' as a primary goal of inclusion. The authors conceptualize social integration as meaningful participation between children with and without disabilities, and assert that inclusive educators should endeavor to ensure such opportunities and friendships. Similarly, Fyssa, Vlachou, and Avramidis (2014) assert that engagement in classroom activities is "the first and foremost requirement of inclusive education" (p. 224). The researchers defined engagement as the degree to which children with disabilities interact appropriately with peers, adults, and learning materials, but particularly focus on social experiences with peers. Indeed, the development of meaningful friendships between children with and without disabilities remains a pressing area where targeted support is often needed within inclusive classrooms (Meyer & Ostrosky, 2014).

Key practices that facilitate participation include tiered models of support, embedded and routines-based instruction, and explicit interventions (DEC/NAEYC, 2009). Further, DEC and NAEYC assert that supporting social-emotional development and other behaviors that facilitate participation should be a particular focus of teachers' practice. There is significant evidence that embedded and routines-based interventions can be used to effectively support children's progress towards individualized learning goals (Grisham-Brown, Pretti-Frontczak, Hawkins, & Winchell, 2009; Horn, Lieber, Li, Sandall, & Schwartz, 2000; Rakap & Parklak-Rakap, 2011) as well as general skills and academic achievement (Botts, Losardo, Tillery, & Werts, 2014; Davenport & Johnston, 2015; Goldstein et al., 2016; Hansen, Wadsworth, Roberts, & Poole, 2014) within inclusive classrooms. Embedded instruction is also generally recommended as an intentional and

strategic instructional practice to facilitate learning for children with disabilities (DEC, 2014). Embedded instruction and other naturalistic instruction approaches are broadly defined by four common features: instruction takes place within typically-occurring activities, routines, and experiences; instruction content matches the demands of the activity and child in order to facilitate his/her participation; each intentional and systematic teaching episode is child-initiated or initiated based on the child's focus of attention or interest; and a natural or logically planned consequence follows the child's response (Rule, Losardo, Dinnebeil, Kaiser, & Rowland, 1998; Snyder et al., 2011). A review of research investigating embedded instruction concluded that children who learn skills through embedded instruction are typically able to generalize these skills across people, setting, activities, and materials, and are also able to maintain newly-acquired skills over time (Rakap & Parlak-Rakap, 2011). However, generalization may vary across the range of naturalistic instruction procedures that teachers may implement (Snyder et al., 2015).

Research supporting the use of tiered models of support, such as the Pyramid model (which targets children's social-emotional development) and response to intervention (RTI) is still emerging, but promising (e.g., Gettinger & Stoiber, 2012; Greenwood et al., 2012; Hemmeter, Snyder, Fox, & Algina, 2016). Response to intervention (RTI) is a systematic decision-making process that uses data to determine children's needs and guide instruction to prevent and address learning and behavioral challenges (Fox, Carta, Strain, Dunlap, & Hemmeter, 2010). RTI is comprised of several key features that have each been shown to effectively improve children's developmental outcomes, including universal screening, continuous progress monitoring, the use of a range of evidence-based interventions, data-based decision-making and problem-solving, and intervention fidelity (Fox et al., 2010). The use of

progress monitoring and data-based differentiated instruction within this framework are considered particularly essential for children with and at-risk for disabilities within inclusive classrooms. For example, Gettinger and Stoiber (2012) conducted a study investigating a tiered literacy intervention for young children enrolled in Head Start classrooms. The researchers found that children in classrooms that utilized curriculum-based progress monitoring to guide differentiated instruction improved their literacy skills (i.e., alphabet knowledge, vocabulary knowledge, book recognition, book comprehension) more than their peers in classrooms that did not.

In addition to those named by the DEC and NAEYC (2009) position statement, Buysse (2011) named other specific practices that may be important for practitioners aiming to improve children's participation in inclusive classrooms. She highlighted intentional scaffolding strategies such as modeling, response prompting, and corrective feedback. While these strategies themselves may not be considered essential features of inclusive education, there is significant evidence that they are particularly effective practices to support children's learning and participation within inclusive classrooms. For example, the use of intentional scaffolding strategies is a key mediator in the relationship between early childhood education quality and children's outcomes (Burchinal, 2018). Thus, the presence of scaffolding strategies, in particular, may be considered a contributor to global ECE quality, and as an extension, high-quality inclusive education (wherein, high-quality inclusive education is defined as high-quality global ECE plus high-quality inclusive practices). Buysse (2011) also named peer supports as a key strategy to support participation. Peer-mediated interventions have significant research support as a strategy to help children with disabilities learn social skills and increase interactions with peers (e.g., Nelson, McDonnell, Johnston, Crompton, & Nelson, 2007; Robertson, Green, Alper,

Schloss, & Kohler, 2003; Terpstra & Tamura, 2008). However, these interventions are typically focused on teaching typically-developing peers to help a child with a disability learn new skills (Neitzel, 2008). In addition to using peers to support the learning of children with disabilities, researchers have emphasized the need for practitioners to use a variety of methods to support friendship development and a sense of belonging for children with disabilities in inclusive classrooms. This focus aligns with a definition of participation that prioritizes children's social engagement with peers and membership within the classroom (Guralnick & Bruder, 2016; Meyer & Ostrosky, 2014). Practices that have been shown to support friendship development between children with and without disabilities include observing children to assess their friendships and friendship opportunities, explicitly teaching friendship strategies such as initiating and responding to social interactions, and using environmental arrangements that necessitate peer interactions (Brown, Odom, & Conroy, 2001; Banko & Buysse, 2002; Meyer & Ostrosky, 2014).

Supports

The DEC and NAEYC (2009) position statement defined *supports* as the infrastructure of systems-level activities that undergird individuals and organizations. The key features that constitute such supports include ongoing professional development, collaboration, coordinated specialized services and therapies, adequate funding policies, and the use of appropriate quality frameworks (e.g., program quality standards, early learning standards and guidelines, professional competencies) (Buyesse, Skinner, & Grant, 2001; Buysse & Hollingsworth, 2009; DEC/NAEYC, 2009; Odom et al., 2011). Other researchers have also acknowledged the central role administrators play in providing the necessary supports that facilitate teachers' effective use of inclusive practices (Barton & Smith, 2015b; Gupta & Rous, 2016; Odom et al., 2004).

The supports component appropriately encompasses the program-wide structures that support both global quality and inclusion quality (DEC/NAEYC, 2009; Odom et al., 2011). Research supports this consideration of program structures that support global quality in efforts to facilitate high-quality inclusive education for children with disabilities. In particular, multiple studies have found that the global quality of early education programs impact the development of children with disabilities (Phillips & Meloy, 2012; Weiland, 2016). Practitioners and parents also recognize the unique contributions of global program quality for children with disabilities. Hurley and Horn (2010) surveyed practitioners and parents to understand their priorities for inclusive education. The researchers found that the second most valued characteristic of inclusive early childhood settings was that children are included into an already high-quality early childhood program. Similarly, Buysse et al. (2001) found that parents and practitioners named program features indicative of global quality as contributing to inclusive education quality. Program features that support global quality included the presence of qualified teaching staff, developmentally-appropriate practices, parent participation and support, well-designed facilities and classroom environment, and staff: child ratios (Buysse et al., 2001). Thus, it could be concluded that one essential feature of high-quality inclusion is that the program children are included into is characterized by the program-wide systems, structures, and processes that are indicative of general high-quality early education. The global quality features identified by Buysse and colleagues (2001) have since been confirmed by more recent studies of global quality in early childhood education programs (e.g., Bigras et al., 2010; Hestenes et al., 2015). For the purpose of synthesizing the literature, I will individually discuss the key institutional supports that facilitate high-quality inclusion, directly, as well as supports that broadly facilitate global quality.

Developmentally-Appropriate Practices. The use of developmentally-appropriate practice (DAP) has been a long-time standard for early childhood education (Bredekamp, 1987, Copple & Bredekamp, 2009; Wolery & Hemmeter, 2011). However, it has also evolved over time. After NAEYC released their initial position and guidance on DAP (Bredekamp, 1987), some critiqued it as over-emphasizing child-initiated activities at the expense of intentional instruction and high expectations (e.g., Kessler, 1991). Scholars also debated its utility for young children with disabilities (e.g., Carta, Schwartz, Atwater, & McConnell, 1991). In response, NAEYC revised their position on DAP, emphasizing the need for challenging curriculum and a balance between adult-initiated and child-initiated learning activities (Bredekamp, 1997). Most recently, NAEYC and DEC have both situated DAP within the context of classrooms that serve children with a variety of needs. NAEYC's (2009) position statement on DAP affirmed that early childhood teachers should make classroom experiences accessible and responsive to all children, ensure children with disabilities received appropriate intervention, and consult appropriate specialists to implement necessary adaptations. In DEC's most recent revision of recommended practices, they similarly acknowledged that developmentally-appropriate practices are important for all children and advised that recommended practices for children with disabilities should build on DAP (DEC, 2014). The use of DAP and DEC recommended practices is often cited as a first step before more intensive interventions for children with specific needs are implemented within inclusive settings (Brown, Odom, & Conroy, 2001; Fox et al., 2010; Greenwod et al., 2011; Hemmeter, Fox, Jack, & Broyles, 2007).

Family-Professional Partnerships. Similarly, family-professional partnerships have consistently been cited as an essential component of effective early childhood education and inclusive education (e.g., Buysse et al., 2001; Guralnick & Bruder, 2016). For example, Cross,

Traub, Hutter-Pishgahi, & Shelton (2004) interviewed and observed early childhood educators and specialists who supported the "successful" inclusion of children with significant disabilities in community-based settings. The researchers also interviewed some of the children's parents. Positive family-professional partnerships emerged as one of four consistent elements present across the research sites and participants. The researchers described families as active partners who provided important information about their children's abilities, medical and health-related needs, and day-to-day changes. Ongoing interpersonal communication and mutual respect was viewed as critical meeting the children's needs. Further, parents described themselves as having a shared responsibility for the inclusion of their child (Cross et al., 2004). This study is unique in its explicit focus on children with more significant needs. Finally, the centrality of family-professional partnership to inclusive education is further seen by the development of inclusion-focused professional development that centers on such collaboration. The Partnerships in Early Education: Relationships with Supports (PEERS) professional development model, for example, supports teachers' use of inclusive practices by emphasizing collaboration between parents and child care professionals. Parents both contribute to and attend the professional development sessions. Both parents and child care providers have viewed the training positively and reported that it contributed to improve child experiences (Cummings, Sills-Busio, Barker, & Dobbins, 2015).

Educator preparation and professional development. While some research has found that more educated teachers have higher quality classrooms (e.g., Mims, Scott-Little, Lower, Cassidy, & Hestenes, 2008; Pelatti, Dynia, Logan, Justice, & Kaderavek, 2016), these results have not been consistent (e.g., Early et al., 2006; Lin & Magnuson, 2018). These divergent findings may be due to contextual features of the programs within which teachers work (Vu,

Jeon, & Howes, 2008) or variations in the content of teachers' preparation programs (Bogard, Traylor, & Takanishi, 2008; Pugach, Blanton, & Correa, 2011; Stayton, Smith, Dietrich, & Bruder, 2012). For these reasons, in-service professional development has emerged as a key institutional support to contribute to practitioners' knowledge and skills related to inclusive education (e.g., Barton & Smith, 2015a; Bogard et al., 2008; Saracho & Spodek, 2007). For example, Barton and Smith (2015a) conducted a survey of administrators in a variety of state and local roles (e.g., district special education preschool coordinators, state IDEA/619 coordinators) to identify recommendations to continue advancing high-quality preschool inclusion. Many solutions to the challenges respondents identified targeted the provision of additional professional development. Professional development (PD) solutions included joint professional development for ECE, ECSE, and community providers; PD related to collaboration among practitioners; PD for child care programs that specifically contain content regarding the inclusion of children with disabilities; and PD that is followed by ongoing coaching. Other research similarly supports the use of PD paired with coaching where practitioners are able to receive feedback (e.g., Snyder, Hemmeter, & McLaughlin, 2011; Snyder et al., 2012).

In-service professional development may be particularly important for teachers in Head Start and community-based canters because these teachers have the greatest variance in their formal preparation, in general, and specifically, in practices for children with special needs. For example, Muccio and colleagues found that professional development was the greatest barrier to successful inclusion in Head Start classrooms (Muccio, Kidd, White, & Burns, 2013). The researchers observed nine Head Start classrooms using the Inclusive Classroom Profile (ICP) and surveyed teachers to understand their views on the availability of supports for successful

inclusion. Muccio and colleagues found that the professional development item had the greatest difference between the teacher-rated necessity and availability.

The National Professional Development Center on Inclusion (NPDCI) emphasized the importance of professional development that promotes generally effective teaching as a key component of program and inclusion quality (Buysse and Hollingsworth, 2009). The NPDCI developed a framework that conceptualizes professional development for inclusion as that which addresses: considerations of specific characteristics of learners and providers in the setting (*who*); content that reflects program quality standards, practices, and measures (*what*); and experientially-oriented learning opportunities that explicitly encompasses program quality *and* quality inclusion (*how*). While the NPDCI framework represents movement towards a common definition of professional development for inclusion, there is a dearth of research that identifies the "active ingredients" of effective professional development or that experimentally investigates its impact on child outcomes (Snyder et al., 2011).

Still, various PD packages and approaches have been shown to be effective at improving teachers' use of inclusive practices and positive attitudes towards inclusion (e.g., Baker- Ericzén, Mueggenborg, & Shea, 2009; Hemmeter et al., 2016). Some key components may include presentation of theory as well as curriculum-specific content and goals, modeling, practice with feedback, and coaching within teachers' specific context (Cummings et al., 2015; Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Hemmeter, Snyder, Kinder, & Artman, 2011; Means, Padilla, DeBarger, & Bakia, 2009; Sheridan, Edwards, Marvin, & Knoche, 2009; Snyder et al., 2011). Coaching, in particular, has been linked to increased child outcomes when it is characterized by specific content instruction, modeling of techniques and instructional practices, observation, and consultation that facilitates reflection (Shidler, 2009; Snyder, Hemmeter, &

Fox, 2015). These professional development practices have been effective for promoting the use of a variety of key inclusive practices, such as progress monitoring data collection, behavioral supports, and family-professional partnerships. Professional development should also be ongoing. For example, Baker- Ericzén and colleagues found that teachers' attitude towards inclusion and perceived competence made the biggest improvements after three sessions of inclusion-oriented PD (Baker- Ericzén et al., 2009).

Professional collaboration. Significant literature has identified professional collaboration as a cornerstone of inclusive education (Leatherman, 2007; Lieber et al., 2002; Purcell, Horn & Palmer, 2007) and a characteristic that that both practitioners and families value (Buysse et al., 2001; Hurley & Horn, 2010). First, collaboration may be key to early education programs initiating inclusive models of early childhood education. Purcell and colleagues (2007) investigated factors that contributed to the establishment and continuation of inclusive models of early education in five preschool programs. The authors found that special education staff had to establish collaborative partnerships with multiple individuals and organizations in order to begin inclusive service provision. Additionally, opportunities to collaborate with other teachers and service providers provided motivation and helped teachers problem solve once inclusive services began. Interestingly, the authors also found that collaboration played a unique role for Head Start programs. Head Start teachers reported collaborating with ECSE teachers in order to complete the extensive regulatory paperwork necessary for each of the programs (Head Start and special education). Unfortunately, maintaining ongoing collaboration was also cited as a challenge to continuing inclusive models of early education. This was particularly true in community-based programs with high staff-turnover and fewer well-trained staff members (Hurley & Horn, 2010).

Collaboration may also be a key feature that influences children's outcomes in inclusive classrooms. Throneburg and colleagues contrasted self-contained services, place-based mainstreaming (children in a general early childhood education classroom with no teacher-service provider collaboration), and inclusive service provision with teacher-service provider collaboration (Throneburg, Calvert, Sturm, Paramboukas, & Paul, 2000). Students who received services using a collaborative inclusive model made significantly greater language gains compared to those who received services in the non-collaborative or pull-out models. Children's language outcomes in the non-collaborative model and pull-out model did not differ. Swenson (2000) replicated these findings in a case study, finding that the student made significantly greater language gains when he received speech services in a teacher-therapist collaboration model compared to a pull-out model. Schooling, Venediktov, and Leech (2010) drew similar conclusions in their systematic review of the effects of service delivery on young children's language skills. Although the authors noted the small number of studies empirically investigating the effects of collaborative service delivery, they concluded that research favored classroom-based and collaborative models over individual pull-out services. In addition to directly supporting targeted skills, collaborative service delivery may indirectly improve children's outcomes by improving teachers' knowledge of effective strategies, increasing their fidelity of intervention implementation, and providing an avenue for effective coaching (Dinnebeil, Pretti-Frontczak, & McInerney, 2009).

It is important to note that co-teaching or team teaching classroom models require collaboration between classroom teachers in addition to collaboration with service providers and families. As a result, collaboration needs may look different for those teachers as they must collaborate for lesson planning and implementation throughout the day. As Friend and

colleagues (2011) observed, co-teaching (defined as the partnering of a general education teacher and a special education teacher) is a unique and complex collaborative relationship. The two practitioners must jointly deliver instruction in various configurations while attempting to integrate specialized instruction within a general education setting (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2011). Further, co-teaching practitioners are charged with constantly merging two areas of expertise that may differ in terms of curricular priorities and competencies, pacing, and classroom management (Friend et al., 2011). Little research has been conducted on co-teaching in early childhood specifically. However, researchers generally agree that effective co-teaching is characterized by shared decision-making, mutual respect, continuing efforts to communicate, dedicated collaborative planning time, and shared assessment responsibilities (Friend et al., 2011; Shim, Hestenes, & Cassidy, 2004; Sileo, 2011). Additionally, there is evidence that teaching teams should be supported with professional development that specifically targets the skills and knowledge necessary to co-teach (Scruggs, Mastropieri, & McDuffie, 2007).

Together, the literature indicates the importance of professional collaboration, particularly teacher-service provider collaboration, as a part of high-quality inclusive education. However, note that this work has primarily focused on speech-language services and behavioral consultation (Dinnebeil et al., 2009) –less is known about collaboration between teachers and other related service providers. For example, multiple studies have found that teachers and occupational therapists value collaboration (Barnes & Turner, 2001; Bose & Hinojosa, 2008), yet little research that has studied the impact of teacher-occupational therapist collaboration on children's outcomes within classroom-based settings (Kennedy & Stewart, 2011).

Administrative supports. Various supports from administrators and program leaders play a central and unique role in inclusive education (Gupta & Rous, 2016; Leatherman, 2007). One role administrators play is supporting teachers' positive attitudes towards inclusive education. Leatherman (2007) interviewed early childhood educators about their perceptions of inclusion and the factors that contributed to teachers' attitudes and self-efficacy. She found that having administrators who prioritize the inclusion of children with disabilities and provide necessary supports for practitioners was important for teachers' positive views of inclusion and feelings of self-efficacy. Further, teachers named administrators as being responsible for positioning inclusion as a core philosophy of the program. The importance of administrators in prioritizing inclusion and shaping positive attitudes towards inclusive education has been a consistent focus of the literature (e.g., Barton & Smith, 2015a; Gupta & Rous, 2016; Purcell et al., 2007). For example, in the survey conducted by Barton and Smith (2015a), the most common challenge for inclusion that respondents named was negative attitudes and beliefs. Many of the solutions to this specific barrier implicated the role of administrators in promoting inclusion. Solutions included educating local administrators about the benefits of inclusion; providing opportunities for administrators to discuss inclusion concerns and benefits with practitioners and families; and providing targeted professional development opportunities related to content as well as practitioner collaboration.

In addition to facilitating positive attitudes towards inclusive education, administrators play a key role in providing structural supports that facilitate teachers' use of inclusive practices. In this regard, Leatherman (2007) found that teachers valued administrators providing observation and feedback to teachers, and advocating for teacher needs. Gupta and Rous (2016) similarly argued that program leaders are central to facilitating practitioner collaboration and

service coordination, and providing activities that encourage professional learning. Multiple studies have reported that administrative support is correlated with teachers' use of new instructional strategies and evidence-based practices (e.g., Ruble, McGrew, Wong, & Missall, 2018; Ruble, Usher, & McGrew, 2011). Ruble and colleagues (2018) used a survey to assess the factors that contribute to early childhood special education teachers' data collection attitudes and use. The researchers found that administrative support for data collection correlated positively with teachers' intentions to collect data, feelings of self-efficacy towards data collection, and actual data collection behavior. Administrative support features included administrators promoting data collection as important and providing teachers with training, teachers having flexibility to be creative, the presence of adequate classroom staffing, and the provision of adequate planning time. Given the significance of data collection within inclusive classrooms, the role of administrators in promoting that practice is important. Finally, as a result of their survey findings, Barton and Smith (2015a) recommended that administrators create specific organizational supports that facilitate sustained, effective practice (e.g., work groups), and develop and support the use of data systems to monitor practice.

Quality frameworks. The use of quality frameworks, or quality rating and improvement systems (QRISs), have often been cited as essential for high-quality inclusive education (Buysse & Hollingsworth, 2009; Odom et al., 2011). Quality frameworks typically assess programs on a variety of quality indicators that are determined at the state- or agency- level, and facilitate resource allocation and improvement initiatives (Pianta, Downer, & Hamre, 2016). However, the evidence supporting their contributions to children's outcomes within inclusive settings is inconsistent (Pianta et al., 2016). Several studies have found little correlation between classroom quality ratings when using a QRIS system and children's outcomes (e.g., Hong, Howes,

Marcella, Zucker, & Huang, 2015; Sabol, Hong, Pianta, & Burchinal, 2013; Sabol & Pianta, 2015). Meanwhile, other state-wide analyses have found select associations between QRIS ratings and classroom quality. For example, in their study of North Carolina's QRIS system, Hestenes and colleagues found that children's externalizing problems were predicted by classroom QRIS ratings (Hestenes et al., 2015). Researchers have argued that this mismatch between perceived importance and actual contributions to children's outcomes is due to the large number of items that are often assessed, arbitrarily-chosen cut-points, and the methods used to aggregate indicators (Pianta et al., 2016). Importantly, QRIS frameworks generally address global quality indicators and not inclusion quality or the practices that may be uniquely necessary for children with disabilities (Buysse & Hollingsworth, 2009; Odom et al., 2011). However, they still hold promise in the larger effort to improve early education quality (Odom et al., 2011; U.S. Department of Health and Human Services & U.S. Department of Education, 2015).

Summary and Implications

In sum, the DEC and NAEYC (2009) conceptualization of inclusive education as consisting of three key components–*access* to diverse learning opportunities, *participation* with peers and adults, and institutional *supports* –remains a useful way to categorize the key features of inclusive education, including the classroom practices and program structures that have most consistently been associated with positive outcomes for children with disabilities in inclusive classrooms. Key strategies to support children's access within inclusive classrooms include the use of universal design and universal design for learning frameworks as well as the use of technology. Key practices to support children's participation include tiered models of support, embedded and routines-based instruction, explicit interventions, and intentional teaching.

Finally, institutional supports that facilitate inclusive education include the use of DAP, family-professional partnerships, teacher training and professional development, professional collaboration, administrative supports, and the use of quality frameworks.

There are a few important considerations in light of this literature base. First, much of this research has not systematically accounted for the influence of context (e.g., organizational program type, service delivery model). Yet, when context is considered, some differences have emerged regarding *how* these key features operate to support inclusion (Purcell et al., 2007), and the needs of practitioners (Barton & Smith, 2015a; Purcell et al., 2007). Additionally, with few exceptions (e.g., Buysse et al., 2001; Hurley & Horn, 2010), these studies have generally not engaged in discussions of quality other than concluding that children with disabilities should be included into otherwise high-quality programs. Thus, while the literature supports these features as being important for inclusive education, how they contribute to inclusive education quality and possible variance in their implementation across research sites is unknown. Put another way, context-based variations in both the presence of these characteristics and how they are implemented may influence quality. Investigating that possibility is a key purpose of the present study.

Investigating Inclusion Quality in Early Childhood Classrooms

Chapter One offered an in-depth overview of how quality has been conceptualized in early childhood inclusive classrooms. As previously discussed, the present study intentionally defined and measured inclusive education quality as consisting of both global quality and high-quality inclusion. The focus of this review will be on inclusion quality as that is specific to classrooms that include children with disabilities.

Inclusion quality has generally been conceptualized as the presence of evidence-based practices specific to children with disabilities, the presence of individualized accommodations and modifications, evidence of children's membership in the classroom, professional collaboration, and program philosophies and policies that support inclusive education –many of the features that have been considered to be central to inclusive education (e.g., DEC/NAEYC, 2009; Schwartz et al., 2002; Soukakou, 2016). There have been three widely acknowledged assessments of inclusion quality in preschool classrooms –the Quality of Inclusive Experiences Measure (QIEM or QuIEM; Wolery, Pauca, Brashers, & Grant, 2000), SpeciaLink Child Care Inclusion Practices Profile and Principles Scale (Irwin, 2005), and Inclusive Classroom Profile (ICP; Soukakou, 2016). To date, the Inclusive Classroom Profile (ICP) is the only measure that has been adequately validated (Odom et al., 2011). Table 1 reviews the major features of each of these three assessments. In addition to structured assessments that are intended to be comprehensive measures of inclusion quality, multiple practice-oriented checklists and self-assessments have been developed and disseminated through resource guides (e.g., Barton & Smith, 2015b; Wolery & Odom, 2000).

The absence of a validated measure of inclusion quality, until recently, has limited discussions of quality within inclusive classrooms (Odom et al., 2011; Soukakou, 2016). However, existing inclusion quality tools and practice-oriented literature illustrate an additional way to examine the key features of high-quality inclusive education, and provide some direction for future research. Issues regarding the measurement of inclusion quality are central to understanding future directions for research investigating high-quality inclusive education.

Table 1.

Inclusion Quality Assessments

Assessment	Level of Assessment	Administration	Domains/Scales	General Item Content
Quality of Inclusive Experiences Measure (QIEM) (Wolery et al., 2000)	Individual Child	Observation – Classroom & Interval Time Sampling Staff Questionnaires Teacher Interviews	1. Program Goals & Purposes 2. Staff Supports & Perceptions 3. Physical Environment Accessibility 4. Individualization 5. Children's Participation & Engagement 6. Adult-Child Relationships 7. Child-Child Interactions	Incorporation of inclusive ideals into school philosophy Staff understanding of inclusion Teacher training Planning time Specialist input Family communication Individualization of curriculum Allocation of staff responsibilities Generalization of objectives Appropriateness of physical environment Adult assistance to students Support for independent participation Peer interactions
SpeciaLink Child Care Inclusion Practices Profile and Principles Scale (Irwin, 2005)	Program	Observation Staff Interviews	Practices Profile	Physical environment Equipment and materials Staff support Staff training Therapies Individual program plans Parent participation Involvement of typical children School transition supports
			Principles Scale	Zero reject Naturally occurring proportions Same hours of attendance Full participation Maximum feasible parent participation

Inclusive Classroom Profile (ICP) (Soukakou, 2016)	Classroom	Observations Teacher Interviews Document Review	1. Adaptations of space, materials, and Equipment 2. Adult involvement in peer interactions 3. Adult Guidance of Free-Choice Activities and Play 4. Conflict Resolution 5. Membership 6. Adult-Child Relationships 7. Communication Support 8. Adaptations of Group Activities 9. Transitions 10. Feedback 11. Family-Professional Partnerships 12. Monitoring Children's Learning	Pro-active strategies for high-quality Space and material accessibility Adult monitoring for support needs Adult strategies to encourage social interactions Cooperative play opportunities Individualized scaffolding strategies Support for problem solving Clear rules and behavior expectations Representation of diversity Adults promote belonging Sustained, reciprocal social interactions Responsivity to child interests Oral language strategies Group activity participation Differentiation Process-oriented feedback Verbal and nonverbal feedback Bidirectional family-professional communication Staff share assessments Progress monitoring informs individualization Team meetings to discuss child progress

Global and Inclusion Quality –Points of Convergence and Divergence

The delineation between global and inclusion quality is supported by previous conceptualizations of high-quality inclusive education (e.g., Buysse et al., 2001; Buysse & Hollingsworth, 2009; Odom et al., 2011) as well as empirical studies of key features in inclusive early childhood education programs (e.g., Buysse et al., 2001; Hurley & Horn, 2010). However, studies that contributed to the validation of the ICP were the only ones found that have used both a measure of global and inclusion quality (Soukakou, 2012; Soukakou, Winton, West, Sideris, & Rucker, 2014). The ICP validation studies provide further evidence that global and inclusion quality measures assess similar, but not identical, constructs. These studies also provide a unique opportunity to examine the relationship between global and inclusion quality based on how they are assessed.

Both Soukakou (2012) and Soukakou et al., (2014) assessed classrooms using the ICP and the Early Childhood Environmental Rating Scale –Revised (ECERS-R), the widely used global quality measure that the ICP is structurally based on. Both studies found that the two measures showed moderately high correlation when composite scores were compared as well as when certain ECERS-R subscales were compared with the ICP total score. Importantly, correlation was highest for subscales that measured similar classroom features. In both studies, the ECERS-R subscales, *Space and furnishings* and *Language and reasoning,* showed the highest correlation with the ICP. They are similar to the ICP items, *Adaptation of space, materials and equipment* (accessibility of the physical environment) and *Support for communication* (support for oral and receptive language). Additionally, the *Adult interactions*, and *Parent and staff interactions* ECERS-R subscales showed moderate correlation with classrooms' ICP total score. These subscales closely align with the ICP items, *Adult-child*

relationships (positive, responsive interactions between classroom adults and children), and *Family-professional partnerships* (bidirectional communication with families regarding children's education and progress). The inclusion of these similar items on both the ICP and the ECERS-R indicate that they may be specific domains where global and inclusion quality overlap.

The ECERS-R scales that displayed the smallest correlations with the ICP total score, and the ICP items that are not reflected in the ECERS-R subscales provide some insight into the key classroom features unique to inclusion quality. For example, the *Activities* ECERS-R subscale was poorly correlated with the ICP in both studies. However, while the ECERS-R *Activities* subscale primarily measures the developmental appropriateness of provided activities, ICP items related to classroom activities evaluate the presence of necessary adaptations to activities. Further, activities-related elements are spread across multiple ICP items, including *Adult guidance of free-choice activities and play*, *Adaptations of group activities*, and *Transitions between activities*. These differences indicate that, while global and inclusion quality may both require developmentally-appropriate activities, inclusion quality is necessarily, and uniquely, focused on the quality of activity adaptations and how adults intentionally facilitate children's participation in activities when a child has additional needs.

Finally, there are multiple ICP items that are not reflected in the ECERS-R – *Adult involvement in peer interactions, Conflict resolution*, *Membership*, *Feedback*, and *Monitoring of children's learning*. The first three items are reflective of high-quality inclusion centering on children's belonging in the classroom and engagement with peers, a point that has been emphasized in other literature (e.g., Guralnick & Bruder, 2016; Meyer & Ostrosky, 2014; Schwartz et al., 2002). *Feedback* reflects the central need for inclusive teachers of children with disabilities to provide systematic instruction that addresses individual goals (e.g., Buysse, 2011;

DEC, 2014; Rule et al., 1998; Snyder et al., 2011). Meanwhile, *Monitoring of children's learning* denotes the importance of progress monitoring that continuously evaluates the effectiveness of intervention (DEC, 2014; VanDerHeyden, Snyder, Broussard, & Ramsdell, 2008; Fox et al., 2010).

The ways global and inclusion quality assessments do and do not converge provide valuable insight into the similarities and differences between these two constructs. Comparing these assessments also indicates the importance of considering both global and inclusion quality when examining quality within inclusive classrooms. To some extent, they reflect different practices and priorities in the provision of high-quality early education. Given the unique and recent history of evaluating inclusion quality, I will now focus on how that construct has been assessed and the implications for research.

Comparing Measures of Inclusion Quality

Key inclusion features. Although QIEM, SpeciaLink Scale, and ICP differ in many ways, their contents facilitate a common understanding of how to assess inclusion quality. The assessments measure many similar features, including attitudes towards inclusion, program or administrative supports for teachers, physical environment accessibility, parent participation, the presence of individualization, children's classroom participation, peer interactions, and supportive adult-child interactions. These commonalities closely align with the key features of inclusive education previously reviewed. Thus, the inclusion assessments that have been developed further signify that such features contribute to high-quality inclusive education. Additionally, the three assessments indicate the importance of using multiple methods to assess inclusion quality. While all three evaluations prioritize observation, they also require teacher interviews and documentation review.

Level of assessment. The three inclusion quality assessments each focus on a slightly different "level" of assessment. The QIEM is completed for individual children, the ICP measures classroom-level practices, and the SpeciaLink Scale is primarily intended for program-wide evaluation and use. This divergence possibly speaks to a conflict at the core of understanding inclusive education. High-quality inclusion is understood to be a necessarily-individualized process (e.g., Schwartz et al., 2002), yet it is dependent on the classroom environment (what children are included into, teachers' general practices) (e.g., DEC/NAEYC, 2009; Hurley & Horn, 2010; U.S. Department of Health and Human Services & U.S. Department of Education, 2015), and program-level coordination and supports (Buysse & Hollingsworth, 2009; DEC/NAEYC, 2009). Consequently, it can be difficult to capture the complexities of a such a dynamic and multifaceted concept.

Unlike the QIEM, both the SpecialLink and the ICP are intended to be conducted for all children with disabilities in a classroom or program. In this way, they are similar to most global quality assessments, including the CLASS and the ECERS-R. In general, research investigating quality within inclusive classrooms has been conducted based on the assumption that all children experience a classroom's quality equally –both its global quality and inclusion quality (e.g., Bassok, Fitzpatrick, Greenberg, & Loeb, 2016; Coley, Votruba-Drzal, Collins, & Cook, 2016; Dennis & O'Conner, 2013; Pelatti et al., 2016; Soukakou et al., 2012; Soukakou et al., 2014). That is, if a classroom is of a high-quality, all children have equal access to those features of quality; likewise, if a classroom is of a low quality, all children are equally experiencing a low-quality early education. However, as Hurley and Horn (2010) pointed out, children with disabilities may experience varying levels of participation (and thus, varying levels of inclusion quality, and potentially, different outcomes) due to the use of "pull-out" service provision as

opposed to classroom-based intervention. Children with disabilities who are pulled out of the classroom fairly frequently may not have as much access to the classroom's global quality features. Although the ICP considers the use of pull-out services when evaluating inclusion quality, this judgement is based on a general assessment of the classroom's practices, not individual children's experiences. Children could be pulled out of the classroom at different rates, but the ICP requires a judgement of average pull-out time. Not all quality assessments are classroom-level assessments. The QIEM (Wolery et al., 2000) and the more recently developed Individualized Classroom Assessment Scoring System (inCLASS; Downer, Booren, Lima, Luckner, & Pianta, 2010) are completed for individual children. However, the quality assessments that are validated and most commonly used in research (e.g., the CLASS, ECERS-R, ICP) assess quality according to the general practices used in the classroom, regardless of individual children's needs and services.

This is not to say that classroom-level assessment of quality is invalid or even that assessments of individual children's experiences are required to judge whether a classroom is of a high quality. Instead, this analysis is to suggest that children may experience the quality of the classroom differently, but current tools generally do not allow researchers to investigate that. Understanding the individual experiences of children in inclusive classrooms can add nuance to an understanding of the classroom's quality. That nuance is especially important when we consider that inclusive education has historically been defined as a necessarily individualized process (Schwartz et al., 2002). The present study addresses this limitation, in part, by investigating inclusive education quality at both the classroom and child level. That is, in addition to classroom-level measures of quality, an individualized observation tool was used to understand individual child experiences with their environment. While the observation tool used

was not explicitly a measure of quality, the variables observed consisted of evidence-based practices known to support a high-quality language and academic environment. Additionally, the study included both children with and without disabilities as focus participants for the child-level observations. This allowed for analyses to investigate whether children with and without disabilities were experiencing global quality features similarly.

Considerations of classroom context. One way the SpecialLink Scale differs from the other two assessments is that it was developed specifically for child care centers. Both the ICP and QIEM were developed to be context-neutral. That is, they are intended for use within a variety of program and classroom types. While this universality helps them be widely-accessible, it also means that they do not consider the possible influences of context on inclusive practices, resources, or policies. This is potentially a limitation of only using structured assessments to evaluate quality. Such assessments may miss the unique needs of practitioners within different types of programs or practitioners who take on different service delivery roles. For example, qualitative (Mihai & Butera, 2017) and context-specific (Bruns & Mogharreban, 2008; Muccio et al., 2014) research has revealed the possibility that Head Start teachers may require additional or different types of professional development to facilitate the inclusion of children with disabilities. The present study incorporated teacher and administrator interviews to supplement systematic quality assessments and account for the possibility of context-specific facilitators and needs regarding high-quality inclusive education.

Context of measurement development. The three assessments are also clearly a product of the time and place they were developed within. The SpeciaLink Scale is the only assessment that was developed outside of the United States and it differs the most from the other assessments, especially its Principles Scale. However, this may reflect the national context it was

created within. Additionally, some of the features it evaluates that the other assessments do not are a part of the Individuals with Disabilities Education Act (IDEA) (e.g., zero reject, the provision of related therapies, the development of individualized education plans). The QIEM and ICP may not evaluate these features because it is assumed that programs abide by the law. Chronologically, the ICP is also unique in that it is the only measure that was created after the DEC and NAEYC (2009) statement on inclusive education. The author explicitly references that statement as informing the conceptual framework for the ICP (Soukakou, 2016). This may have contributed to some of its items not being included in the other assessments, including monitoring of children's learning. In that way, as knowledge about inclusive education has evolved over time, assessments have been based on slightly different frameworks and priorities. Potentially, as the field continues to learn more about high-quality inclusion, new assessments or assessment revisions may be required.

The QIEM, SpeciaLink, and ICP are valuable tools that support some consensus on the key features of high-quality inclusive education. However, they also illustrate many of the challenges of measuring inclusion quality in light of the multifaceted ecology of early childhood education and the continuously evolving definition of inclusion. Differential consideration of child, classroom, and program needs; issues of context; and the ongoing changes in how inclusion is defined can make it difficult to capture a truly comprehensive understanding of inclusion quality. The present study attempted to address some of these challenges through the use of multiple methods and both classroom- and child-focused observations.

Practice-Oriented Checklists –Measuring Quality to Support Implementation

Because a validated measurement of inclusion quality is still relatively new, it has arguably not been used to support practice much. Instead, multiple practice-orientated books and

resources have provided checklists or self-assessments that are meant to help practitioners improve the quality of inclusive services they provide. These resources indicate areas of emphasis in translating inclusive education research to high-quality practice.

Most recently, *The Preschool Inclusion Toolbox* (Barton & Smith, 2015b) was published with multiple checklists and forms to guide practitioners. The interactive components of the book promoted the development of program policies and procedures that support inclusion, reflection on instructional practices and program supports, and the development of action steps. Perhaps most notably, Barton and Smith (2015b) included a series of four forms that were based on the barriers to inclusive education discovered in their survey (Barton & Smith, 2015a). The forms help practitioners reflect on whether certain attitudes, beliefs, and resource needs identified in the survey are present in their program (e.g., communication or collaboration challenges, belief that "someone will lose", understanding of inclusion, staff preparedness). Next, the forms provide possible solutions to these challenges, also based on survey responses, and facilitate practitioners' ability to try those solutions and track progress. A significant portion of the book focuses on building positive attitudes and beliefs about inclusion, developing policies and procedures that support inclusive education, and implementing administrative supports (e.g., practice-based coaching). The book's layout reflects the authors' survey finding that attitudes and beliefs about inclusive education are now the biggest barrier to its implementation, followed by program policies related to resource allocation (Barton & Smith, 2015a). Thus, it could be surmised that high-quality inclusion depends on teachers, administrators, and staff valuing and prioritizing inclusive education.

Similar to Barton and Smith's (2015b) focus on administrative supports, Wolery & Odom (2000) wrote *The Administrator's Guide to Inclusion* based on research from the Early

Childhood Research Institute on Inclusion (ECRII). In it, the authors separately discuss global quality features ("Quality Indicators for All Preschool Programs") and quality features specific to the inclusion of children with disabilities ("Quality Indicators for Inclusive Preschool Programs"). Thus, the guide clearly emphasizes that high-quality inclusive education is defined by global quality *and* inclusion quality. Wolery and Odom (2000) also provide a checklist for administrators to evaluate the quality of their inclusive preschool program. Components include: a program philosophy that supports inclusive education; adequate space, equipment, and materials; staff management and training; individualizing curriculum and instruction; staff planning and implementation; and staff monitoring and evaluation.

Finally, in line with the use of quality frameworks, the Early Childhood Technical Assistance Center and the Center for IDEA Early Childhood Data Systems, recently released a self-assessment structured like many QRISs, called the Local District Preschool Inclusion Self-Assessment (Cate, Dell, & Whaley, 2018). The two centers based the self-assessment on the U.S. Department of Health and Human Services and Department of Education policy statement on early childhood inclusion. There are eight components with several items each. Practitioners rate themselves on each item using a scale of 1 (not yet) to 4 (fully implemented). The components include: partnering with families, adhering to legal provisions of supports and services, assessing and improving the quality of inclusion, reviewing and modifying resource allocation, professional development, establishing appropriate staffing structures and collaboration, ensuring access to specialized supports, and developing formal collaboration with community partners. The self-assessment is intended to be completed as a program team. The team rates themselves on each item, records evidence ("What does it look like?"), and identifies next steps or priorities. The team completion of this tool reflects the importance of collaboration to facilitate high-

quality inclusion, both within programs and across community partners (Hurley & Horn, 2010; Leatherman, 2007; Lieber et al., 2002). The developers even characterize the tool as a "framework for discussion to promote partnerships among schools and early care and education providers" (Cate et al., 2018).

All of these practice-oriented tools reflect the key features of inclusive education that were previously discussed. However, in line with their focus on translating research and policy to practice, they privilege program and administrator supports (e.g., fiscal and instructional resources, professional development), practitioner reflection, and the development of actionable next steps. Based on these practice-oriented guides, practitioner reflection, self-assessment, and action planning could be considered additional markers of high-quality inclusive programs. Each of the practice-oriented guides identify such reflective practices as central to improving the quality of inclusive programs.

Note that this discussion of practice-oriented resources is far from exhaustive. Multiple resources have been released that support practitioner knowledge regarding individual aspects of high-quality inclusive education, such as instruction and curriculum adaptation (Grisham-Brown, Hemmeter, & Pretti-Frontczak, 2017; Horn, Palmer, Butera, & Lieber, 2016). Additionally, multiple states have released their own self-evaluation tools, including Pennsylvania and New Hampshire. These selected practice-based tools simply reflect attempts to comprehensively scaffold multiple aspects of inclusive practice.

Summary and Implications

Looking at the ways inclusion quality has been measured and supported in practice provides an additional way to examine high-quality inclusive education. The shared items between the three inclusion quality assessments closely align with the key features of high-

quality inclusion, including an emphasis on positive attitudes towards inclusion, program and administrative supports, physical environment accessibility, parent participation, the presence of individualization, children's classroom participation, peer interactions, and supportive adult-child interactions. Additionally, the three assessments all denote the importance of using multiple methods to understand how inclusion is being implemented. However, their differences also reveal some of the challenges of measuring inclusion quality. Namely, it is difficult to simultaneously represent the individual, classroom, and program features of inclusive education. Additionally, although it is easy to consider such structured assessments to be "objective," they are clearly an object of the time and place that were developed within. Practice-oriented guides supplement more structured assessments by emphasizing the importance of administrative and program supports, practitioner self-reflection, and action-oriented planning. Examining both validated and non-validated evaluations of inclusive practices provides a unique perspective on the implementation of high-quality inclusive education.

It is evident that research addressing issues of quality within inclusive classrooms is still emerging (Odom et al., 2011). "Low-quality" inclusive education could be defined as classrooms that score poorly on inclusion quality assessments or that do not possess a majority of the known features of high-quality inclusive education. However, is a classroom still a "low-quality" inclusive classroom if it also scores highly on global quality assessments? Evidence that the global quality of ECE classrooms impacts children with disabilities might contradict such an assumption (Odom & Bailey, 2001; Phillips & Meloy, 2012; Weiland, 2016). Yet, the relationship between global and inclusion quality has not been extensively explored in order to delineate how they individually and jointly contribute to high-quality inclusive education and individual children's experiences.

To guide future research, Odom and colleagues (2011) named three research directions to continue investigating quality within inclusive settings: 1) reconciling definitions of quality with the need for individualization, 2) continuing the development and validation of inclusion quality assessments, and 3) situating efforts to support high-quality inclusion within the broader movement to improve ECE quality. The present study attempts to build on these three points and the previous work on high-quality inclusive education. First, I simultaneously assessed classroom-level quality and observed children's individual classroom experiences. Additionally, the study used the most recently-developed and validated inclusion quality assessment (ICP) in addition to a measure of global quality, the CLASS. Finally, the study's primary purpose was grounded in investigating inclusive education in light of the variance across early childhood contexts. Examining inclusive education in these ways allowed a nuanced, contextualized investigation.

Potential Influences of Contextual Features on Quality

Little research has systematically investigated the influence of contextual features on classroom global and inclusion quality. However, there is some evidence that different types of early childhood settings differ in inclusive education quality. The available research on this topic is discussed in the following sections using the inclusion forms categorization delineated by Odom and colleagues (1999) –organizational context and service delivery model. First, evidence of differences in quality across organizational contexts (or, program type) is addressed, followed by review of research investigating differences in quality across service delivery models.

Differences in Quality Across Organizational Contexts

Organizational context reflects the type of program within which a classroom is housed (Odom et al., 1999). Previous research has shown differences in global quality across different

types of preschool programs. For example, public school and Head Start programs have been found to have a higher global quality than private center-based programs (Coley et al., 2016; Greenwood et al., 2012; Li-Grining & Coley, 2006). Research has also found that public school and Head Start classrooms have more features that would predict quality, such as teachers with a higher level of education, and the use of more structured curriculum (Clifford et al., 2005). These findings may be due to the regulations that govern public school and Head Start programs. Note that these studies have used measures of global ECE quality, such as the CLASS and ECERS-R, not measures of inclusive education quality. The results of these studies indicate that children with disabilities may be included into settings with differential levels of global quality based on the organizational context of their classroom, which could consequently affect the quality of their inclusive experiences.

Program type may also influence intervention efforts. Greenwood and colleagues (2012) assessed the effects of RTI-based literacy instruction on children's language and literacy skills over the course of one academic year at four types of preschool programs –State Pre-K, public school Title 1, Head Start, and tuition-based. The researchers reported multiple program type differences. Head Start programs had the highest CLASS scores. However, when the researchers used a child-focused observation tool (CIRCLE), focus children in Head Start programs had the lowest amount of teacher talk with a literacy focus. Additionally, children with the greatest needs (Tier 3) in Head Start classrooms made the smallest progress from the Fall to Spring. These results present a conundrum that illustrates the possible effect of differential regulations (an organizational context feature) on inclusive education quality. Head Start programs generally use the CLASS to report program quality and provide teacher feedback, which may explain why the classrooms had such high scores. However, that regulation may inadvertently narrow the focus

of instructional support to those explicitly measured by the CLASS. As a result, the practices associated with inclusion quality –in this case, differentiation using RTI principles and individualization –may not be supported enough. The results also illustrate a challenge of using classroom-based measures of quality to generalize the experience of individual children. While Head Start classrooms had high CLASS scores, individual children were not uniformly receiving high-quality literacy interactions, as measured by the CIRCLE.

One study was found that reported differences in inclusion quality based on program type. Soukakou et al. (2014) found that child care programs had significantly lower ICP (inclusion quality) scores compared to public school preschool, Head Start, and developmental delay (reverse mainstreaming) classrooms. After this initial finding, the researchers tested possible explanations using a series of control variables. However, the significant difference between child care ICP scores and the other programs remained even when controlling for teacher education, ECERS-R scores, special education course hours, and the number of children with an IEP. However, this finding has not been universal. Vlachou and Fyssa (2016) evaluated 52 preschools in Greece using the ICP. The researchers specifically investigated correlations between program context, quality, and teacher characteristics, but did not find any significant associations.

Other research offers some evidence that the classroom and program features that differ by organizational context may impact the quality of children's inclusive experiences. For example, children's positive interactions with adults differed across four organizational contexts studied by Tsao, Odom, Buysse, Skinner, West, & Vitztum-Komanecki (2010) (i.e., community-based, Head Start, public school, blended programs). Blended programs were not included in Odom et al.'s (1999) original inclusion model taxonomy, but the authors described them as

public school classrooms that included children with disabilities as well as typically-developing peers with Title 1, Head Start, or state preschool funding. The authors found that children with disabilities in blended programs had significantly more positive interactions with adults than children in other programs. Positive adult-child interaction is an inclusion quality item measured by the ICP, although the authors did not use that assessment. The researchers' finding may, in part, be due to the different teacher: child ratios present in the different program types. Tsao and colleagues (2010) did not find differences in positive peer interactions across the contexts. This was the only study found that has investigated the impact of the inclusion model dimensions (i.e., organizational context, service delivery model) on children's inclusive experiences. However, Tsao and colleagues primarily examined children's behavior, not the quality of their experience, explicitly.

Influence of Service Delivery Model on Quality

Service delivery model reflects the primary way in which children with disabilities receive individualized instruction and services within inclusive settings (Odom et al., 1999). Because the service delivery model predominantly, if not solely, affects children with disabilities, it could be assumed that it is only related to inclusion quality, not global quality. Meaning, whether a child with a disability is primarily served by a co-teaching team or an itinerant ECSE teacher would not necessarily have an independent effect on the global quality of the classroom processes or structures for all children. Instead, the service delivery model would solely effect the quality of inclusive practices and experiences of children receiving special education services. However, at least one study has found that teacher structure could affect global quality. Shim and colleagues (2004) found that classrooms lead by co-teachers scored higher on the Early Childhood Environment Rating Scale –Revised (ECERS-R; a global quality

assessment) compared to a hierarchical two-teacher structure (i.e., teacher and assistant teacher) or a single-teacher. Teacher-child interactions, in particular, differed across the models, including responsiveness, developmentally-appropriate instruction, and positive statements. The authors hypothesized that the shared decision-making and mutual respect facilitated by the co-teaching structure supported positive teacher behaviors, and consequentially, improved classroom quality.

While research was not found that systematically assessed the influence of service delivery model on the quality of children's inclusive experiences, some inferences can be drawn. For example, ECE teachers whose preparation programs did not include much ECSE content or opportunities to teach children with developmental delays or disabilities may have challenges differentiating instruction for children with disabilities (Bruns & Mogharreban, 2008; Frankel, Hutchinson, Burbidge, & Minnes, 2014). Given that individualization is a key feature of high-quality inclusion, such challenges would presumably influence the quality of children's inclusion. More research is needed on the differential conditions and influence of service delivery models on inclusive education, a question that the proposed research aims to explore.

Summary and Implications

There are several common limitations seen in the literature examining differences in inclusive education quality across different types of early childhood programs. First, like other research examining quality in inclusive classrooms, these studies have generally relied on a single measure of quality. That is, researchers have either assessed quality using a global measure or a measure specific to the quality of inclusive practices and supports children have access to. The one exception is Soukakou et al., (2014), who evaluated classrooms using both the ICP and ECERS-R in order to assess the ICP's validity. Findings, however, were only drawn

from the ICP, the inclusion quality measure. Though this is not a comprehensive literature review, no studies were found that measured quality using both a global measure and a measure of inclusion quality. This is likely due to the fact that a measure of inclusion quality has only recently been validated.

The lack of studies utilizing both a measure of global quality and a measure of inclusion quality is an important research gap because both contribute to high-quality inclusive education (Hurley & Horn, 2010; Buysse & Hollingsworth, 2009; U.S. Department of Health and Human Services & Department of Education, 2015). Thus, a child with a disability in a classroom with high global quality may not be experiencing high-quality inclusive education if the quality of their inclusion is not high (e.g., appropriate adaptations and modifications are not present, there is an absence of teacher-service provider collaboration). Alternately, a child with a disability may experience high-quality inclusive practices, such as material and activity adaptations, but the activities that they are taking part in contain little academic content. The present study measured both global and inclusion quality in the participating classrooms in order to better characterize the quality of these inclusive classrooms, and to start a discussion about the relationship between these two separate, though related, constructs.

A second limitation in this research is that little work has assessed the influence of service delivery model on either global or inclusion quality. This is a particularly complex issue because service delivery model is sometimes linked to organizational context. That is, the organizational context may determine the type of service delivery model used; not all service delivery models are utilized in all organizational contexts. In particular, Head Start classrooms are almost universally led by an early childhood education teacher. It is not likely that a child with a disability in a Head Start classroom would be subject to a co-teaching or ECSE teacher

service delivery model. Because of funding and teacher qualification requirements, ECSE teachers are almost exclusively employed by public school districts.

Given the diverse nature of early childhood classrooms, it would be difficult to systematically assess all of the possible combinations of organizational context and service delivery models in order to identify their unique and joint contributions to high-quality inclusive education. The present study took a case study, mixed methods approach to allow an in-depth analysis of select contextual features and their complex relationship to quality within inclusive classrooms. A closer study of context could help the field understand how to implement inclusive education in context-specific, yet high-quality, ways.

Conclusion

In sum, there is general consensus on the key features of high-quality inclusive education. Based on the DEC and NAEYC (2009) statement, they include a) practices that facilitate access to diverse learning experiences (e.g., universal design for learning, the use of technology), b) practices that support children's participation with peers and adults (e.g., tiered models of support, progress monitoring, embedded and routines-based instruction, explicit intervention), and c) institutional supports (e.g., family-professional partnerships, professional development, collaboration, quality frameworks). These features are largely reflected in assessments of inclusion quality. Moreover, practice-oriented guides emphasize the importance of self-assessment, reflection, and administrative supports in ongoing efforts to improve inclusive education quality. Some evidence indicates that programs may differ in their global and inclusion quality based on organizational context and service delivery model features. However, not much research has been conducted addressing such contextual differences.

Systematically examining quality within inclusive classrooms is still an emerging area of study. Such endeavors are complicated by the many contexts that early childhood inclusive education takes place within. The present investigation aimed to contribute to this area of study by examining the influence of program, classroom, and service delivery features on inclusive education quality and child experiences. The purpose was not to compare the contexts to judge one as being of a higher quality. Rather, the study provides insight into how key inclusive practices and supports may differ across inclusive settings due to context-specific processes, institutional supports, and practical considerations.

The present study adds to the literature reviewed here in multiple ways. First, I intentionally examined inclusive education at the child, classroom, and program level. Inclusive education is complex because it is a necessarily individualized process that is nested within the diversity of early childhood settings. The influence of context was examined in order to discover possible ways the core components of inclusive education (access, participation, supports) may vary based on context-specific affordances and constraints. The inclusion model categorization described by Odom and colleagues (1999; i.e., organizational context, service delivery model) provided an understanding of context that is specific to early childhood inclusion. The present study particularly centered service delivery model as a primary feature that may influence the quality of children's inclusive experiences. Finally, the study included assessments of both global quality and inclusion quality to reflect a full understanding of inclusive education quality. Importantly, these many facets were woven together using a case study, mixed methods approach. A mixed methods approach can help minimize the typical research-practice gap in special education research (Klingner & Boardman, 2011). Meanwhile, case study methodology allows in-depth inquiry into phenomena in which context is significant and yet the boundaries

between the phenomenon being studied (in this case, inclusive education) and the context it takes place within are not clearly distinguishable or known (Yin, 2014). By building on research that has investigated key inclusive practices, quality, and context, the current project aimed to contribute to a better understanding of how to implement high-quality inclusive education across different early childhood education contexts.

Chapter 3: Methods

In the first two chapters, I argued for the need to better understand inclusive education as a process characterized by certain key features that take place within varied early childhood contexts. These contexts potentially influence the implementation of said features. Further, inclusive education quality must be conceptualized as depending on both global quality (i.e., general quality of the early childhood classroom structure and processes) and inclusion quality (i.e., quality of practices and services specific to meeting children's individualized needs). Based on these positions, the purpose of this study was to investigate the potential influence of program, classroom, and special education service delivery features on inclusive education quality and individual child experiences. The study builds from previous literature that has identified key features of inclusive education, contextual features that may influence the implementation of inclusive education, (i.e., organizational context, service delivery model), and differences in global and inclusion quality across early childhood contexts. Specifically, the study probed the following research questions:

1. How do features of the organizational context influence the global quality of inclusive classrooms?
2. How do features of the organizational context influence the quality of children's inclusion?
3. How do features of the service delivery model influence the quality of children's inclusion?
4. How do features of the service delivery model influence the individualized learning experiences of children with disabilities?

In this chapter, I report my methodological approach for answering these research questions. First, the theoretical and conceptual framing of the study is described. Next, I provide a brief overview of the study, including the use of a mixed methods approach and case study method of inquiry. Finally, the specific research design for this study is desvribed, including the sites and participants that formed research cases, data collection measures and methods, and data analysis procedures.

Theoretical and Conceptual Framing

A strong theoretical and conceptual framework is particularly important for mixed methods research to aid the combining of data and to provide a foundation for cohesive meaning making (Bazeley, 2018). The present study was theoretically grounded in Bronfenbrenner's bioecological systems theory (Bronfenbrenner, 1976, 1994; Bronfenbrenner & Morris, 2006). Specifically, I worked from an understanding that child development results from reciprocal interactions between the child and multiple layers of their environment. The interactions that shape children's development include both proximal, or direct, child-environment interactions, and more distal, or indirect, processes that shape the environments within which the child directly interacts (Bronfenbrenner, 1976, 1994).

The bioecological systems theory was used in conjunction with DEC and NAEYC's (2009) conceptualization of inclusive education (access, participation, supports) and the empirical categorization of "forms of inclusion" (Odom et al., 1999). Together, these three components form the conceptual framing from which I designed the present research. In this section, I provide an overview of these three guiding components and a discussion of how they collectively form the study's conceptual framework.

Bioecological Systems Theory

Original Bioecological Systems Theory. The concentric circles of Bronfenbrenner's bioecological systems model are well-known and have previously been used to review the key features of inclusive education practice and research (Odom et al., 2004). In the ecological systems model, the child is centered in the *microsystem*, the immediate setting(s) in which the child regularly participates (e.g., home and family environments) (Bronfenbrenner, 1976, 1986). Next, the *mesosystem* represents the interactions between the child's different microsystems (Bronfenbrenner, 1976, 1994). Examples of processes in the mesosystem include interactions between the child's family and school personnel. Such family-school interaction may be particularly relevant to inclusive education as family-professional partnerships are considered a key feature of high-quality inclusive education (Buysse, Skinner, & Grant, 2001; DEC/NAEYC, 2009; Guralnick & Bruder, 2016).

Beyond the mesosystem is the *exosystem*, which consists of settings or social structures that do not directly contain the child, but that shape the child's development through their influence on the microsystems (e.g., parents' work, the neighborhood, governmental agencies) (Bronfenbrenner, 1976). The exosystem structures that are most relevant to children's development may be those that influence the family, school, and peer group, in particular (Bronfenbrenner, 1994; Justice, Logan, Lin, & Kaderavek, 2014). The *macrosystem* encircles the previous systems and represents the influence of culture on the overarching pattern of micro-, meso-,and exosystems a child experiences (Bronfenbrenner, 1976, 1994). While culture has been theorized and perceived in many different ways, Bronfenbrenner very broadly defined culture as the "societal blueprint" that encompasses the belief systems, bodies of knowledge, resources, and customs that are embedded in each of the previous systems (Bronfenbrenner, 1994, p. 40). The implementation of inclusive education can be viewed as being particularly shaped by the very

definition of disability being used, society's perspectives on people with disabilities, and historical values regarding inclusion (Brantlinger, 1997; Connor, Gabel, Gallagher, & Morton, 2008). At the same time, the influence of social views regarding the other identities a child may possess (e.g., race/ethnicity, socioeconomic status, home language, and non-dominant cultural perspectives) cannot be ignored as they intersect with perspectives on disability and inclusion (e.g., Artiles & Kozleski, 2007; Baglieri, 2016; Connor, Ferri, & Annamma, 2013; Lalvani & Hale, 2015). Finally, Bronfenbrenner later added the *chronosystem* to the model, reflecting the influence of environmental change or consistency on the child's development (Bronfenbrenner, 1994). Importantly, Bronfenbrenner viewed all of these systems as interdependent and argued that they should be analyzed as such by simultaneously investigating properties of the person and the environment, and the processes that take place within and between them (Bronfenbrenner, 1979).

In the present study, I focused on the implementation of inclusive education within children's classroom (microsystem) and the processes within the mesosystem and exosystem that may influence that, such as program structures, government and professional agency policies, and family-professional partnerships. Explicitly investigating the influence of larger social perspectives (the macrosystem) on inclusive education implementation was beyond the scope of the present study. However, in recognition of its importance, I attempted to recruit from racial/ethnically, linguistically, and socioeconomically diverse communities. Diverse participant representation has been a shortcoming of much special education research (e.g., West et al., 2016).

Person-Process-Context-Time Model. While the above features of Bronfenbrenner's ecological system's theory are most recognized, I additionally drew from a later iteration of the

theory, what he eventually called the Person-Process-Context-Time model (PPCT; Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 2006). This later model expands on the previous theory to offer a more specific understanding of *proximal processes*, which are the reciprocal ways in which the child interacts with their environment to affect developmental outcomes over time (Bronfenbrenner, 1994; Bronfenbrenner & Morris, 2006).

Bronfenbrenner and Morris (2006) described the PPCT model by expanding on two tenants originally introduced in previous ecological scholarship. The first proposition of the PPCT model is that human development takes place through progressively more complex reciprocal interactions between the child and the persons, objects, and symbols in their immediate environment (Bronfenbrenner, 1999; Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 2006). The second proposition states that the form, power, content, and direction of proximal processes vary systematically as a joint function of the person and their environment, both immediate and remote (Bronfenbrenner, 1999; Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 2006). Bronfenbrenner's conceptualization of Context did not change much in his later work as each of the four systems previously described (micro-, meso-, exo-, and macro-) reflect the contexts that influence a child's development (Bronfenbrenner, 1999; Rosa & Tudge, 2013). In the present study, I explicitly drew from the PPCT model's explication of some features of the Person that interact with their environment and propositions regarding Process.

Person. Bronfenbrenner identified three types of characteristics within the Person that are distinctly influential in shaping their interactions with their environment: *dispositions*, which set in motion proximal processes in a particular developmental domain; bioecological *resources* (i.e., ability, experience, knowledge, and skill), which influence the effectiveness and outcomes

of proximal processes; and *demand* characteristics that invite or discourage reactions from the social environment. Bronfenbrenner argued that these three characteristics can be present in a person in various combinations (Bronfenbrenner & Morris, 1998, 2006).

This categorization can be viewed as a simplistic classification of personal characteristics. In fact, Bronfenbrenner himself recognized that he was not fully representing the person in its completeness. However, I view an ecological approach to biological resources, in particular, as relevant to the present research in several ways. First, Bronfenbrenner was intentional in the inclusion of experiences as a bioecological resource. He argued that developmental processes were dependent on both "objective" environmental properties and the ways in which the environment is subjectively experienced by those within it (Bronfenbrenner & Morris, 2006). In accordance with this tenant, I included qualitative interviews highlighting practitioners' experiences and perspectives on inclusive education as an important contributor to understanding how inclusive education was being implemented.

Secondly, Bronfenbrenner and Morris (2006) emphasized that the bioecological resources they named are present in all people within a given environment, not just children. Thus, when considering inclusive education, it is not just the child's biological resources that shape their inclusive experience. The abilities, knowledge, and skills of teachers and administrators also shape the child's interactions, and therefore their developmental progress, within an inclusive environment. While that statement seems like it should be evident, that idea has not often been represented in research on inclusive education. Specifically, the dual importance of both child and teacher characteristics precludes the oft-repeated viewpoint that only the child's abilities determine their "readiness" to be included or their progress in an inclusive classroom (e.g., Zigmond, Kloo, & Volonino, 2009). This presumption is particularly apparent in research on

children's outcomes within inclusive classrooms. The significance of children's disabilities is repeatedly implicated as a variable that determines their outcomes in inclusive classrooms (e.g., Nahmias, Kase, & Mandell, 2014; Holahan & Costenbader, 2000; Wiener and Tardif, 2004), while little to no information is provided about the practitioners in the setting or instruction used (Oh-Young & Filler, 2015). Thus, I approached the present study with an interest in dually measuring child and teacher contributions to the inclusive environment and the child's individualized child-environment interactions.

Ecobehavioral analysis is one way to understand the reciprocal nature of child-environment interactions. Ecobehavioral analysis is heavily grounded in an ecological perspective as it aims to understand and support children's behavior as a function of their environment (Greenwood, Carta, Kamsp, & Arreaga-Mayer, 1990; Greenwood & Kim, 2012). Further, examining associations between context and behavior is a valid way to understand how classroom quality impacts children's development (Kontos, Burchinal, Howes, Wisseh, & Galinsky, 2002). Ecobehavioral analysis was the primary way I investigated the proximal processes that characterized children's individualized inclusive experiences.

Process. Bronfenbrenner and Morris (2006) identified several key properties of proximal processes within Proposition two (that the form, power, and content of proximal processes vary as a joint function of the child and their environment). Here, I focus on one of the tenants that particularly shaped variable selection. Bronfenbrenner and Morris (2006) posited that because developmentally-effective proximal processes are not unidirectional, interpersonal interactions (i.e., those between a child and a teacher) should be reciprocal (Bronfenbrenner & Morris, 2006). That is, child-environment interactions that support children's development are those in which both the child and the person (or objects) they are engaged with are changing over time in

responsive ways. This tenant provides further reasoning for measuring child and adult actions within the inclusive classroom using an ecobehavioral approach, and conducting ecobehavioral analyses (i.e., co-occurrence analyses). I particularly drew on this tenant in selecting the independent variables to analyze. In addition to teacher-focused variables (e.g., variables that assess the amount and content of teacher talk to children), I looked at ecobehavioral variables that reflect focus children contributing to interactions with adults and peers or acting on objects. These variables included those that capture children's social behavior (e.g., verbal and non-verbal communication) and classroom engagement (e.g., academic responses, academic or non-academic manipulation). In this way, the definition of proximal processes within bioecological theory contributed to ecobehavioral analysis variable selection.

Bronfenbrenner's conceptualization of proximal processes also significantly shaped what I viewed as dependent variables, or outcomes, within the study. Because proximal processes take place over time through increasingly complex reciprocal child-environment interactions, there can seldom be end outcomes in an absolute sense. An ecological systems approach precludes a focus on "main effects" in favor of a complex understanding of how developmental changes continue to shape future development. In accordance with this principal, Bronfenbrenner argued that research that takes an ecological approach should be done in a "discovery mode" (Bronfenbrenner & Morris, 2006, p 802). Meaning, rather than focusing on statistical main effects, ecological research might be implemented in an "iterative process of seeking more differentiated formulations" of child-environment interactions (Bronfenbrenner & Morris, 2006, p 802). While I do not negate the importance of outcomes-focused research, from an ecological stance, I approached the present study with the aim to further differentiate how the field understands the interaction between children and inclusive environments. Thus, my analyses and

conclusions attempt to characterize how children continuously interacted with their environment over the course of the study, rather than measure and explain a developmental outcome. In effect, children's individual participation and engagement within inclusive classrooms was the "outcome" of the study.

In sum, in using a bioecological systems theory, I sought to forefront both proximal and distal contexts while situating children's inclusive experiences within their immediate environment's unique affordances and constraints (Bronfenbrenner & Morris, 2006; Greenwood & Kim, 2012). Additionally, my analyses reflect the reciprocal, or bidirectional, nature of interactions between a child and the people or objects with which they interact (Bronfenbrenner, 1975; Bronfenbrenner & Morris, 2006). Together, these components of bioecological systems theory contributed to my understanding of children within the inclusive settings and the specific ways contextual differences may influence their experiences.

Conceptualization of Inclusive Education

It is important to explicitly name how I defined inclusive education because of the previously reviewed variation in the ways it has been defined and operationalized in research. In the present study, I adopted the conceptualization of inclusive education put forth by the Division for Early Childhood (DEC) and National Association for the Education of Young Childhood (NAEYC). As previously reviewed, DEC and NAEYC (2009) defined inclusive education as: a) *access* to a wide variety of learning opportunities, b) individualized accommodations and modifications that facilitate *participation* with adults and peers, and c) systems-level *supports* that undergird classroom efforts (e.g., professional development). This definition has since become a cornerstone of practice-oriented resources for inclusive education (e.g., Barton & Smith, 2015b; Buyesse, 2011; Soukakou, 2016), syntheses of inclusive education

research (Odom, Buyesse, & Soukakou, 2011), and efforts to expand the implementation of inclusive education (U.S. Department of Health and Human Services & Department of Education, 2015). Notably, the DEC and NAEYC (2009) conceptualization promotes a view of inclusive education as being a matter of generally supportive classroom and program processes as well as individualized practices. Thus, this definition of inclusive education shaped my view of high-quality inclusive education as consisting of global quality and inclusion quality.

In the present study, I used the DEC and NAEYC (2009) definition of inclusive education to select data sources and organize findings. For example, the Inclusive Classroom Profile (ICP) is conceptually based on the DEC and NAEYC (2009) definition of inclusive education, but almost solely represents the principles of *access* and *participation* (Soukakou, 2016). Therefore, I supplemented completion of the ICP with interview questions for administrators (adapted from the Administrator's Inclusion Checklist; Wolery & Odom, 2000) that reflected *institutional supports* they provide, including professional development opportunities, program philosophy, and staff collaboration. Teacher interview questions also asked them to name specific classroom and program features they believed supported inclusive education by facilitating access to diverse learning opportunities, participation with peers and adults, and institutional supports. In order to ensure teachers' understanding of this line of questioning, I gave them the DEC and NAEYC definition of the three components. This supported a mutual understanding of inclusive education and associated practices during the interview protocol.

The three components of inclusive education identified by DEC and NAEYC (2009) also served as an analytic tool. During qualitative data analysis, data was coded based on a categorization of classroom and program features that aligned with access, participation, and

supports. Deductive, theory-driven analysis of qualitative data can be especially useful in attempts to contextualize and complicate existing theory (Ravitch & Riggan, 2012). This was appropriate in the present research because I was attempting to identify possible ways the key components of inclusive education are shaped by the contexts within which they are implemented. Finally, DEC and NAEYC's (2009) three-dimensional definition of inclusive education served to organize within-case results in preparation for cross-case analysis. During cross-case analysis, I specifically looked for practices and structures across the three components that were differentially implemented or accessible, or that appeared to contribute to different experiences for children.

"Inclusion Forms" –Categorizing Inclusive Education Context

My study was grounded in the idea that the field must consider how inclusive education may differ in practice or quality across different early childhood contexts. Because of the wide variance in contextual features within the early childhood field (as briefly reviewed in Chapter One), it was necessary to identify possible overarching categories that can generally characterize the diversity of early childhood education and early childhood special education. The groundbreaking work of Odom and researchers in the Early Childhood Research Institute on Inclusion (ECRII) has proven to be an enduring reflection of the many ways inclusive education may be implemented. Odom et al. (1999) identified organizational context and service delivery model as two dimensions by which inclusive services can be categorized. The two dimensions were based on an empirical study of 16 inclusive programs from an ecological perspective, which matches the theoretical framework of the current study. While some of the specific forms of inclusion originally named by Odom and colleagues have evolved since the original publication, organizational context and service delivery model remain important dimensions

affecting the implementation of inclusive education (Odom et al., 2011; Shim, Hestenes, and Cassidy, 2004; Tsao, Odom, Buysse, Skinner, West, & Vitztum-Komanecki, 2010). Both organizational context and individualized service delivery can vary greatly across early childhood settings and these variations may influence the ways services are delivered and the quality of services and instruction (e.g., Coley, Votruba-Drzal, Collins, & Cook, 2016; Gallagher & Lambert, 2006; Tsao et al., 2010; Shim et al., 2004; Soukakou, Winton, West, Sideris, & Rucker, 2014). Thus, organizational context and service delivery model offer an important, and empirically-based categorization of the contextual features that may influence the implementation of inclusive education. Based on the purpose of the study, this conceptualization of inclusive education contexts drove classroom recruitment and selection. While it was not feasible to include all combinations of organizational context and service delivery model, models were chosen that characterize prominent current practice.

Organizational context. A classroom's organizational context reflects the primary administrative or programmatic agency or agencies within which the inclusive classroom operates (Odom et al., 1999). Studying the influence of organizational context is important because early childhood education is not uniform –it happens within both public and private programs with varying funding sources and structures, as reviewed in Chapter One. Odom and colleagues (1999) originally identified six organizational contexts: community-based child care, Head Start, public school early childhood education, public school-Head Start combination, public school-child care, and dual enrollment. These were later collapsed into three categories: community-based programs, Head Start programs, and public-school programs (Odom & Bailey, 2001). The organizations primarily differ by funding source, regulations, and the families they predominantly serve (e.g., socioeconomic status). Two organizational contexts were included in

the present study –one community-based center and three public school districts. Interestingly, one of the public school programs included in the study had also recently obtained a Head Start contract. Thus, it aligned with an original organizational context identified by ECRII –the public school-Head Start combination. This distinction will be further discussed when describing that research site.

Service delivery model. Service delivery model (or, "individualized service model"), reflects approaches used to provide individualized services and classroom instruction to young children with disabilities within inclusive programs (Odom et al., 1999). This designation indicates who assumes primary responsibility for planning, implementing, and monitoring activities for children with disabilities in the classroom on a day-to-day basis. Odom and colleagues (1999) identified six models of individualized service provision: itinerant teaching-direct service, itinerant teaching-collaborative/consultative, team teaching, early childhood (ECE) teacher, early childhood special education (ECSE) teacher, and integrative/inclusive activities.

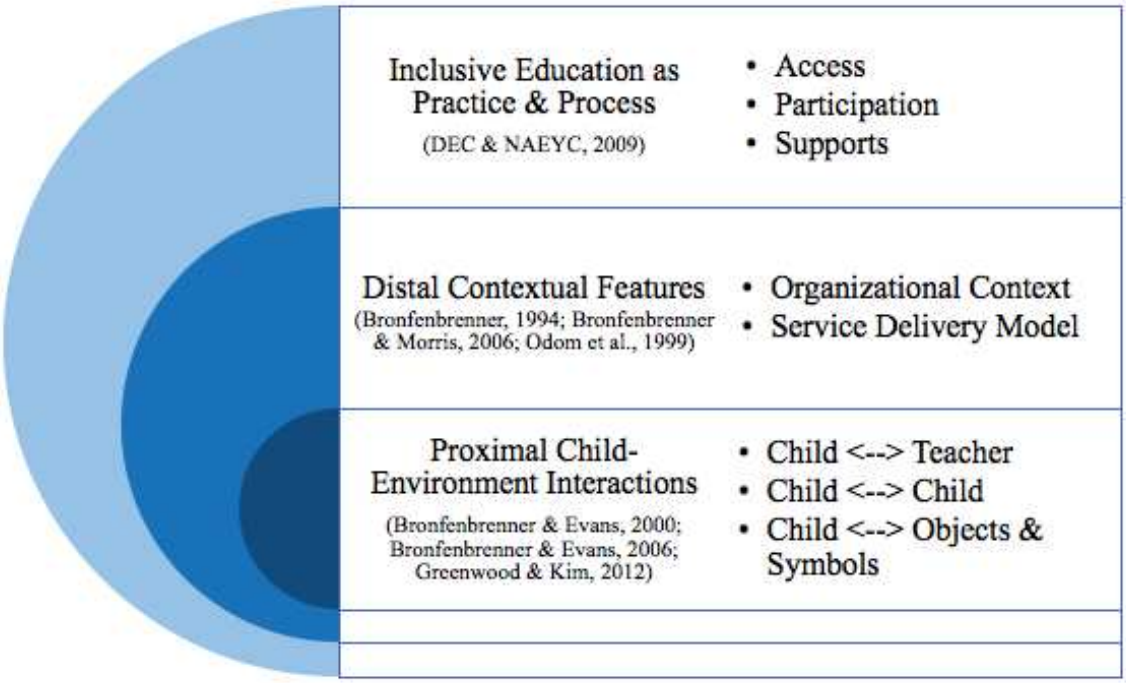
The service delivery models have not been reorganized since the original study, but they may have shifted some in actual practice. In particular, more recent evidence indicates that the distinction between the two itinerant teacher models is not clear. Instead, itinerant teachers' daily role is more dependent on program and practitioner preferences or needs rather than a particular model (Dinnebeil, McInerney, & Hale, 2006; Nelson, Lindeman, and Stroup-Rentier, 2011). Moreover, while service delivery model is separate from organizational context, it may be heavily dependent on the organizational context. For example, early childhood programs outside of public schools may be less likely to use the early childhood special education (ECSE) model based on the lower staff qualification requirements, funding, and salaries that have been

observed in many community-based programs (French, 2010). Three service delivery models were included in the present study: the co-teaching model, ECSE teacher model, and ECE teacher model. The two co-teaching classrooms and the ECSE classrooms were within a public school setting and the two ECE classrooms were in a community-based center.

Conceptual Framework –An Ecological Approach to Inclusive Education

Together, these three components (bioecological systems theory, DEC and NAEYC [2009] conceptualization of inclusive education, and a two-dimension categorization of inclusive education context) formed the conceptual framework for this study. They effectively constitute an ecological approach to investigating inclusive education in that they simultaneously consider proximal child-environment interactions, more distal contextual features that influence the environments in which children are included, and the key features and processes unique to inclusive education. The conceptual framework for the study is illustrated in Figure 1. To summarize the previous sections, this framework drove participant recruitment and selection, the identification and development of data sources, the content and structure of data collection, and finally, data analysis. I will now provide a brief overview of the study's research design. Then, I will describe the specific sites and participants included in the study, and the measures and investigative processes that were utilized.

Figure 1. *Conceptual Framework for Study*



Study Overview

The overall study design is illustrated in Figure 2.

Mixed Methods Approach

The study used a sequential explanatory design in which quantitative data collection and analysis (i.e., structured observations) was followed by qualitative data collection and analysis (i.e., in-depth interviews) (Creswell & Plano Clark, 2011; Ivankova, Creswell, & Stick, 2006). The study was *sequential* in that quantitative data was collected first and was followed by qualitative data collection across two phases of data collection (QUANT → qual →QUANT → qual) (Creswell & Plano Clark, 2011). Note that QUANT/quant and QUAL/qual are common notations used in mixed methods research to indicate the nature of the data collected (quantitative or qualitative) and its priority as dominant (uppercase) or supplemental (lowercase) in the study (Morse, 2003). The study was *explanatory* in that qualitative data collection and

analysis was used to help further explore and clarify quantitative findings in order to address possible underlying mechanisms (Creswell, Plano Clark, Gutmann, & Hanson, 2003; Creswell & Plano Clark, 2011). "Explanatory" is not being used in a causal sense of the word. Instead, explanatory denotes the need to better understand quantitative processes (Creswell & Plano Clark, 2011). In the present study, I utilized quantitative methods to understand how inclusive practices may differ across inclusion models. Qualitative interviews then added to an understanding of differences across contexts and the possible mechanisms underlying said differences. I approached the use of multiple methods from a stance of methodological pluralism, meaning both qualitative and quantitative data were perceived as contributing different, but necessary, perspectives and information (Johnson & Onwuegbuzie, 2005). Although qualitative data was positioned as supplementing quantitative data, the two types of data were viewed as equally representative of "truth." This reflects the pragmatic traditions of mixed methods inquiry (Johnson & Onwuegbuzie, 2005; Klingner & Boardman, 2011), and its unique position as both a methodology and a way of thinking about the purposes, implementation, and applications of research (Greene, 2007, 2008). In the present study, a mixed methods approach served three primary purposes: complementarity, development, and initiation. Additionally, a mixed methods approach was important based on the conceptual framework that guided the study.

Complementarity. Complementarity reflects the use of a mixed methods approach to provide a deeper, more comprehensive understanding of the phenomenon being studied (Greene, 2007). In the present study, the teacher and administrator interviews (qualitative data) clarified and expanded on structured observations (quantitative data). In this way, a mixed methods approach supported my ability to investigate both the quality and contextualized implementation of inclusive education. For example, there were some program-level supports, in particular, that

would have been difficult or impossible to observe in the timeframe allotted, including the type and content of professional development that teachers received. During interviews, I asked administrators and teachers about professional development opportunities, and inquired about observed and hypothesized context-specific strengths and challenges related to inclusive education. The use of multiple types of data increased the likelihood of capturing a more complete picture of the practices and institutional structures being used to support inclusive education.

Development. Mixing methods also served a developmental function as I engaged in iterative data collection and analysis (Greene, 2007). In particular, the structured observations contributed to the development of interview protocols. After initial analysis of quantitative data from the first phase of data collection, I developed interview questions to better understand the practices observed, institutional supports for observed practices, and practitioners' perspectives on their implementation of inclusive supports. In Figure 2, this process is represented by the solid arrow between *Structured Observations* and *Teacher and Administrator Interviews*. Qualitative interviews did not change the structured (quantitative) observations, in order to maintain validity of the assessments. However, interviews did allow me to determine whether the structured observations reflected all relevant classroom activities or if I needed to conduct them at different times of the school day than had previously been represented. This process is represented by the lighter colored arrow between *Phase 1: Teacher & Administrator Interviews* and *Phase 2: Structured Observations* in Figure 2. Note that although qualitative data (interviews) played a significant role in answering my research questions, its priority in the study is denoted as supplemental (lowercase, qual) because the analysis and interpretation of qualitative data was driven by the quantitative results. Thus, at no point in the study did

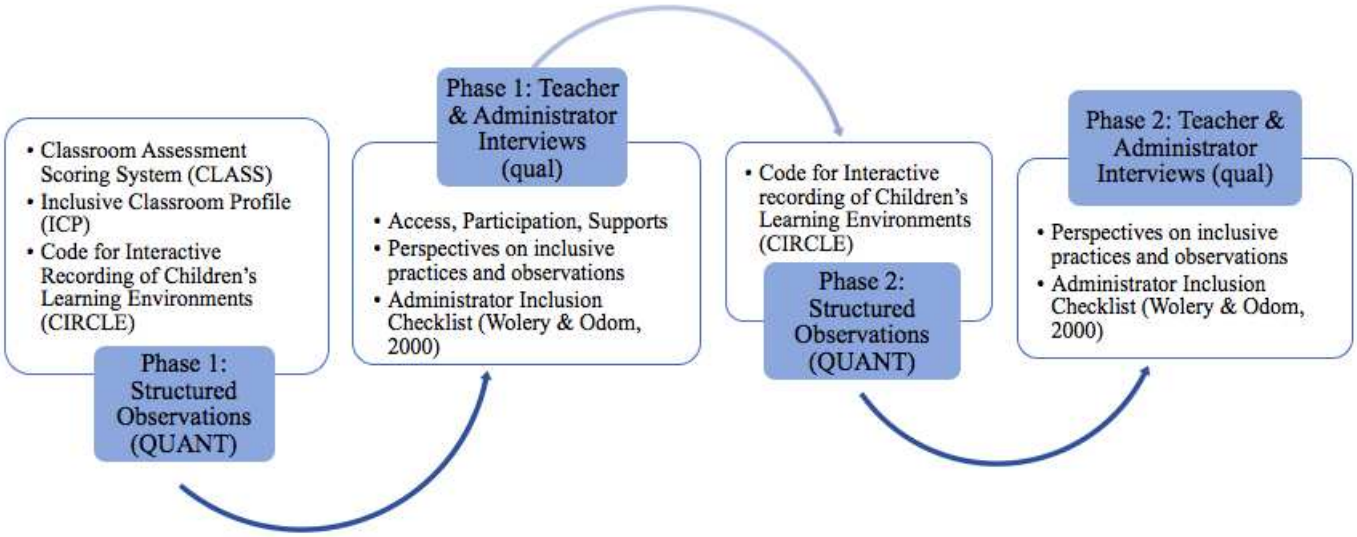
qualitative data stand on its own. This was a design choice that is common in explanatory mixed methods studies (Creswell & Plano Clark, 2011).

Initiation. Mixing methods also served an initiation purpose given that a primary goal of the present research was to further differentiate the field's understanding of inclusive education based on context. Mixing methods with the purpose of initiation is to purposefully look for and evoke paradox, areas of divergence, and new understandings within a single phenomenon (Greene, 2007). Simultaneously investigating multiple cases (i.e., inclusion models) aided the exploration of context as a key variable that differentiates how practitioners implement inclusive education. For example, while conducting structured observations, I realized that the community-based classrooms that participated in the study did not have a dedicated small-group time like the public school classrooms. Instead, community-based classrooms had a "teacher-led center" during free play/center time. Noting this difference in practice, I asked both community-based and public school teachers and administrators about their chosen small group structure. Both said that the structure was determined by the curriculum they used. However, the community-based center implemented the same curriculum as one of the public school programs. Pursuing this divergence led me to more closely examine the role of curriculum interpretation and program-level instructional supports in subsequent qualitative analyses. Mixed methods research may be particularly adept at addressing the research-practice gap within special education because it offers such opportunities to pursue divergence and understand localized perspectives (Klingner & Boardman, 2011).

Conceptual Framework. Finally, a mixed methods approach was important due to the conceptual framework on which the study was based. For example, understanding unobservable program-level structures (e.g., program policies, professional development, staff collaboration)

was necessary in order to characterize the institutional supports for inclusion that different organizational contexts offer (DEC/NAEYC, 2009). Identifying such structures in a more in-depth way required teacher and administrator interviews. Additionally, as previously discussed, the bioecological systems theory I utilized emphasizes the need to consider both objective environmental properties and the ways in which the environment is subjectively experienced by those within it (Bronfenbrenner & Morris, 2006). Thus, while identifying the inclusive practices being implemented is essential, it is also important to understand practitioners' attitudes and beliefs about inclusive education (e.g., Barton & Smith, 2015a; Hurley & Horn, 2010). Such perspectives contribute to an understanding of why and how practitioners used certain practices to support the quality of inclusive services they provided.

Figure 2. *Study Research Design*



Note: QUANT denotes the quantitative nature of the data collected and its dominance in the study. Meanwhile, qual denotes the qualitative nature of the data collected and is primarily supplemental use in the study (Morse, 2003).

Case Study Method of Inquiry

A case study method of inquiry was used because it allows inquiry into phenomena in which real-world context is significant and yet the boundaries between the phenomenon being studied (in the present study, inclusive education) and context (in this case, the broader classroom and program setting) are not clearly distinguishable (Yin, 2014). Further, a case study approach is particularly beneficial when theory heavily guides data collection and analysis with an understanding that more variables exist than can be manipulated or fully represented (Yin, 2014). In the present study, the aforementioned theoretical and conceptual framework shaped my focus on two dimensions of context (organizational context and service delivery model) and a select collection of child, teacher, and program data. However, I recognize the myriad of complex features, structures, and policies that guide early childhood education (reviewed in Chapter One). Using a case study method of inquiry that relied on multiple sources of evidence and carefully selected cases allowed me to investigate inclusive education context and implementation by studying select facets of the phenomenon in an in-depth way. I ventured to go "deep" rather than "wide." Case study designs are particularly beneficial for providing a rich description of inclusive practices (Kurth, Lyon, & Shogren, 2015).

I used an embedded, multiple case design in which multiple units of analysis were embedded within a case with a distinctive context (Yin, 2014; see Figure 3). Multiple cases were investigated in order to complicate the understanding of the contexts at hand and draw more compelling arguments (Herriott & Firestone, 1983; Yin, 2014). The use of multiple cases strengthens conclusions because it increases the potential for identifying hypothesized contrasts between contexts (Eilbert & Lafronza, 2005; Hanna, 2005). In the present study, I investigated

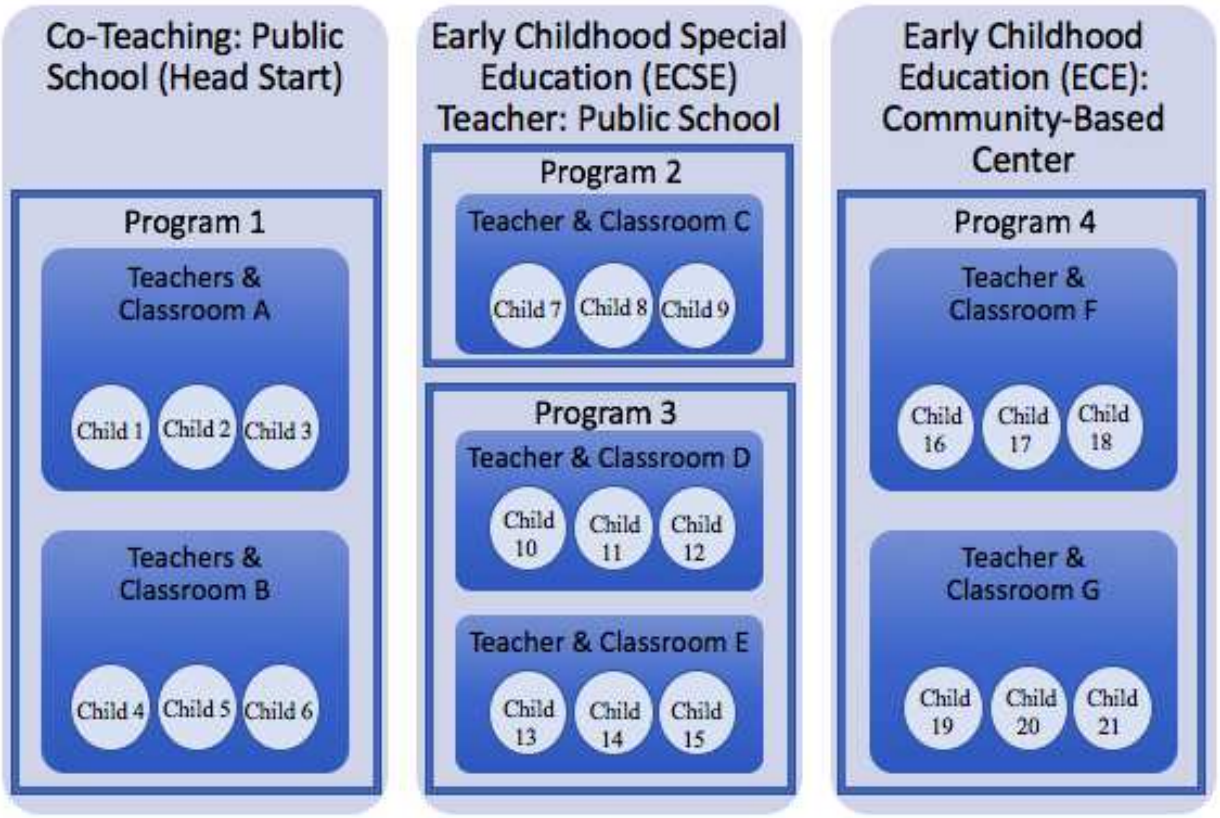
multiple cases (or contexts) in order to better draw conclusions about how context might influence differential inclusive education practices and quality.

Each model of inclusive education (consisting of two or three classrooms) formed a case for which quantitative and qualitative analyses were integrated. There were three cases that represented three models of inclusive education: co-teaching (or team teaching) within a public school, early childhood special education (ECSE) teacher within a public school, and early childhood education teachers within a community-based center. Within each case, there were three units, or levels, of analysis: the child, the teacher(s)/classroom, and the administrator/program (Teddie & Tashakkori, 2009; Yin, 2014). I collapsed the teacher and classroom into a single unit of analysis because I was not separating the teachers' practice from the classroom context (one instance in which context and the phenomenon being studied is difficult to distinguish). Additionally, administrators were positioned as a representative of their program as a whole.

Cases were formed based on inclusive education model level rather than the program or classroom level because the model of inclusion was the phenomenon being studied (Yin, 2014), yet I also wanted to account for classroom and program factors (environments more proximal to the child). In case studies, replication logic, as opposed to sampling logic, guides case formation in order to strengthen inferences (Yin, 2014). In the present study, the classrooms within cases served as theoretical replications –that is, they were viewed as potentially operating similarly because of their shared inclusion model (the theory-based context they were defined by) and operating differently from classrooms in other contexts (Yin, 2014). Using multiple methods and multiple levels of analysis helps confirm whether that was true. Additionally, using multiple methods and multiple levels of analysis helped identify the influence of shared context when

investigated in conjunction with other cases. Finally, a case study method of inquiry using multiple units of analysis also served my commitment to understanding ecological context across different layers of a child's environment, a facet of bioecological systems theory (Bronfenbrenner, 1999; Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 2006).

Figure 3. *Formation of Three Cases*



The combination of a mixed methods approach and a case study method of inquiry contributed to a nuanced, complex understanding of contextualized inclusive education implementation. This is particularly illustrated by the three units (or levels) of analysis where quantitative and qualitative methods were differentially applied (Teddie & Tashakkori, 2009). At the child level, I conducted structured ecobehavioral observations (QUANT). This provided a

close analysis of the interactions between the child and their immediate environment –the proximal processes that were influenced by classroom, program, and inclusion model features. At the classroom level, I conducted structured classroom observations (QUANT) and teacher interviews (QUAL). Those methodological tools provided information about inclusive education quality (global and inclusion quality), and the conditions and influence of service delivery models. Finally, at the program level, document review that was quantified by administration of the Inclusive Classroom Profile (ICP; QUANT), and administrator interviews (QUAL) provided information about the organizational context and systems-level affordances and constraints for inclusive education.

One limitation of the current case formation was that a single program was represented in two out of the three cases in the present study. Targeted data collection using a mixed methods approach helped address this limitation because it helped increase the amount and types of information known about each classroom and program as well as the possible influence of those factors on teachers' practice and children's experiences. This aligns with the complementarity purpose of mixing methods that was previously discussed (Greene, 2007).

Research Design

Research Sites and Participants

Sampling. Participants across each unit of analysis were recruited using multilevel purposive sampling with multiple purposive techniques (Collins, 2010; Teddie & Tashakkori, 2009). In multilevel purposive sampling, participants from different populations (i.e., teachers, administrators, and children) are included in a study at different times based on the variable or phenomenon of interest (Collins, 2010). In this present study, these different populations were

sampled from in order to represent the three units of analysis –child, teacher/classroom, and program.

Districts and classrooms were first selected using stratified purposive sampling based on the desired forms of inclusion to be included (Teddie & Tashakkori, 2009; Purcell, Horn, & Palmer, 2007). Public school districts were recruited that serve children with disabilities in public school ECE classrooms, community-based programs, or Head Start classrooms (the possible organizational contexts) using itinerant ECSE teachers, co-teaching teams, ECE, or ECSE teachers (the potential service delivery models) (Odom et al., 1999; Odom & Bailey, 2001). Recognizing the necessarily limited scope of this project, all combinations of organizational context and service delivery could not be represented. Therefore, as recruitment began, the districts and programs who agreed to participate shaped my ongoing recruitment. The purpose of the study necessitated representation of at least two organizational contexts and at least two service delivery models. This is in line with a sequential approach to purposive sampling within mixed methods projects wherein gradual selection is done based on relevance to research questions (Teddie & Yu, 2007). Further, taking a purposeful approach to sampling helped ensure maximum variation (Onwuegbuzie & Collins, 2007), which was warranted given the diversity of early childhood contexts and the purpose of the study. The use of multiple purposive techniques, including those based on theory and ensuring maximum variation, have been recommended for mixed methods research that aims to study complex issues and that does not intend to make probability-based external validity claims (Poorman, 2002; Teddie & Yu, 2007). Instead, purposive sampling in qualitative and mixed methods research can allow transferability, the generalization of results to specific, similar contexts based on the conceptual strength of the study (Lincoln & Guba, 1985; Onwuegbuzie & Collins, 2007).

In the present study, I first secured the participation of the public school district that uses co-teaching, followed by the school districts that use an ECSE model. Therefore, I narrowed my recruitment to eligible community-based centers, which resulted in the recruitment of a community-based center that utilizes an ECE service delivery model. Together, these programs allowed me to investigate the possible differences between two organizational contexts (public schools and community-based centers) and three service delivery models (co-teaching, ECSE teacher, and ECE teachers). Therefore, I discontinued further recruitment. The designated administrator for the study was either the program's director/principal or another administrator who provided direct oversight to early childhood special education services.

Once school districts agreed to participate, I worked with an administrator as a key informant to identify classrooms with eligible focus children. This process resulted in eight classrooms being selected for inclusion in the study. However, upon starting data collection, one classroom was not clearly a designated service delivery model identified by Odom and colleagues (1999). The classroom was an afternoon early childhood special education (ECSE) room that served children who are deaf or hard of hearing (DHH) with typically-developing peers. The classroom was led by a co-teaching team who also led a morning co-taught inclusive classroom that was participating in the study. However, due to the special population and the designated-ECSE teacher's special qualifications to serve that population, the classroom was not comparable to a typical co-teaching model. Therefore, that classroom was removed from further analysis. The present study included seven early childhood classrooms –three ECSE teacher-led classrooms within public schools, two co-teaching team classrooms within public schools, and two ECE teacher-led classrooms within a community-based center.

Once participating classrooms and teachers are determined, child participants were recruited using critical case sampling. That is, children were selected who represented cases that are particularly important to understand the phenomenon being studied, inclusive education (Onwuegbuzie & Leech, 2007; Teddie & Tashakkori, 2009). I considered "critical cases" to be children with mild/moderate developmental delays or disabilities, and children who are typically-developing and are not undergoing special education evaluation. Children with mild/moderate disabilities were selected as critical cases because those children are most likely to be placed in an inclusive classroom, rather than a self-contained placement, compared to children with more significant needs (Guralnick, Neville, Hammond, & Connor, 2008; Segall & Campbell, 2014). Therefore, it is vital to understand their experiences as the children most affected by the quality and context of inclusive settings. Both children with and without disabilities were included as focus children because it is important to reflect both of their experiences to understand how inclusive education is being implemented. In fact, in defining early childhood inclusion, DEC and NAEYC (2009) discussed "the desired results of inclusive experiences *for children with and without disabilities*" (emphasis added).

Teachers in the public school (co-teaching and ECSE) classrooms selected two child participants with identified developmental delays or disabilities receiving special education services and one child who is typically-developing (without an identified disability). Teachers in the community-based center classrooms only had one child in their classrooms who received special education services. Therefore, they selected two typically-developing children in addition to the child receiving special education services. While this is a study limitation, it reflects the realities of inclusive classrooms with a natural proportion of children with and without disabilities. That is, in a classroom that reflects the general population, only one or two children

may have an identified disability because all children are attending the classroom that they would have if they did not have a disability label.

Parent consent was obtained for all children in the participating classrooms by sending home a consent form to be signed with a parent letter that clearly stated the purpose of the study and the research activities that would take place. Parent consent for focus children included parents agreeing to their child being observed individually as a part of the study and consenting to the child being videotaped. Other children in participating classrooms were required to get parent consent in order to be videotaped. All focus children that the teachers selected obtained parent consent for their participation and consent for them to be videotaped. However, several non-focus children did not receive parent consent to be videotaped. When a child did not have parent consent to be videotaped, I worked with the teacher(s) to ensure non-consented children were not included in classroom videos. Additionally, I did not include children without parent consent in any field notes or other research documentation.

Participants. In total, seven classrooms across four early childhood programs were included in the study and 21 children participated as focus children (12 children with disabilities, nine children without disabilities). Two classrooms used a co-teaching (or team teaching) model in which a designated early childhood education teacher and a designated early childhood special education teacher shared teaching responsibilities in the same classroom (Odom et al., 1999). Three classrooms reflected an early childhood special education (ECSE) teacher model whereby an ECSE teacher (that is, a teacher with specialized special education training) had primary responsibility for planning, implementing, and monitoring classroom activities with little or no collaboration with a general early childhood education teacher. Additionally, children with disabilities constituted a larger proportion of the classroom population. Two classrooms used an

early childhood education (ECE) teacher model whereby early childhood teachers (without any specialized training in special education) assumed primary responsibility for planning, implementing, and monitoring day-to-day classroom activities for children with and without disabilities with some contact or consultation with special education or related services personnel (Odom et al., 1999). The co-teaching and ECSE classrooms were in public school settings while the ECE teacher model was in a community-based program. Tables 2 and 3 report demographics for the administrator and teacher participants, respectively. Table 4 describes the demographics for focus children.

Early childhood programs and administrators. There were four districts or early childhood programs in the study that each had a designated administrator participant. Table 2 reports the demographics for the four participating administrators.

Program 1 was a public school district building within a culturally and linguistically diverse urban neighborhood. The building consisted of 19 preschool classrooms, some of which were full-day classrooms and some of which were half-day rooms (with different sets of children in the morning and afternoon). Nine of those classrooms were co-teaching classrooms where there was one designated-ECSE teacher and one designated-ECE teacher. The building was also a Head Start service provider, meaning that almost all of the children in the building either had an IEP (funded by school district special education) or were eligible for Head Start funding due to individual or family risk factors. The Head Start funding influenced some school structures. For example, there was a designated families outreach coordinator who was funded by Head Start, administrators were required to use certain teacher and program evaluations, and ECE-designated teachers were required to attend Head Start-specific professional development. Program 1 might be considered a "blended" program by the Tsao et al. definition (i.e., the

program drew funding from multiple sources, including special education and Head Start), but the present study used the Odom et al. (1999) categorization because it was empirically determined based on a study of early childhood inclusive programs.

The children in Program 1 were primarily from minority and low-income families. In accordance with district policy, the co-teaching classrooms all had a maximum of 17 children, including eight or fewer children with IEPs (under 50% children with IEPs). The administrator participant for that program was the building's assistant principal. The assistant principal had previously taught Kindergarten in what she called a "SPED collab room," meaning it was a designated general education room that included children with disabilities and that had special education staff (teachers and paras) periodically support children or provide consultation. She described her administrator role as consisting of various types of instructional support (e.g., observing or evaluating teachers and providing feedback, taking child data to support teachers' practice), handling more significant child behaviors, and supporting district initiatives in the building.

Program 2 (ECSE teacher: public school) was an early childhood special education public school district building also within an urban community. The building included 12 half-day classrooms (total of 24 classes of children) that were all designated special education rooms with approximately 50% or more children receiving special education services; six of the classrooms did not have any typically-developing peers in the room. The administrator participant for that program was the building's principal. The principal had previously taught early childhood special education within both a public school district and a special education cooperative program. She had always taught in segregated special education programs with no typically-

developing peers. Before her current position, she had also acted as an early childhood education administrator for a different district.

Program 3 (ECSE teacher: public school) was a district-administered early childhood special education program within a public elementary school located in the suburbs of a small city. The early childhood program consisted of three half-day classrooms (different sets of children in the morning and afternoon for each classroom). All of the classrooms had approximately 50% children with disabilities. Some of the children who did not have disabilities were paying students and some were designated "at-risk" students who were funded by Title 1 (funding originally appropriated to ECE programs under the No Child Left Behind [NCLD] Act). The building was also the central site for the district's early childhood itinerant teachers and some service providers. The administrator participant was the supervisor for all early childhood programs in the district. She also acted as a school psychologist for the district who conducted preschool evaluations and some limited services. The administrator had previously been a full-time school psychologist, serving children in PK-12th grade, and then served as a district special education consultant. In her current role, the administrator assigned children to classrooms across the district (managing ratios of children with and without disabilities), supervised itinerant teachers serving in community-based classrooms, and provided instructional support for teachers in her building (e.g., helping teachers adapt curriculum).

Program 4 (ECE teachers: community-based center) was a university-affiliated center in a small college town. The center served both families associated with the University and community members. The program was accredited by the National Association for the Education of Young Children (NAEYC). There were 15 classrooms in the building, seven of which were preschool classrooms. All of the classrooms were full-day classrooms. Additionally, the program

administered an after-school program for elementary students. All classrooms at the center had two full-time lead teachers in addition to part-time undergraduate student workers who rotated to support different classrooms as needed. The preschool classrooms primarily served children without identified disabilities, though several classrooms had a child who received special education services from the local school district in various ways. The administrator participant for the center was the program director. The director had previously worked in various K-12 after-school programs, and had most recently taught and supervised in after-school and non-traditional education programs for elementary-age children. He described his current role as allocating resources, generally supporting teachers (i.e., discussing ideas or strategies), and coordinating professional development. The center had a curriculum support specialist who provided more direct instructional support for teachers.

Table 2.

Administrator Participant Demographics

Case	Participant	Program	Gender[a]	Race/ Ethnicity	Age Range	Years of Early Childhood[b] Experience	Years in Current Role
Co-Teaching: Public School	Admin. 1	1	F	Caucasian	31-39	13	2
ECSE Teacher: Public School	Admin. 2	2	F	Caucasian	40-49	15	3
	Admin. 3	3	F	Caucasian	50-59	30[c]	4
ECE: Community-Based Center	Admin. 4	4	M	Caucasian	31-39	15	4

Notes: [a]F =Female; M =Male; [b]Early Childhood was defined as Birth—3rd grade in accordance with the two states within which the study took place. [c]First 26 years of experience were service as a PK-12 school psychologist and special education consulting teacher where service included early childhood students, but was not limited to early childhood.

Table 3.

Teacher Participant Demographics

Case	Participant	Program & Classroom	Race	Age Range	Licensure[a]	Highest Degree[b]	Yrs. Early Childhood[c] Teaching Experience	Yrs. in Current Role
Co-Teaching: Public School	Teacher 1	1-101	Caucasian	21-30	Yes	BA/MAP	4	4
	Teacher 2	1-101	Caucasian	31-39	Yes	BA/MAP	13	3
	Teacher 3	1-103	Caucasian	21-30	Yes	BA	4	4
	Teacher 4	1-103	Caucasian	21-30	Yes	BA	5	3
ECSE Teacher: Public School	Teacher 5	2-104	Caucasian	40-49	Yes	MA	3	1
	Teacher 6	3-105	Caucasian	31-39	Yes	MA	12	3
	Teacher 7	3-106	Caucasian	50-59	Yes	MA	26	3
ECE: Community -Based Center	Teacher 8	4-107	Caucasian	21-30	No	HS/CDA	10	5
	Teacher 9	4-107	Caucasian	21-30	No	MA	12	4.5
	Teacher 10	4-108	Asian	31-39	No	BA	6.5	1.5
	Teacher 11	4-108	Caucasian	21-30	No	AA	11	6

Notes:; [a]Indicates whether the teacher had a state licensure specific to teaching in an ECE/ECSE setting [b]BA =Bachelor's Degree; MA =Master's Degree; MAP =Master's Degree in Progress; HS =High School Diploma; CDA =Child Development Associate Certificate; AA =Associate's Degree. [c]Early Childhood was defined as Birth—3rd grade in accordance with the two states within which the study took place

Teachers and classrooms. Eleven teachers participated across the seven classrooms. The lead teacher of the ECSE public school classrooms participated (3) and both of the co-lead teachers of the co-teaching public school and ECE community-based center classrooms (8) participated. All teacher participants were female. Table 3 reports other demographics for each of the teacher participants. Note that the classrooms' code (e.g., 1-101) reflects both the program teachers are in (e.g., the "1" in 1-101) and the classroom (e.g., "101" in 1-101).

The co-teaching public school classrooms, 1-101 and 1-103, had 16 and 17 children enrolled during the observation period, respectively. Out of those students, 6 and 8 children had IEPs, respectively. Additionally, both classrooms had many dual language learners (DLLs) whose home language was Spanish. Classroom 1-101 had 9 DLLs while classroom 1-103 had 11 DLLs. Both classrooms were half-day classrooms and had one paraprofessional in addition to the

two teachers. Both of the classrooms had 3-5 ½ year old children. In addition to a circle time large group routine, both classrooms had a district-required dialogic reading (structured book reading) time. Although this was a district requirement, the teachers were able to implement it in a variety of ways. Sometimes, the dialogic reading activity was conducted as a large group activity (e.g., reading or re-telling the book) and sometimes teachers broke the classroom into small groups (e.g., doing a hands-on activity related to book content). All of the co-teaching teachers had their Bachelor's degree in Early Childhood (Birth through third grade) and licensure to teach in early childhood (birth-3rd grade) settings. The two ECSE-designated teachers in each classroom (Teacher 2 in 1-101 and Teacher 3 in 1-103) also had ECSE as a part of their degree – it was a minor for one of the teachers and a part of a unified ECE-ECSE degree for the other teacher. Additionally, the designated-ECSE teacher for classroom 1-101 (Teacher 2) had a license specific to Early Childhood Special Education ("Early Childhood Handicapped" –note that this state license had been replaced by a unified ECE-ECSE license since the teacher had started teaching, but her certification was still valid). The designated-ECSE teacher for classroom 1-103 (Teacher 3) had a unified ECE-ECSE license. Finally, both of the 1-101 teachers (Teachers 1 and 2) were enrolled in a Master's program during the study. Teacher 1 was enrolled in a unified ECE-ECSE program while Teacher 2 was enrolled in a program preparing practitioners to work with PK-12 students who are deaf or hard of hearing. This was the first year each of the co-teaching teams were teaching together, though they all had co-teaching experience at the preschool level.

The ECSE classrooms were all substantially smaller than both the co-taught classrooms and the community-based center classrooms. They were all half-day classrooms. Additionally, all of the teachers (Teachers 5-7) had a Master's degree in either unified ECE-ECSE or Special

Education. Classroom 2-104 had six children and was a specialized classroom for children who were deaf or hard of hearing (DHH). The program's administrator reported that this was the first year they operated a classroom specifically for children who are DHH; it was reportedly opened once the district realized the number of children with hearing impairments who would be enrolling. Two children in the classroom were typically-developing peers. All children were 4-5 year olds. There were some unique classroom routines. While all classrooms in the study had at least one meal or snack time during their school day, classroom 2-104 uniquely used their breakfast time as an additional large group instructional period during which the teacher introduced the activities for the day and facilitated some discussion related to the unit's theme. For example, during one of the first days of observations, the teacher introduced a new unit on Holidays and led a discussion about a German advent calendar she brought from home. Additionally, the classroom did not have a dedicated small group time during their schedule. Instead, they had a "project time" which served as a teacher-led activity in place of small groups. Project time often consisted of an art activity that was directly facilitated by the teacher (e.g., everyone using their thumbprint to make the lights on a menorah picture). The 2-104 teacher (Teacher 5) had recently obtained her Master's degree in a unified ECE-ECSE program and had a unified ECE-ECSE license. This was her first year teaching in an ECSE classroom, though she had previous experience as a paraprofessional. The classroom had one paraprofessional who was a retired elementary teacher.

Classroom 3-105 had eight children, five of whom had an IEP. Children in the classroom ranged from 3-5 years old –they typically entered the room when they transitioned to Part B IDEA services and stayed until they went to Kindergarten. The classroom had three paraprofessionals who typically focused on supporting and collecting data on one child per day;

the para-child pairing rotated on a regular basis. Like classroom 2-104, the classroom did not have a dedicated small group time during their schedule. Instead, they had an "academic center" time which served as a structured activity in place of small groups (e.g., an activity that required children to cut out pictures and place in a certain pattern). Additionally, classroom 3-105 had an "arrival period" during which children typically completed a worksheet or Handwriting without Tears lesson once they arrived in the classroom in the morning. Classroom 3-105 also structured free play time in a unique way. During that time, paraprofessionals periodically pulled their designated child to an isolated spot in the room (e.g., in a corner partially walled off by foam separators) to do work specifically related to the child's IEP goals or developmental needs. The paraprofessionals also collected data during that individual work time. These individual sessions typically lasted about five to eight minutes and were done approximately twice during the free play period. The 3-105 teacher (Teacher 6) had a Master's degree in Special Education and had previously taught in preschool through second grade. She was separately licensed in early childhood and special education.

The final ECSE classroom, classroom 3-106, had nine children, four of whom had an IEP. Their ages ranged from 4-5 ½ years old. One unique feature of this classroom was that the teacher led what she called a "literacy group" during which she read and discussed a book. The classroom teacher (Teacher 7) had her Master's degree in unified ECE-ECSE. She had previously taught in preschool and had also provided services in the state's Part C (Birth-3 years) early intervention program. Her teaching license was in unified ECE-ECSE. During the study, the 3-106 teacher taught her classroom in the afternoon and worked as an itinerant teacher for the district in the morning, travelling to local community-based centers to provide special education services. In addition to the classroom teacher, classroom 3-106 had two paraprofessionals.

The community-based classrooms both had 20 children in their room and two teachers. Note that although the classrooms were taught by two teachers, it was not considered a co-teaching inclusive classroom based on the Odom et al. (1999) categorization because neither teacher was a specialized ECSE teacher. In the community-based classrooms, the focus children with a disability were the only children in the classroom with an IEP, though classroom 4-108 also had a child who was being evaluated for special education eligibility. Classroom 4-107 had children who were 4-5 ½ years old while classroom 4-108 had children who were 3-4 years old. Both classroom 4-107 and 4-108 did not include a small group time in their schedule; instead, they had a teacher-led center during free play/center time that replaced a dedicated small group time (e.g., building a simplified circuit board, making letters and envelopes to mail).

None of the 4-107 and 4-108 classroom teachers (Teachers 8-11) had state teaching licenses, unlike the public school teachers, and their educational backgrounds varied significantly. The variance in teacher education found in community-based programs has been reported in previous research (e.g., French, 2010; Saluja, Early, & Clifford, 2002). In classroom 4-107, Teacher 8 had her high school diploma and Child Development Associate (CDA) certification (a national independent credential for early childhood professionals). Teacher 9 had her Master's degree in Education Administration and Leadership. The later teacher was also certified to be the director of child care centers with up to 100 children (that license did not require a teaching license). She planned to eventually become a child care center director. Additionally, Teacher 9 had a brother with autism spectrum disorder (ASD) –she reported that that shaped her view of children with disabilities and an interest in special education). This was the teachers' first year teaching together, though they both had previous preschool teaching experience. In classroom 4-108, Teacher 10 had her Bachelor's degree in Social Sciences and

had previously worked in other community-based preschools as well as an Early Head Start program. She also had a toddler who had special needs requiring early intervention. Teacher 11 had her Associate's degree in Early Childhood Education and had previously worked in a different university-affiliated child care center with toddlers and preschoolers.

Children. Twelve children with developmental delays or identified disabilities (receiving special education services) and nine typically-developing children participated in the study. Table 4 reports the demographics for each of the child participants. Note that children's age was based on teachers' report and their exact birthday was not always immediately available. For children who only have their age in years, the exact age (with year and month) was not available. Teachers reported the IDEA category under which children were receiving special education services as well as their primary concerns using the Child ABILITIES Index (Simeonsson & Bailey, 1991).

Children were all characterized as having mild/moderate delays or disabilities with most receiving services under the "Developmental Delay" category, as is typical of this age range. Children 7 and 8 in classroom 2-104, the specialized room for children who are deaf or hard of hearing, had hearing impairments –both wore cochlear implants. Additionally, child 12 (3-105) and child 16 (4-107) had been diagnosed with autism spectrum disorder (ASD), child 4 (1-103) had Down Syndrome, and child 13 (3-106) had a physical disability that required her to use a wheelchair or walker. Despite many children receiving services under the "Developmental Delay" category, the specific areas of concern that teachers identified varied greatly. They included intellectual functioning, behavior and social skills, communication, and gross or fine motor challenges. Finally, one typically-developing peer (child 3 in 1-101) and three of the focus children with developmental delays or disabilities (child 2 in 1-101; children 4 and 5 in 1-103)

were dual language learners –they were all in the co-teaching: public school case, and reflected the diversity of that district.

Table 4.

Focus Child Participant Demographics

Case	Participant	Classroom	Gender[a]	Race/ Ethnicity	Age[b]	Special Education Services Category	Primary Concerns
Co-Teaching: Public School	Child 1	1-101	M	African-American	4	Developmental Delay	Intellectual Functioning, Communication
	Child 2	1-101	M	Hispanic[c]	5.2	Speech or Language Impairment	Communication
	Child 3	1-101	F	Hispanic[c]	5	N/A	N/A
	Child 4	1-103	F	Hispanic[c]	3	Developmental Delay[d]	Intellectual Functioning, Behavior & Social Skills
	Child 5	1-103	M	Hispanic[c]	5	Developmental Delay	Intellectual Functioning, Communication
	Child 6	1-103	F	African-American	5	N/A	N/A
ECSE: Public School	Child 7	2-104	F	Asian	5.4	Hearing Impairment	Hearing[e]
	Child 8	2-104	F	Caucasian	4.4	Hearing Impairment	Hearing[e], Communication
	Child 9	2-104	F	Caucasian	4.6	N/A	N/A
	Child 10	3-105	F	African-American	5.7	N/A	N/A
	Child 11	3-105	M	Caucasian	4.3	Developmental Delay	Behavior & Social Skills, Communication
	Child 12	3-105	M	Caucasian	4.4	Autism Spectrum Disorder (ASD)	Communication, Behavior & Social Skills, Communication
	Child 13	3-106	F	Caucasian	4	Orthopedic Impairment	Limb Functioning & Muscle Tonicity
	Child 14	3-106	M	Caucasian	4	Developmental Delay	Intellectual Functioning, Communication

	Child 15	3-106	M	Mixed Race/ Hispanic	5	N/A	N/A
ECE: Community-Based Center	Child 16	4-107	M	Caucasian	4	Autism Spectrum Disorder (ASD)	Intellectual Functioning, Limb Functioning
	Child 17	4-107	M	Caucasian	4	N/A	N/A
	Child 18	4-107	M	Caucasian	5.6	N/A	N/A
	Child 19	4-108	M	Caucasian	4.2	Developmental Delay	Intellectual Functioning, Communication
	Child 20	4-108	M	Caucasian	3.8	N/A	N/A
	Child 21	4-108	F	Unknown	4 .5	N/A	N/A

Notes: [a]F =Female; M =Male; [b]Age in years and months (i.e., 5.7 = 5 years, 7 months) based on teachers' report; [c]Child is a Dual Language Learner; Spanish is home language; [d]Child was diagnosed with Down Syndrome; [e]Children wear cochlear implants

Data Collection

Guided by my research questions and conceptual framework, I utilized multiple methodological tools to investigate inclusive education quality and the potential influence of contextual features on the implementation of inclusive practices. Two structured observation measures were used to assess inclusive education quality –the Classroom Assessment Scoring System (CLASS), an evaluation of global quality, and the Inclusive Classroom Profile (ICP), a measure of inclusion quality. Additionally, I used the Code for Interactive Recording of Children's Learning Environments (CIRCLE), a child-specific ecobehavioral observation tool, to capture individual children's classroom experience. While CIRCLE is not a direct measure of classroom quality, it allowed more specific information about children's classroom experiences, including an understanding of whether individual children (with and without disabilities) experienced the classroom in similar or different ways from what was captured by classroom-level measures. During structured observations, qualitative field notes were written. However, for the analytic purposes, these were not used as a formal data source. Instead, they provided further context or clarification, as necessary (e.g., what materials children were playing with, any

adults present in the room other than teachers and paraprofessionals). Appendix A provides a full taxonomy of each of the structured observations.

After completing one round of the structured observations, I then conducted interviews with teachers and administrators to understand their perspectives on inclusive education in their context and to add to my understanding of unobserved classroom and program structures. After interviews, another round of CIRCLE observations were completed, followed by another round of interviews that also served as a final opportunity for member checking. I did not conduct a second round of CLASS and ICP observations based on the presumption that classroom quality would not change significantly over a short period of time in the absence of targeted feedback. Figure 4 illustrates the timeline for data collection across the seven classrooms. Table 5 identifies how the data sources aligned with research questions.

Figure 4. *Data Collection Timeline*

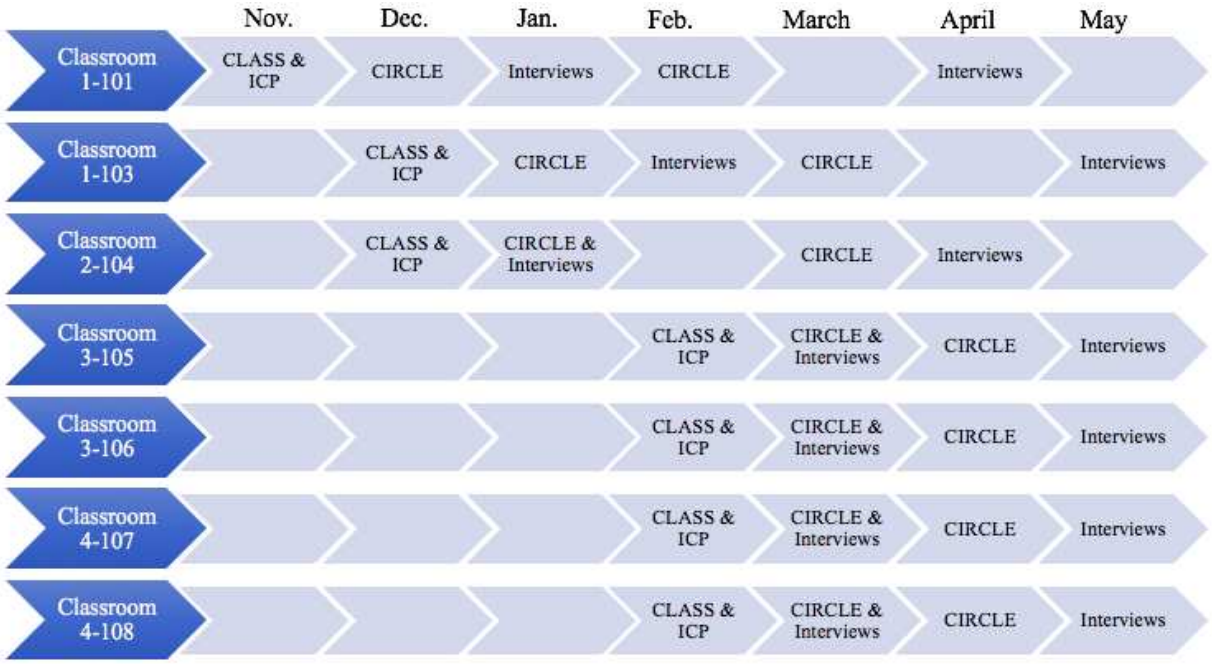


Table 5.

Data Sources by Research Questions

	CLASS	ICP	CIRCLE	Interviews
How do features of the organizational context influence the global quality of inclusive classrooms?	X		X	X
How do features of the organizational context influence the quality of children's inclusion?		X	X	X
How do features of the service delivery model influence the quality of children's inclusion?		X	X	X
How do features of the service delivery model influence the individualized learning experiences of children with disabilities?	X	X	X	X

Classroom Assessment Scoring System (CLASS). The CLASS is a widely used observational assessment tool that measures teacher-child interactions and environmental learning supports as a representation of global classroom quality. It has been established as valid and reliable in a variety of early childhood settings (e.g., Downer, López, Grimm, Hamagami, Pianta, & Howes, 2012; LaParo, Pianta, & Stuhlman, 2004). I attended a CLASS certification course in September 2017 and completed the required reliability test to earn my certification in October 2017.

The CLASS is organized around three domains –emotional support, classroom organization, and instructional support. Emotional support includes four dimensions measuring positive classroom climate, negative classroom climate, teacher sensitivity, and regard for child perspectives. The classroom organization domain includes three dimensions assessing behavior management, classroom productivity (i.e., provision of activities), and instructional learning formats. Finally, the instructional support domain includes three dimensions measuring concept development, quality of teacher feedback, and language modeling. To complete the CLASS, a

classroom is scored on each dimension on a scale of low (1-2), middle, (3-5), or high (6-7) quality. The dimension scores within each of the three domains are then averaged to produce a domain score.

CLASS observations can be conducted in-person or by scoring videos (Pianta, La Paro, & Hamre, 2008). In the present study, CLASS observations were completed by videotaping classrooms. CLASS scoring was based on four 20-minute observation cycles, in line with recommended procedures (Pianta et al., 2008). Therefore, CLASS scores were based on a total of one hour and twenty minutes of classroom observations for each class. CLASS videos and scoring captured all major activities in each classroom, including large group (or circle time), small group (or the classroom-specific replacement for small groups), and free play/centers time. Additionally, I conducted CLASS videotaping during other classroom-specific instructional periods. These additional classroom-specific activities included classroom 1-101 and 1-103's dialogic reading activity, classroom 2-104's breakfast and opening discussion, classroom 3-105's arrival work period, and classroom 3-106's literacy group. The teachers all identified these activities as instructional periods. With the exception of classroom 2-104, meal and snack times were generally not included in CLASS videos, though videos sometimes captured transition into and out of meal times to ensure a full 20-minute cycle. CLASS observation cycles were captured over two to three school days and typically took place within one week. The one exception was classroom 4-108 – there was a full week of school between CLASS cycles two and three because one of the teachers was on vacation. Therefore, that week would not have been representative of the typical classroom context.

Inclusive Classroom Profile (ICP). The Inclusive Classroom Profile (ICP) was used to measure inclusion quality within the classroom. The ICP was recently developed to measure the

presence of classroom practices and adaptations that support high-quality inclusive education. It is conceptually based on DEC and NAEYC's (2009) definition of early childhood inclusion, and particularly focuses on issues of *access* and *participation* due to its classroom-level focus. Additionally, scoring the ICP is based on the general experience of all children with identified disabilities in the classroom. Although the ICP is primarily a structured observational tool, it also provides interview questions and documentation review guidelines to score some items (Soukouku, 2016). The ICP has some evidence supporting its reliability and validity (Soukakou, 2012; Soukakou et al., 2014) and is seen as a promising tool that could be used in conjunction with global quality measures (Odom et al., 2011). At the time of the study, the ICP did not have a certification training that was being offered, but it was commercially available for research purposes through Brookes Publishing. To prepare for scoring the ICP, I completed the online tutorials available through the Frank-Porter Graham Child Development Institute and read the associated manual.

The ICP consists of 11 items reflecting essential inclusive classroom practices, including:

1. Adaptations of Space, Materials, and Equipment
2. Adult Involvement in Peer Interactions
3. Adults' Guidance of Children's Free-Choice Activities and Play
4. Conflict Resolution
5. Membership
6. Relationships between Adults and Children
7. Support for Communication
8. Adaptations of Group Activities
9. Transitions between Activities

10. Feedback

11. Family-Professional Partnerships

12. Monitoring Children's Learning

Items are rated on a scale from 1 ("inadequate" quality) to 7 ("excellent" quality) based on accompanying quality indicators. Indicators under a score of 3 represent "minimal" quality and indicators under a score of 5 represent "good" quality. Higher scores require classrooms to *not* possess low-quality indicators (indicators for a score of 1, "inadequate" quality).

Classrooms receive a score for each item and then an overall score that is the average of the 12 items. The Family-Professional Partnerships and Monitoring Children's Learning items are completely scored based on teacher interviews and documentation review. Three items are also scored based on a combination of observation and interview –Conflict Resolution, Support for Communication, and Adaptations of Group Activities. In the present study, I asked teachers the necessary ICP questions during their first interview. If there were two lead teachers (i.e., the co-teaching classrooms and the ECE community-based classrooms), I split the ICP questions between the two teachers. I obtained necessary documents from teachers and administrators. However, it was not possible for me to see some types of documentation due to confidentiality restrictions (i.e., children's IEPs, examples of communication with families regarding children's progress). In those cases, I asked teachers to describe the related requirements or procedures in place. Additionally, all teachers were able to tell me where the physical and electronic copies of children's IEPs and assessments were stored (an alternative to seeing the documentation that the ICP allows).

Administering the ICP requires a minimum of 2.5 hours of observation in addition to the time it takes to interview teachers and review documentation. I scored the ICP from the videos

used for the CLASS plus at least one day of additional general classroom observation before starting CIRCLE observations. Thus, ICP scores were based on three to four days of classroom observations over approximately one week (classroom 4-108 was again the exception to this due to teacher vacation). During observations for the ICP that were not videotaped, I took extensive classroom notes using the ICP scoring sheets as a guide, as is recommended (Soukakou, 2016). Again, observations reflected all major instructional periods and free play/centers times, including transitions into and out of activities and classroom-specific instructional routines.

Code for Interactive Recording of Children's Learning Environments (CIRCLE). CIRCLE is an ecobehavioral observation tool that measures teacher and child interactions across classroom activities and routines (Atwater, Reynolds, Schiefelbusch, Lee, Montagna, & Tapia, 2012). CIRCLE describes processes within the classroom that directly impact individual children's early language, understanding of academic concepts, and social skills while also recording how children are engaging in and responding to individuals and objects in their environment (its ecobehavioral nature). CIRCLE has been identified as a tool that can measure classroom context and quality as well as children's individual support needs and response to intervention (Greenwood, Abbott, Beecher, Atwater, & Peterson, 2017; Greenwood et al., 2012). Thus, overtime it can identify changes in children's behavior or skills that can be linked to certain classroom processes and interactions. In the present study, the child participants in each classroom were the designated focus children for CIRCLE observations. CIRCLE observations were conducted after CLASS and ICP observations, though they always took place on a different day. I was originally trained in CIRCLE during the summer of 2015 and received a booster training and reliability check in October 2017.

CIRCLE uses momentary time sampling (15 second intervals) to alternate recording of activities and behaviors under three categories: classroom context, teacher behavior, child behavior. Within the classroom context, observers identify the activity structure (e.g., centers, large group, small group), academic content (e.g., language and literacy, science, numeracy), and language of instruction (e.g., English, Spanish, blended, other). Under the teacher category, observers record the nature of the teacher's talk (e.g., feedback, open- and closed-ended questions), recipient of teacher talk, literacy focus, and the teacher's proximity to the focus child. Note that although these variables refer to the "teacher," they represented whatever adult the child was interacting with during the observation period, including paraprofessionals. Within the child category, observers record social behavior (e.g., words, communicative gestures, social attention), social partner (e.g., teacher, other professional, other adult, individual child), and engagement (e.g., writing, reading, pretend play, non-academic manipulation). Within the child variables, teachers and paraprofessionals were differentiated with the social partner code. Paraprofessionals were coded as "other professional." Student workers in classrooms 4-107 and 4-108 were coded as "other adults." Information about the specific variables I analyzed is discussed in the data analysis section of this chapter.

CIRCLE observations take place in waves of 15 minutes. During each round of CIRCLE observations, I observed children for four waves, or one hour, meaning over the course of the study, each child was observed for two hours (8 waves). To align with the CLASS and ICP observations, I observed children twice during each of the major instructional periods in their classroom and during free play/centers. Specifically, children in classrooms 1-101 and 1-103 (co-teaching: public school) were observed during large group, small group, centers, and their dialogic reading activity. Children in classroom 2-104 were observed during their

breakfast/arrival discussion activity, large group, project time (replacement for small group), and centers. Children in classroom 3-106 were observed during their arrival work periods, free play, large group, and academic center (replacement for small group). Children in classroom 3-106 were observed during their free play, circle time, literacy group (the large group story time), and small group. Unfortunately, because the community-based classrooms' replacement for small group was an optional teacher-led center, I was not always able to observe the child during that activity. If a child was not able to be observed in the teacher-led center during their two free choice/play observations, I observed them during large group, another teacher-led activity, for their final wave. Additionally, because the community-based classrooms were full-day classrooms, I split children's CIRCLE waves between morning and afternoon activities. Thus, each child in classrooms 4-107 and 4-108 was observed during their morning large group, morning free play (including the teacher-led center if possible), afternoon large group, and afternoon free play.

Interobserver agreement (IOA) for CIRCLE was conducted to ensure its reliable use by having a child simultaneously observed by myself and another trained CIRCLE observer. IOA was collected on 30% of observations (12.75 hours total). IOA was assessed across both rounds of CIRCLE observations and all three models of inclusion. However, IOA could not be assessed in classrooms 2-104 and 3-106 due to limitations on the number of additional people they were able to have in the room. In the classrooms that did allow IOA to be conducted, IOA was distributed across all focus children in that classroom. Therefore, I was able to get a variety of children represented within IOA assessment. IOA was calculated for each variable using the formula: Percent Agreement = [Number of Agreements/Number of Disagreements +

Agreements] x 100. For each CIRCLE variable, percent agreement ranged from 92.5% (child engagement) to 99.9% (activity language). Overall agreement was 97.5%.

Interviews. Semi-structured interviews with teachers and school district administrators were conducted in a "tree and branch" structure (Rubin & Rubin, 2005, p. 45). That is, both rounds of interviews had distinct sections with structured questions asked of all participants (i.e., pre-determined) followed by probing and follow-up questions that were based on classroom's context or participants' responses (i.e., exploratory, responsive questions). There were five major sections for the phase one interviews: teacher/administrator background, general knowledge/beliefs about inclusive education, classroom/model-specific implementation of inclusive education, definition of inclusive education translated to practice (based on the DEC and NAEYC [2009] definition of early childhood inclusion), questions based on observations, and ICP interview questions (teachers only). There were four major sections for phase two interviews: teacher/administrator and additional classroom background information, general knowledge/beliefs about inclusive education, definition of inclusive education translated to practice (again, based on the DEC and NAEYC [2009] definition of early childhood inclusion), and questions based on observations and initial analysis. Appendix B provides the general interview guides for teachers and administrators, including the ICP questions and example questions based on observations or initial analysis. Note that these guides represent the generic protocol that was then individualized based on previous data collection and classroom- or program-specific features (e.g., Head Start standards and requirements for Program 1).

During the second interview, teachers also completed the Child ABILITIES Index during the second interview (Simeonsson & Bailey, 1991). The ABILITIES Index requires teachers to rate children on a scale of 1 (Normal) to 6 (Extreme/Profound disability) across eight areas of

development: Hearing, Behavior & Social Skills, Intellectual Functioning, Limbs, Intentional Communication, Muscle Tone, Vision, and Body Structural Status. Teachers also identified the child's primary disability (the IDEA category under which they're receiving services) and overall health. The ABILITIES Index was not a formal assessment; instead, it provided common language to generally describe children's area(s) of needs.

Teacher and administrator interviews took place after each phase of structured observations, generally resulting in two interviews per teacher and administrator. Unfortunately, I was only able to interview the administrator for Program 2 (Administer 2, classroom 2-104) once. That interview took place after the two rounds of structured observations so it discussed observations throughout the study. In total, I conducted 7 administrator interviews and 22 teacher interviews across the entire study period.

Interviews served multiple functions. First, the ICP requires a teacher interview to complete item scoring. Additionally, interviews with administrators included questions drawn from the *Evaluating Quality in the Inclusive Preschool Program* Administrator checklist to assess institutional supports for inclusive education (Wolery & Odom, 2000). The ICP is a classroom-oriented tool that almost solely assesses *access* and *participation*; there is little evaluation of program-level structures or *institutional supports* (e.g., professional development, program philosophies, staff collaboration). Therefore, interviews supplemented observational measures to characterize the inclusion quality for classrooms based on my conceptual framework. Additionally, interviews with teachers and administrators provided practitioner perspectives on key features of high-quality inclusive education, context-specific supports and challenges for inclusion, and experiences using evidence-based inclusive practices, both observed and unobserved. Thus, interviews were central to understanding the influence of

context on children's inclusive experiences. Finally, interviews, particularly phase two interviews, served as an opportunity to member check initial findings and interpretations so participants could confirm accuracy, clarify, and add information (Birt, Scott, Cavers, Campbell, & Walter, 2016; Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005).

Given the iterative nature of the study, I prepared for both phase one and two interviews by reviewing previous data and conducting some initial analyses. Before conducting phase one interviews with teachers, I watched at least two of the classroom's CLASS/ICP videos for an initial understanding of the classroom's areas of quality and/or challenges and reviewed written field notes. Phase one administrator interviews took place after phase one teacher interviews for programs 1, 3, and 4. Therefore, I also reviewed my teacher interview notes before administrator interviews (the interviews had not yet been transcribed). In some cases, I asked administrators about teacher responses that I was interested in learning more about. For example, classroom 1-101 and 1-103 teachers told me about the district's broad requirements for dialogic reading during their first interview, but upon reviewing my notes, I was curious about how the district monitored or supported teachers' dialogic reading practices. Therefore, I asked the program administrator about the available supports and requirements for dialogic reading activities. Her response in conjunction with the teachers' responses provided me with a clear understanding of the program-wide expectations for dialogic reading, and how it reflected instructional supports related to curriculum modifications and accommodations. Phase one interviews lasted approximately 45 minutes to 1 ½ hours. Interviews were longer for teachers who taught alone because they had to answer all of the ICP questions rather than having the questions split between co-teachers.

Phase two interviews took place after the second round of CIRCLE observations. I prepared for phase two interviews by scoring the CLASS and ICP videos, conducting initial within-case analysis of CIRCLE data, reviewing written field notes, and reading transcriptions of the phase one interviews to identify additional follow-up questions and initial themes (Saldaña, 2013). During initial analysis of the CIRCLE data before phase two interviews, I specifically looked at the frequency and content of teacher's talk and conducted initial comparisons of the experiences of children with and without disabilities (i.e., social behavior, social partners, and types of engagement). Phase two interviews lasted approximately 30 to 45 minutes.

Data collection summary. In sum, I used two structured classroom observations –the CLASS and the ICP –to assess classrooms' inclusive education quality. I also conducted child-specific observations using the CIRCLE to better understand children's individual experiences in inclusive classrooms. Finally, teacher and administrator interviews supplemented my understanding of the classrooms' quality and provided information about the mechanisms through which contextual features may influence both inclusive education quality and children's individual classroom experiences. Together, these tools provided data that characterized the cases at each of the three levels of analysis –child, classroom, and program.

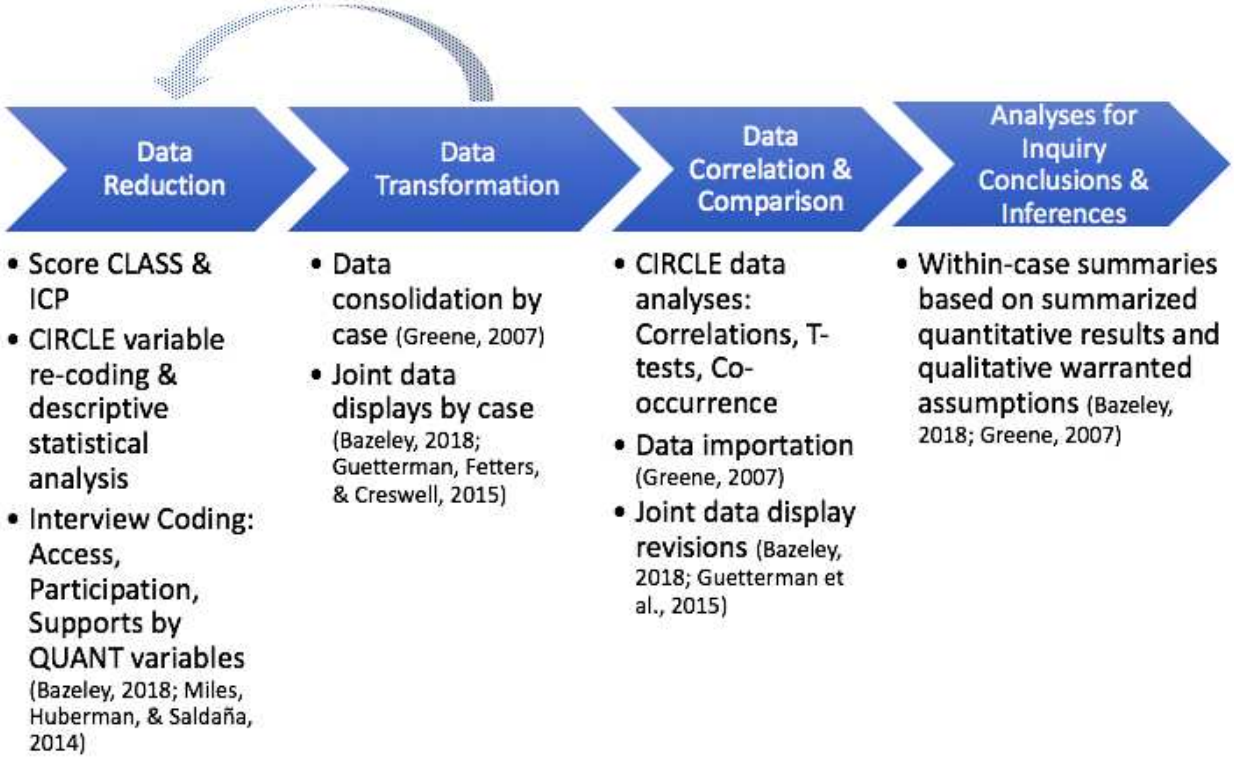
Data Analysis

Because of the case study method of inquiry, data analysis was divided into two stages: within-case analysis and cross-case analysis. The goals of within-case analysis were to 1) identify the inclusive education quality across the classrooms within a case (based primarily on CLASS and ICP data); 2) characterize children's individualized experiences across the classrooms within a case (based on CIRCLE data); and 3) identify classroom and program features that were uniquely influencing inclusive education quality and practice (based on

teacher and administrator interviews). The product of within-case analysis was a collection of mixed methods joint data display matrices and case summaries aligned with the three core components of inclusive education (access, participation, supports). Within-case analysis yielded an in-depth understanding of the implementation of inclusive education within each inclusion model. Integrating different methods within cases before conducting cross-case analysis can help retain close connection to the context within which data were collected (Bazeley, 2018). After within-case analysis, the mixed methods matrices and case summaries were then analyzed across cases (cross-case analysis) to find patterns that answered my research questions (Bazeley, 2018). In the following sections, I will individually explain within-case and cross-case analysis procedures. However, it is important to note that this was an iterative process in which cross-case analysis sometimes warranted additional within-case analysis to further reveal patterns. As a reminder, CIRCLE data refers to "teacher" variables (i.e., teacher talk, recipient of talk, literacy instruction, teacher involvement), but they actually reflected whatever classroom adult the child was interacting with, including paraprofessionals.

Within-case analysis. Within-case case analysis followed four steps of mixed methods data analysis, as outlined by Greene (2007). Steps included 1) data reduction, 2) data transformation, 3) data correlation and comparison, and 4) analyses for inquiry conclusions and inferences. Figure 5 illustrates each of these steps and the analytic strategies that were used.

Figure 5. *Within-Case Analysis Process*



Data reduction. During data reduction, raw data (i.e., CLASS/ICP videos and ICP observation notes; CIRCLE raw data describing classroom, teacher, and child variables; interview transcripts) were analyzed and reduced to descriptive forms (Greene, 2007). Video analysis to obtain CLASS (global quality) and ICP (inclusion quality) scores took place before the second interview to support the development of interview questions.

In preparation for CIRCLE data analysis, some variables were re-coded. The Literacy Involvement variable was re-coded to reflect the presence or absence of reading or literacy instruction rather than different types of literacy instruction. Additionally, the Academic Content variable was similarly re-coded into a binary variable to reflect the presence of academic content or none. This was done because a specific type of literacy or academic content was not a focus of the present study. Within the Social Behavior variable, Words-English and Words-Other were

combined into a single variable, Social Behavior –Words. This was done because children very rarely used another language, and those who did only used it with other children. According to teachers, all children in the study who were DLLs were able to adequately communicate in both English and their home language (i.e., Spanish). Therefore, language was never a barrier to children's social interactions. Finally, within the Classroom Engagement variable, Academic Response –Manipulation and Academic Response –Verbal Response of Gesture were examined both separately and together as a single Academic Response variable. This was done to obtain a general sense of children's total active academic engagement while still being able to characterize said engagement.

After variable re-coding, CIRCLE data was then analyzed to yield summative frequencies (percentage of waves) and descriptive statistics (mean, standard deviation). Based on the goals and conceptual framework of the present study, descriptive statistics and frequencies were calculated for activity structure (centers, story time, large group, small group), academic content (academic content or none) and the following teacher variables: Teacher Talk (negative feedback; expand, repeat; extend; positive feedback, open-ended question, closed-ended question, request for action; general conversation; none), Recipient of Talk (focus child, child's group, none), Literacy Instruction (literacy instruction; reading; none), and Teacher Involvement (close proximity to child; general supervision). Descriptive statistics and frequencies were also calculated for the following child variables: Child Social Behavior (words –English or other; communicative gesture; social attention), Child Social Partner (teacher; other professional; individual child; none), and Child Classroom Engagement (writing, academic response – manipulation or communication; academic attention; pretend play; non-academic manipulation; non-academic attention to materials; none). Note that while CLASS and ICP were scored

individually by classroom, CIRCLE data was immediately combined across classrooms within a case due to the small number of students observed in each classroom.

Due to infrequency, the Teacher variable, "expand, repeat, and extend" was dropped from further analysis –the low frequencies would not allow statistical correlations with other variables. Additionally, no further analyses were conducted to further characterize classrooms' Activity Structures. While activity structure is a part of children's environment, it was not a primary focus of the present study. Descriptive statistics provided an understanding of how classrooms divided their daily schedule. I focused subsequent analyses on interactions between teachers and children, between children, and between children and objects across all activity structures (see Figure 1).

In preparation for qualitative data analysis, quantitative data variables were categorized according to the three core components of inclusive education (access, participation, supports) to form codes that would be applied to the interview transcripts (see Appendix C). In addition to the codes derived from quantitative measures, there were three codes that captured other information that pertained to the three core components of inclusive education (i.e., access –other, participation –other, supports –other) and capture teacher and administrator responses where they specifically referenced the type of inclusion model they operated within (other –inclusion model). Additionally, I intentionally looked for, and coded, disconfirming evidence in the form of classroom or program characteristics that operated differently from other classrooms within a case (i.e., access –disconfirming evidence, participation –disconfirming evidence, supports –disconfirming evidence) (Brantlinger et al., 2005; Ravich & Riggan, 2012). A coding system grounded in the quantitative data collected linked the interview data to my conceptual framework

and helped combine the quantitative and qualitative data starting with initial analysis (Bazeley, 2018).

Next, interview transcripts were deductively coded using the developed coding system (Bazeley, 2018; Miles, Huberman, & Saldaña, 2014). All teacher and administrator interviews from classrooms within a case were analyzed together, though the codes noting disconfirming evidence allowed me to identify divergence within cases. At the end of the data reduction stage, each classroom had CLASS dimension and domain scores, and ICP item and overall quality scores. Additionally, each case had descriptive statistics that characterized individual children's classroom experiences (from CIRCLE data) and coded interviews that began to identify underlying mechanisms influencing inclusive education.

Data transformation. During data transformation, data is consolidated in preparation for higher-order analyses, including standardizing quantitative data and identifying critical qualitative narratives or incidents (Greene, 2007). During this step, I further consolidated quantitative data within the cases and developed a joint data display integrating quantitative and qualitative data.

First, I examined CLASS and ICP scores across classrooms within cases to identify substantial differences in quality. Within the ECSE: Public School and ECE: Community-Based Center cases, classrooms differed fairly extensively in the Language Modeling dimension such that the within-case differences were greater than differences between cases. Consequently, I did not consider the Language Modeling domain in cross-case analysis. No other significant within-case differences were found. Therefore, I averaged scores across classrooms within a case for the other CLASS dimensions and the ICP domain and total scores. This yielded average CLASS dimension and domain scores, and ICP item and total quality scores for each case. Because

CIRCLE descriptive statistics already represented the entire case, no further data transformation was needed.

Once all data sources had been coded and transformed to represent all classrooms in each case, I then developed joint data displays to further organize and integrate quantitative data with interview data (Bazeley, 2018; Creswell & Clark, 2011; Guetterman, Fetters, & Creswell, 2015). Note that data displays did not reflect all of the qualitative data that was coded or all statistical results. Instead, I picked out particularly salient examples of data based on the study's conceptual framework and initial findings (Bazeley, 2018). Quantitative examples of data that were viewed as particularly salient were those that a) represented the case's inclusive education quality, b) illustrated the instructional content and processes, c) characterized teacher-child and child-child interactions, and d) addressed differences between children with and without disabilities within the case. Salient qualitative data was that which aligned with the quantitative results by either expanding on them or offering a potential underlying mechanism. The three components of inclusive education (access, participation, supports) served as dimensions around which the data was organized (Guetterman et al., 2015), creating a 4 x 3 matrix.

Data displays were developed at this point in the data analysis process (rather than after more statistical analysis) to cultivate inferences about classroom and program features that influence inclusive education quality and to start to explore potential areas of similarity and divergence across cases at each unit of analysis. Additionally, it allowed me to identify where I needed more information or evidence, including helping me determine future statistical analyses. Thus, the iterative nature of Greene's (2007) mixed methods data analysis procedure was important as I sometimes went back to the raw data to fill in gaps in understanding, and I determined some aspects of future analysis based on initial findings.

Data correlation and comparison. During the data correlation and comparison phase, additional quantitative analyses were conducted to understand the relationships between activity context, teacher behavior, and child experiences within each case. First, I conducted independent samples T-tests with children's disability status (a dummy variable representing whether the child had an identified delay/disability or not) as the grouping factor and the following as the test variables: a) Recipient of Teacher Talk (i.e., focus child only, children's group, none), and b) Teacher Involvement (i.e., close proximity, general supervision, none), and c) Teacher Talk (i.e., content of teacher talk –negative feedback; expand, repeat; extend; positive feedback, open-ended question, closed-ended question, request for action; general conversation). For analyses with Teacher Talk and child disability status, I only included teacher talk when the teacher was speaking to the focus child only (not when the teacher was speaking to the child's group). This was done because it could not be assumed that the individual focus child's presence in the group was shaping the teacher's talk; whereas, when the teacher was only talking to the child, it could be presumed that the teacher could be shaping her speech based on the child. Finally, I ran a series of independent samples T-tests with disability status as the grouping factor and the type of Teacher Talk (total amount of each type of talk) and Teacher Involvement (proximity of a teacher) as the dependent variables. This allowed me to see possible differences between teacher involvement (i.e., proximity), and the amounts and type of teacher talk received by children with and without disabilities.

I was also interested in examining children's engagement, social behavior, and peer relations within each case. I ran a series of independent samples t-tests with disability status as the factor and a) Child Engagement variables (i.e., writing; academic response –manipulation or communication; academic attention; pretend play; non-academic manipulation; non-academic

attention to materials; none of those listed), b) Child Social Behavior (i.e., Words –English or Other, Communicative Gesture, Social Attention), and c) Child Partners (i.e., teacher, other professional, child, none). These analyses allowed me to better characterize how children were actively participating in their environment and if there were differences in children's participation based on their disability status.

Next, I explored the relationship between adults' behaviors and children's classroom engagement and participation, reflecting the ecobehavioral nature of this data collection method and the bioecological proximal processes children were experiencing. First, I examined the correlation between select Teacher Talk variables (i.e., feedback [positive or negative feedback composite variable], open-ended questions, closed-ended questions, request for action, general conversation), and a) Children's Social Behavior –Social Attention; b) Children's Social Behavior –Words (English or other); c) Children's Classroom Engagement –Academic Attention and d) Children's Classroom Engagement –Academic Response. These particular variables were selected to illustrate which types of teacher talk were more consistently correlated with children's academic engagement and participation.

Next, I conducted co-occurrence analyses to examine teacher and child behaviors when teachers presented academic content (academic content was a classroom context variable). Because of the structure of CIRCLE data, I was able to isolate cycles when academic content was presented. I then looked at the frequencies of certain types of teacher talk (i.e., positive feedback, negative feedback, open-ended questions, request for action) and child academic engagement (i.e., academic attention, academic response). This provided a sense of how teachers presented academic content and children's engagement when academic content was presented.

After completing the above correlations and co-occurrence analyses, I then split the sample to repeat those analyses for children with disabilities only. This allowed me to see the types of teacher talk that were most academically beneficial for all children and then for children with disabilities, specifically. I did not limit these correlations to teacher talk directed towards the focus child only, as I did when exploring whether teacher talk received by children with and without disabilities differed. In these correlations, I was not looking at how teachers potentially shaped their talk based on the child disability status, but rather how children shaped their engagement behavior based on the teachers' talk (during CIRCLE data collection, child engagement variables were recorded immediately after teacher variables). Moreover, examining all teacher talk in these correlations was necessary to capture teacher talk and child engagement that took place during large group instructional activities (e.g., circle, story time) where teachers were typically talking to the child's entire group –otherwise, these activities would have been excluded from all analyses of teacher talk. Based on the above correlation results, I compared the most beneficial types of teacher talk (based on children's engagement) with the frequencies I previously calculated to examine the relative frequency of the types of teacher talk that were most beneficial for children's engagement and participation.

Finally, for each case, I looked at the correlation between Teacher Involvement and children's social partner, and the correlation between Teacher Talk (whether the teacher was talking or not) and children's social partner. This was done for all children and then children with and without disabilities separately. I hypothesized that an adults' close presence would potentially influence children's peer interactions (child social partner). Additionally, this relationship could potentially be different for children with and without disabilities.

After conducting the above statistical analyses, I added them to the joint displays. Based on the results of the correlational statistical analyses, I then revisited the coded qualitative data to add to, update, and re-organize the representative data in the joint display. For example, CIRCLE data analysis revealed that children with disabilities in the Co-teaching: Public school classrooms were less likely to be coded as talking (Child Social Behavior –Words). Therefore, I examined the qualitative excerpts coded as "Language/Communication Support" (codes derived from the inclusion of these supports in the CLASS and ICP) to see if teachers talked about how they support children's oral language skills, particularly for children with disabilities. This process reflected data importation whereby midstream (i.e., initial) results from the analysis of quantitative data informed the assessment of patterns in qualitative data (Greene, 2007). Such analysis across types of data is especially beneficial when mixed methods research is implemented with an initiation purpose (Greene, 2007; Li, Marquart, & Zercher, 2000). The within-case data displays for each case can be seen in Appendix D. After the data displays had been edited to reflect data correlation and comparison, I moved to the final step of within-case analysis.

Analyses for inquiry conclusions and inferences. This final step of analysis was intended to directly generate study interferences or conclusions (Greene, 2007). As the final step of within-case analysis, I drew from the joint data displays and additional coded qualitative data to develop case summaries, or "integrated compilations" (Bazeley, 2018, p. 139) that fully characterized what was known about the cases in relation to the research questions (Yin, 2014). That is, I used this step to, in part, answer the research questions for each case. I developed evidence-supported inferences regarding the influence of the case-specific contextual features on

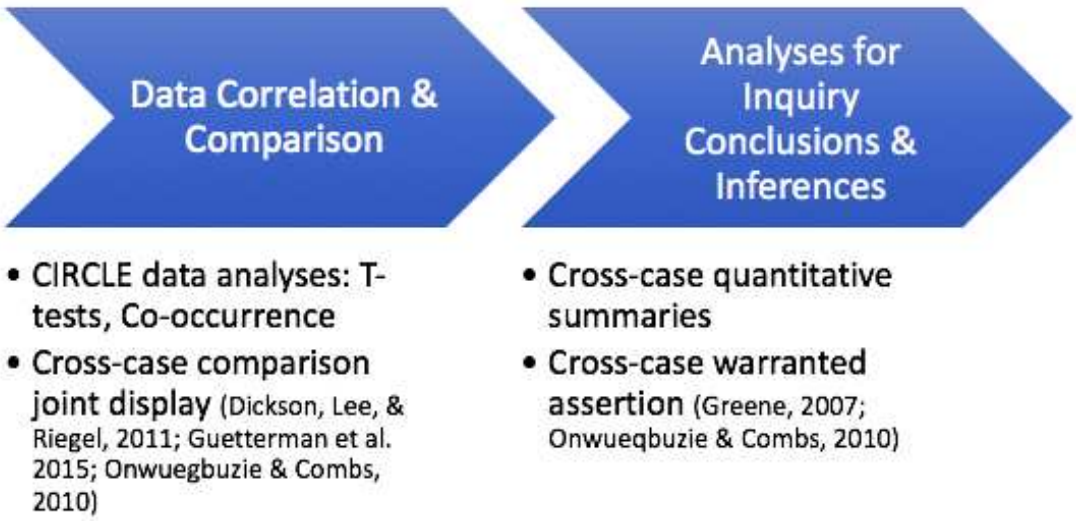
the classrooms' global quality, inclusion quality, and individualized child experiences. These inferences became themes within the case summaries.

Inferences were developed using three strategies. First, I summarized quantitative data to characterize the inclusive education quality of the classrooms within the case using both statistical results and narrative summary (e.g., combined CLASS dimension scores with their descriptors of associated practices). Then, after each quantitative summary, I utilized a warranted assertion method to add qualitative themes to those results. In a warranted assertion, a proposition is stated followed by the raw data (i.e., direct quotes) and patterns that support that assertion (Erickson, 1986; Greene, 2007). Qualitative warranted assertions further characterized the cases' inclusive education quality and proposed mechanisms underlying said findings. Finally, I specifically drew inferences from the integration of quantitative and qualitative data within the joint data displays. To do this, I noted patterns between multiple types of data, clustered data around salient inclusive practices or structures (e.g., examining all of the quantitative and qualitative data regarding feedback), and checked for rival explanations of developing inferences (Miles et al., 2014). In developing the case summaries, I specifically looked for consistencies and inconsistencies, conflicts, and disconfirming evidence between the different data sources to guide theme revisions (Creswell & Clark, 2011). In this way, both statistical and experiential (qualitative) data was valued (Bronfenbrenner & Morris, 2006). Importantly, developing the case summaries served as another opportunity to go back to coded and raw data to add evidence and clarity, and to identify opportunities for further analysis (Miles et al., 2014).

Cross-case analysis. Because of the analyses completed during within-case analysis, cross-case analysis consisted of steps three (data correlation and comparison) and four (analyses

for inquiry conclusions and inferences) in the mixed methods data analysis process (Greene, 2007). During cross-case analysis, within-case matrices and case summaries were 1) compared to identify differences in patterns of inclusive education quality and children's individualized experiences, and 2) analyzed to support developing inferences regarding relationships between contextual features and inclusive education quality and individualized experiences. Although within-case matrices were used to develop the case summaries, they were also used as an additional data set for cross-case analysis to facilitate the development of cross-case joint displays (Greene, 2007; Onwuegbuzie & Combs, 2010). Specifically, during the process of cross-case data correlation (step three), I treated the individual case joint displays as a mixed methods data set to further examine cross-case patterns. Additionally, I conducted additional statistical analyses of CIRCLE data to directly examine differences in children's individualized experiences across the inclusion models. Figure 6 illustrates each of the cross-case analysis steps and the analytic strategies that were used.

Figure 6. *Cross-Case Analysis Process*



Data correlation and comparison. During cross-case data correlation and comparison, I looked for differences across the cases' within-case patterns, conducted T-tests with CIRCLE data whereby the inclusion model (case) was the independent variable, conducted CIRCLE co-occurrence analyses, and developed a cross-case joint data display (Dickson, Lee, & Riegel, 2011; Guetterman et al., 2015; Onwuegbuzie & Combs, 2010).

Cross-case CIRCLE analysis involved first looking for different patterns in the within-case analyses. For example, I examined whether the three cases differed in the results of the disability status x Teacher Talk and Child Engagement t-tests, and teachers' behaviors when academic content was presented. This gave me an initial understanding of possible cross-case differences in how children with and without disabilities differentially experienced their contexts.

Next, I conducted a series of T-tests to see if the cases differed in Academic Content (i.e., any academic content or none), the types of Teacher Talk (i.e., Feedback, Open-Ended Questions, Closed-Ended Questions, Request for Action, General Conversation), Literacy Instruction (i.e., literacy instruction, reading, or none), Child Social Behavior (i.e., words –other or English; communicative gesture; social attention), and Child Classroom Engagement (i.e., academic response –manipulation or communication; academic attention; pretend play; non-academic manipulation; non-academic attention to materials; none of those listed) that all children experienced –the inclusion model/case was the fixed factor for these analyses. These variables were chosen because they reflected how the teachers' behaviors (and thus, children's access to learning activities) might have been different across cases and how children's participation with teachers and peers might have differed.

Next, I selected only children with disabilities in the data set to run a final series of t-test analyses. I conducted a series of T-tests with the inclusion model as the group factor and the following variables as the dependent variables: Academic Content, types of Teacher Talk, Literacy Instruction, Child Social Behavior, Child Social Partner, and Child Classroom Engagement. This allowed me to see if children with disabilities, specifically, had access to different learning opportunities and interacted with teachers and peers in different ways across the three cases.

Finally, similar to the within-case analyses, I conducted co-occurrence analysis to isolate teacher and child behaviors when academic content was presented. After selecting waves when academic content was present, I conducted a series of independent samples t-tests with the inclusion model as the group factor to identify differences in teachers' talk (i.e., negative feedback, positive feedback, open-ended questions, closed-ended questions, request for action) and then to identify differences in child academic engagement (i.e., academic attention, academic response). After conducting these analyses for all focus children, I then repeated them for children with disabilities only.

A cross-case display was particularly important for final analyses answering the research questions (Onwuegbuzie & Combs, 2010). To develop a cross-case joint display, I created a 3 x 4 matrix where each column was a different case and each row was one of the four research questions; the content of matrix cells were data that suggested potential themes to answer the research questions. Data displays were structured around the research questions because the focus of cross-case analysis is to examine the actual phenomenon being studied in ways that facilitate the development of final inferences (Yin, 2014). The content of the cross-case display was generated from the within-case summaries, within-case joint data display, and cross-case

CIRCLE analysis. The cross-case joint display can be seen in Appendix E. Again, the joint display did not represent all of the data, but rather critical examples (Bazeley, 2018). In cross-case analysis, critical examples were based on cross-case quantitative analyses where cases showed the most differences (e.g., descriptively comparing CLASS and ICP scores, T-test CIRCLE analyses where inclusion model was the grouping factor) and qualitative data that had previously been identified as illustrations of mechanisms potentially underlying to quantitative data. Developing the cross-case data display facilitated data consolidation to identify emergent themes that were directly relevant to the research questions (Onwueqbuzie & Combs, 2010; Teddie & Tashakkori, 2009). By focusing on differences between cases *after* developing in-depth conceptually-guided knowledge of the cases, the final analysis could more systematically draw conclusions to answer the research questions (Bazeley, 2018).

Analyses for inquiry conclusions and inferences. Final study conclusions were developed by synthesizing the cross-case quantitative results (e.g., cross-case T-tests) and engaging in a process of warranted assertions to develop "meta-inferences" that answer the research questions (Greene, 2007; Onwueqbuzie & Combs, 2010, p. 415). The warranted assertions process was similar to that of the within-case process, except that I systematically compared cases using the cross-case joint data display and the case summaries. I developed themes (the "meta-inferences") that answered the research questions by first examining differences in quantitative data across the cases. As a reminder, quantitative data established whether a difference between inclusion models was present. Qualitative data patterns then illustrated the potential mechanisms underlying quantitative differences (e.g., differences in perspectives, practices, institutional structures). I also looked for data patterns in which different processes across inclusion models (i.e., qualitative patterns) were associated with similar levels

of quality or individual child experiences (i.e., quantitative patterns). I determined a feature or process was unique to a certain organizational context by looking at differences between the public school models (both co-teaching and ECSE teacher) and the community-based center. I determined a feature or process was unique to a certain service delivery model by examining differences between the three service delivery models represented by the three cases (co-teaching, ECSE teacher, and ECE teachers).

During cross-case analysis, I continued to closely look for heterogeneity within cases to be able to identify when differences were due to classroom- or program-level practices, rather than processes associated with an inclusion model. For example, technology use, an aspect of access (DEC/NAEYC, 2009), varied greatly between inclusion models. However, upon closer inspection, it also varied between programs within the ECSE model, and between classrooms within the ECE model. Thus, evidence did not support technology use as being illustrative of inclusion model differences in this study. This process served as a continuing check for disconfirming evidence (Brantlinger et al., 2005; Yin, 2014).

Data analysis summary. I employed a series of mixed methods analytic steps and strategies to address my research questions. First, I engaged in within-case analysis by advancing through 1) data reduction, 2) data transformation, 3) data correlations and comparisons, and 4) analyses for within-case inquiry conclusions and inferences. These steps built off of each other and were also iterative in that I sometimes went back to raw data to further support my developing understanding and initial inferences. Within-case analysis resulted in a case summary and joint data display for each inclusion model. Next, for cross-case analysis, I engaged in cross-case quantitative analysis and developed a cross-case joint data display. Finally, meta-inferences were made by systematically examining differences in quantitative and qualitative patterns

across the cases. This process was complex and iterative, reflecting a mixed methods approach to answering real-word questions and a case study method of inquiry that facilitated deep understanding of select variables and processes.

Advancing Rigor

There has been significant discussion about how to appraise and improve the quality of mixed methods work, particularly whether and/or how to translate quality indicators traditionally associated with single-method quantitative or qualitative research to mixed methods research (e.g., Creswell & Plano Clark, 2011; Heyvaert, Hannes, Maes, & Onghena, 2013; O'Cathain, Murphy, & Nicholl, 2008; Teddie & Tashakkori, 2009). O'Cathain (2010) synthesized many of the previous typologies and approaches to propose a comprehensive quality framework reflecting the entire research process from planning through utility. In the following sections, I will discuss how I implemented the present study in ways that align with accepted mixed methods procedures using two of O'Cathain's (2010) domains –design quality and data quality.

Design quality. Design quality reflects the extent to which the research design is appropriate based on the research questions, maximizes the strengths and minimizes the weaknesses of the methods utilized, and is implemented according to mixed methods-specific recommendations (O'Cathain, 2010; Teddie & Tashakkori, 2009).

In the present study, methods were chosen based on my conceptual framework and the research questions that inquired about inclusive education quality, children's individual experiences, and the program structures and processes that influence both. Based on the definition of inclusive education that I used and previous literature, it was necessary to simultaneously measure both global and inclusion quality. Both of the quality measures I selected are validated to tools to measure the phenomenon at hand. Also, in line with my

conceptual framework and research questions, I conducted child-specific observations, the CIRCLE, to capture the proximal processes that represent children's classroom experiences and influence their development. Finally, interviews were viewed as necessary to reveal the potentially unobservable program structures and processes that influence classroom practices (e.g., teachers' education, professional development opportunities, program policies and philosophies, staff collaboration). Thus, the methods used all aligned with my conceptual framework and were appropriate to the questions the study aimed to address.

All methods used were implemented in accordance with their intended purposes, maximizing their strengths. Both classroom-level quality measures were implemented after available training and in accordance with recommendations (Pianta et al., 2008, Soukakou, 2016). Similarly, CIRCLE observations were conducted with consultation from Juniper Gardens Children's Project, where it was developed, in order to ensure appropriate implementation. Meanwhile, interviews, specifically semi-structured interviews, were used in line with their unique ability to identify mechanisms underlying observable events and behaviors, highlight participant perspectives, and provide in-depth contextual information (Brinkman & Kvale, 2015). Finally, interviews allowed an understanding of stakeholder attitudes and beliefs about inclusive education, which has previously been identified as a key contributor to its implementation (Barton & Smith, 2015a; Leatherman, 2007).

Even though the interviews were supplemental to quantitative data, I generally implemented and analyzed them in accordance with qualitative research standards. During data collection, member checking was conducted during both phases of interviews by asking follow-up questions based on previous observations, initial understandings, and initial data analysis (Birt et al., 2016; Brantlinger et al., 2005). Such member checks also served to reduce the interviewer

monopoly on interpretation, in line with a reflective qualitative ethic (Brinkman & Kvale, 2015). That is, the member checks allowed participations to further shape my understanding of their experience and to contribute to ongoing interpretation and analysis of their practice. Additionally, I intentionally looked for disconfirming evidence with each stage of analysis (Brantlinger et al., 2005). This was particularly important as I detangled findings that were attributable to individual program practices rather than features of inclusion models. Finally, throughout data collection and analysis, I kept detailed field notes and an audit trail documenting field engagement to facilitate reflection (Brantlinger et al., 2005; Merriam, 2009).

The sequential mixed methods design and case study method of inquiry that were used were also appropriate given my purposes for mixing methods (development, complementarity, and initiation). A sequential design allowed me to use quantitative data to ensure the interviews were addressing the specific processes underlying what was observed while also expanding my understanding of the cases. Meanwhile, a multiple case study method of inquiry is particularly appropriate for research that serves initiation and complementarity purposes because it facilitates in-depth data collection with the intention of identifying differences between cases and contexts. Finally, joint data displays, one of the primary methods of analysis used in the present study, are particularly beneficial for research with an initiation purpose because it increases opportunities to directly compare data from different sources and facilitates data integration (Greene, 2007; Li et al., 2000). In sum, quantitative and qualitative data were collected in accordance with recommended practices. Moreover, both the research design and its implementation closely aligned with my conceptual framework and research questions.

Data quality. Data quality addresses the ways in which data is collected and analyzed. There is some overlap with design quality in that data quality also addresses whether the

methods are transparent and implemented in a rigorous way. However, data quality also specifically requires that the sampling technique is adequate, analysis strategies are undertaken properly, and data integration is completed in ways that do not compromise design quality (O'Cathain, 2010).

In the present study, I utilized multiple purposive sampling techniques. This was appropriate given my interest in deeply studying a select group of contexts that were characterized by important differences in instructional practice and program structures (Poorman, 2002; Teddie & Yu, 2007; Yin, 2014). Additionally, purposive sampling was warranted because I was not making causal inferences as a part of my study conclusions (Teddie & Yu, 2007). Instead, I was interested in being able to make inferences that are transferable, rather than generalizable. That is, I was interested in making inferences that would be relevant to contexts that are similar to those being studied rather than a wider group of early childhood settings.

The analytic strategies I utilized were also implemented in line with recommendations for case studies. First, I conducted broad, in-depth within-case analysis in order to closely understand the classrooms in the study before conducting cross-case analysis (Bazeley, 2018; Yin, 2014). This was particularly important because of the mixed methods nature of the study and the fact that there were multiple units of analysis within each case (Yin, 2006). Additionally, the data analysis process was iterative and included multiple readings and analysis of both raw data and data that had been coded or categorized (Greene, 2007). Finally, data analysis was deeply grounded in a strong conceptual framework (Miles et al., 2014; Ravitch & Riggan, 2012). Therefore, although I did not conduct inductive analysis of the qualitative interviews, the

analysis was comprehensive in its connection to previous knowledge and theory (Miles et al., 2014), and facilitated data integration from early on in the analysis process.

Finally, the mixed methods data analysis and integration steps that were used aligned with mixed methods guidelines, including data reduction, data transformation, data correlation and comparison, and analyses for inquiry conclusions and inference (Greene, 2007; Leech & Onwuegbuzie, 2010). Throughout analysis and interpretation, quantitative data was considered in conjunction with its statistical and practical significance (Leech & Onwuegbuzie, 2010). Meanwhile, I interpreted qualitative data by always using multiple data examples to draw conclusions in ways that reflected both the depth and breadth of qualitative data (Leech & Onwuegbuzie, 2010). When qualitative and quantitative data were integrated, inferences appropriately drew from the data in ways that were consistent with the purposes of the research and its design (Leech & Onwuegbuzie, 2010). Specifically, quantitative data supported findings about potential differences between inclusion models while qualitative data primarily contributed the potential mechanisms underlying said differences. Importantly, case summaries included both quantitative and qualitative data to understand the cases, and during cross-case analysis, each research question was addressed through data integration. That is, inferences about each case and the conclusions that addressed specific research questions drew from both quantitative and qualitative data. Data integration within cases and within research question findings are reflective of a stronger "mix" (Yin, 2006).

In sum, the selected mixed methods design and case study method of inquiry allowed me to adequately answer my research questions. Research methods appropriately aligned with the study's conceptual framework and research questions. Both data collection and analyses were generally conducted in accordance with single method and mixed methods quality indicators.

The multiple data sources, purposeful and iterative data integration, and iterative data analysis provided a nuanced and deep understanding of how classrooms implemented inclusive practices in unique ways.

Chapter 4: Findings

The purpose of this study was to investigate the potential influence of contextual features on inclusive education quality and individual child experiences. Importantly, this analysis was not intended to judge one organizational context or service delivery model as better than others. Instead, analysis aimed to reveal potential structures and processes that distinguish these contexts and how each could potentially be differentially supported to provide high-quality inclusive education to all children. While there were many interesting data patterns that arose from classroom observations and practitioner interviews, this chapter presents the one to two most salient themes that addressed each of the four research questions and that were based on multiple sources of data.

Chapter sections are divided by the four research questions. In each section, the differences between organizational contexts and/or service delivery models are described based on the quantitative classroom-level measures. Then, I discuss the child-level and interview findings that illustrated possible mechanisms underlying said findings and how they influenced children's experiences. Overall, findings illustrated several nuanced processes and structures that differed between organizational contexts and service delivery models.

Organizational Context and Global Quality

The first research question asked, *how do features of the organizational context influence the global quality of inclusive classrooms?* CLASS dimension scores were examined as the primary measure of global quality. Each classroom's scores on the CLASS's 12 dimensions and three domains can be seen in Appendix F. During cross-case analysis, I looked for CLASS dimension score differences between the two models that took place in public schools (co-teaching: public school and early childhood special education [ECSE]: public school models)

and the early childhood education (ECE) community-based model. A global quality difference was considered to be potentially linked to organizational context if the public school models scored similarly on a CLASS dimension, but differed from the community-based classroom. Additionally, I examined differences in CIRCLE results as a measure of children's individual experiences of global quality features. Finally, teacher and administrator interviews offered an expanded understanding of global quality differences and illustrated potential mechanisms that underlined differences before organizational contexts.

These analyses identified three primary global quality features by which public school and community-based center organizational contexts differed: 1) regard for student perspectives, a CLASS global quality dimension, 2) Academic Content, a classroom context CIRCLE variable, and 3) Academic Engagement, a child-level variable also derived from CIRCLE observations. Based on interview responses, programs' differential focus on academic standards or child-initiated activities appeared to connect these observed differences. That is, community-based programs' focus on tailoring classroom activities to children's interests and developing child-directed activities eclipsed a strict focus on academic standards and direct instruction. Meanwhile, public school teachers' emphasis on academic standards influenced their focus on providing academic content and facilitating children's academic engagement. In pursuit of these priorities, they did not regularly prioritize the incorporation of child-directed activities.

Regard for Student Perspectives

The biggest difference between the public school models and the community-based model was their score for the Regard for Student Perspectives CLASS dimension (Table 6). In general, the Regard for Student Perspectives dimension reflects the degree to which the teacher's interactions with children and the classroom activities 1) emphasize children's interests and

motivations, and 2) encourage children's development of responsibility and autonomy. Practices that reflect Regard for Students' Perspectives include incorporating children's interests and ideas into activities, allowing choice, providing opportunities for children to lead routines or activities, and encouraging child expression. While the two public school cases scored in the mid-range for this dimension (between three and five out of a possible score of seven), the community-based classrooms both scored in the high-range (between a score of six and seven). The ways that teachers described their lesson planning processes and supports for children's autonomy illustrate the organizational differences in Regard for Student Perspectives.

Table 6.

Regard for Student Perspectives CLASS Scores by Model

Case	Regard for Student Perspectives Score
Co-Teaching: Public School	4.75
ECSE: Public School	3.75
ECE: Community-Based Center	6.25

Incorporating child interests. The ways teachers in the two organizational contexts differentially approached incorporating children's perspectives and interests into the classroom was particularly evident in their descriptions of the lesson planning process. The public school classroom teachers generally described their lesson planning process as centering around state standards and district instructional expectations. For example, Teacher 1 (Classroom 1-101, Co-teaching: public school model) described her and her co-teacher's collaborative planning by saying, "She takes the objectives, the [state] early learning standards, and the TSG [Teacher's Strategies Gold]. And then I take the curriculum book…And then we talk about, "Okay, according to our pacing guide, that we have right now, what should be taught?" The pacing guide was a resource provided by the district that scheduled the general concepts and academic content

teachers should be teaching throughout the school year. Thus, in their planning, the teachers in classroom 1-101 considered state standards, curricular objectives, and the progress monitoring system associated with their curriculum. Little was said about the ways children's interests or backgrounds shaped their plans.

Similarly, Teacher 7 (Classroom 3-106, ECSE: public school model) described her planning process as being driven by district-provided indicators. She reported, "I've just looked at our indicators and [thought], 'Okay, now we need to be learning this.'" Public school teachers closely followed district-provided guides and state standards while planning classroom activities. Less emphasis was placed on children's expressed interests and perspectives. Two teachers did express willingness to adjust plans if children were not engaging. For example, Teacher 5 (Classroom 2-104, ECSE: public school model) described her project time, which served as a replacement for a small group activity, as an opportunity to explore the week's topic in a more hands-on way. While she recognized that the project time was very teacher-led, she reasoned that "if I see that the project is just not very engaging or not very fun, I also will follow the child's lead on what their interests are." While initial lesson planning was largely based on the curricular topic and objectives, she was open to following children's lead more to support their engagement.

Additionally, while both community-based and public school teachers reported having to submit their lesson plans to administrators, public school teachers' lesson plans were specifically evaluated based on their adherence to curricular objectives and state standards. For example, Administrator 3 (Program 3, ECSE: public school model) described teachers as having a fair amount of flexibility in how much they used activities and materials from the district's curriculum. However, teachers were expected follow the district's pacing guide and objectives.

She described, “We do have a pacing guide, and it goes in order of the curriculum…If you wanna do that using materials that you bring from outside or other activities you find, that’s fine too, as long as you’re teaching the standards.” Adherence to standards was the primary way public school administrators determined whether a teachers’ lesson plans were appropriate or not.

In contrast to public school teachers, community-based classroom teachers’ plans were heavily shaped by children’s interests. Teacher 8 (Classroom 4-107, ECE: community-based center) explained, “We have not planned a lesson that the children have not said, ‘This is what I wanna learn about.’ We always base what we talk about in our classroom off what they’re interested in.” Lesson plans were directly influenced by children’s expressed interests. One of the teachers in the other classroom, Teacher 10, described, “If they tell me at 10 am that they really are interested in watching someone get their teeth cleaned, then at circle, I can change what we we’re gonna do because I know that they really wanna see how people get their teeth cleaned.” As this comment illustrates, in addition to lessons being planned based on children’s curiosities, activities were also viewed as being flexible in order to incorporate children’s interests on the spot.

Although the community-based center did have a designated curriculum that teachers loosely followed, neither of the community-based teaching teams mentioned determining lesson plans based on academic standards or program academic expectations, and teachers’ lesson plans were not evaluated based on adherence to state standards. Administrator 4 (Program 4, community-based center) even acknowledged that because his center, and other community-based centers, are not subject to state assessments, they’re able to plan activities and interact with children differently. When asked how the center supports children’s access to academic

opportunities, Administrator 4 responded by saying that, "We don't fall under the confines of MAP [Measure of Academic Progress] testing or the standards…the school district has to fall under. We don't have numbers to meet essentially from an assessment stand point. I think the way we approach children is just different." Moreover, although the center was accredited by NAEYC (a high standard for early childhood centers), the accreditation did not influence expectations for teachers' incorporation of academic standards much. Administrator 4 described the accreditation as influencing "more on the physical environment." Similarly, teachers did not report that the content of their instruction was influenced much by the center's accreditation. Teacher 9 (Classroom 4-107, ECE: community-based center) described the NAEYC accreditation as more generally influencing "how teachers run their room…the effort that they put into interacting." Thus, community-based teachers were not evaluated based on their strict provision of academic content aligned with academic standards seemingly because community-based programs are not required to adhere to such standards and accountability measures. Even the center's additional accreditation only generally influenced classroom's physical environment and teacher's instructional approaches.

Interestingly, Teacher 7 (Classroom 3-106, ECSE: public school), who was also an itinerant teacher in community-based centers, recognized this difference between public schools and community-based centers as well. She commented,

> "we have these indicators –these kids are supposed to count to 30, and these kids are supposed to know 13 upper and lower case [letters]. So, some of that you can't just embed, some of that you gotta drill, and you just have to. So, I think, maybe, the community preschools have more leeway in that respect. That they can let the kids be kids more than we do."

The requirements that public schools are held to influenced the extent to which practitioners could provide child-directed, less-structured activities. This potentially created more freedom for

teachers to prioritize child interests and perspectives in line with the Regard for Student Perspectives CLASS dimension.

Supporting children's autonomy. Another important component of Regard for Student Perspectives is supporting children's development of independence and leadership. Every classroom observed had classroom "helper" roles and responsibilities that all children alternated through. Roles included line leaders, counting the number of children present during attendance, signaling transitions, and helping prepare for meal times. However, outside of these responsibilities, public schools and community-based centers differed in how much they incorporated leadership opportunities and supports for children's autonomy and problem-solving.

Public school classrooms primarily discussed typically-developing peers serving as models for children with disabilities, but did not discuss such roles and opportunities for children with disabilities. For example, Teacher 6 (Classroom 3-105, ECE: public school) reported that a strength of her classroom was having "strong peers" who "show [children with disabilities] how to play and help them play and facilitate that learning." Typically-developing peers were seen as important assets in all of the public school classrooms to model language, play, and appropriate behavior. This was a primary way teachers facilitated their development of leadership. However, there were not any coded excerpts from public school teachers or administrators that described children with disabilities serving as models or taking leadership roles in their classrooms (outside of teacher-determined classroom helper roles). Thus, the interview data suggested that children with disabilities may have had fewer opportunities to take leadership roles and build autonomy. As a result, they may have had fewer learning opportunities and supports relevant to the Regard for Student Perspectives global quality domain.

Alternately, community-based teachers reported that supporting all children's autonomy and problem-solving was an additional focus of their instruction. Teacher 11 (Classroom 4-108, ECE: community-based center) described "we try to help them be able to make their own solutions…just being able to have that tool in their back pocket, I think it's very important." Developing children's autonomy and problem-solving skills was seen as an area of children's development that required explicit instruction. The administrator for the program also described supporting children's autonomy as necessary for teachers' classroom management given the teacher: child ratio in such community-based programs. He described that the typical free play/centers time was sometimes challenging because one teacher would facilitate the teacher-led activity while the other one had to actively monitor the rest of the class. He described, "If you're the one teacher leading, what's the other one doing? And so you want to teach that autonomy with the kids. You want them to learn how to solve their own problems." While teaching problem-solving is not technically an academic area, the community-based practitioners viewed it as essential to children's learning and their own ability to manage the classroom. Based on their interview responses, time was dedicated to explicitly supporting children's development in this area.

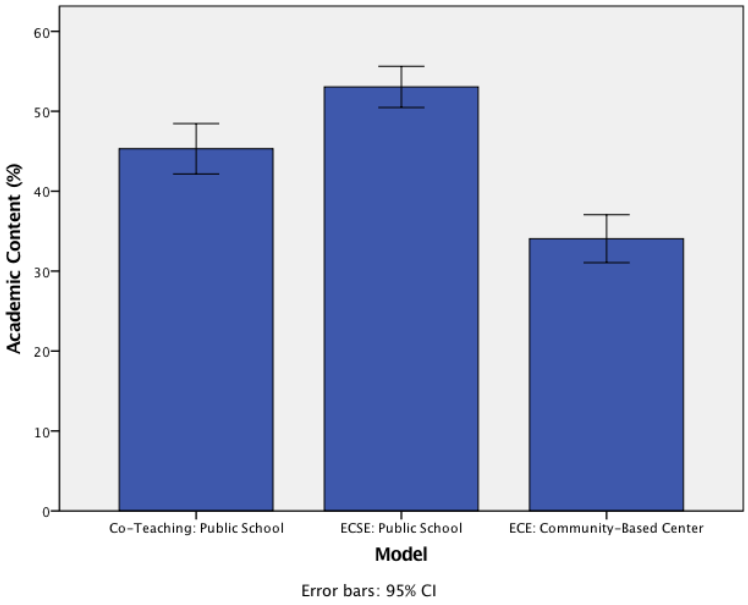
These examples are not to say that public school teachers did not incorporate children's interests or support children's independence. Again, all of the public school classrooms scored within the mid-range for Regard for Child Perspectives. However, community-based teachers more consistently described linking curricular goals and instruction to children's interests, developing child-led activities, and explicitly supporting independence. The absence of academic accountability measures for community-based programs seemingly enabled that focus.

Community-based practitioners' emphasis on these practices were evidenced in their higher score in the Regard for Student Perspectives domain.

Academic Content and Instruction

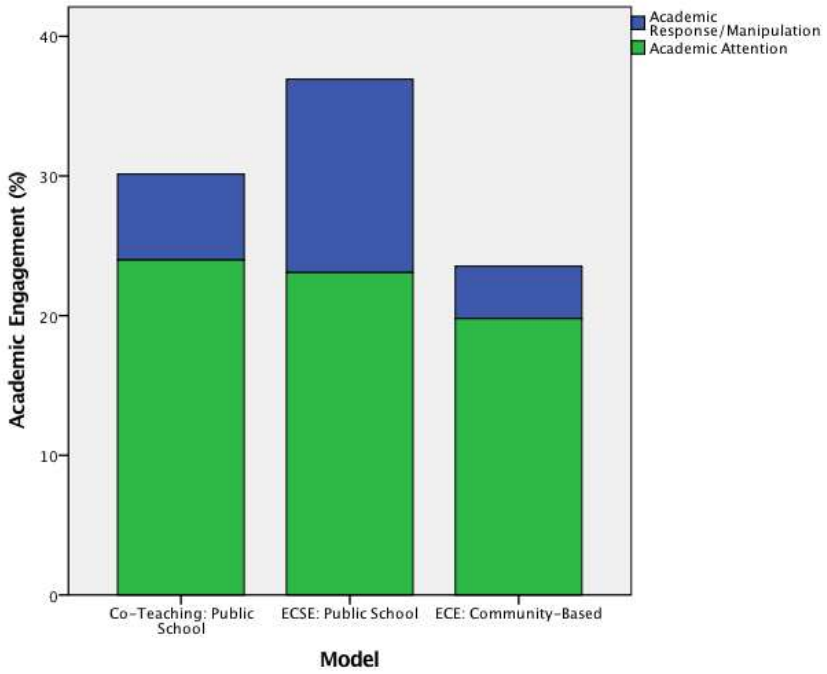
Public school teachers' focus on state standards and district-mandated academic expectations is apparent when looking at the academic content that focus children were exposed to and their academic engagement during CIRCLE observations. The Academic Content code within CIRCLE was a classroom context-level variable that indicated whether teachers' talk or classroom activities had a particular academic focus (e.g., language/literacy, numeracy, science) or not. Meanwhile, Academic Engagement jointly reflected individual children's attention to academic instruction or materials (Child Engagement –Academic Attention variable) and children's academic responses (Child Engagement –Academic Response, Verbal or Gesture Response and Child Engagement –Academic Manipulation variables). Children with and without disabilities in public school classrooms were significantly more likely to be involved in activities that had an academic focus compared to children in community-based classrooms (Figure 7). T-tests comparing the percentage of academic content children were exposed to across the models showed significant differences between focus children observed in community-based classrooms (M= .341, SD= 0.47) and co-taught public school classrooms (M=.45, SD=.498; $t[1913.38]=5.07$, $p<.001$) as well as significant differences between children observed in community-based classrooms (M= .341, SD= 0.47) and ECSE public school classrooms (M=.531, SD=.499; $t[2126.3]=9.41$, $p<.001$).

Figure 7. *Academic Content by Model*



Children with and without disabilities in public school classrooms were also more likely to be academically engaged compared to their peers in community-based classrooms. Academic engagement was a composite variable that reflected children attending to academic content (Academic Attention), giving academic verbal or gestural responses (Child Engagement – Academic Response, Verbal or Gesture Response), or manipulating materials/objects as a part of an academic task (Child Engagement –Academic Manipulation) (Figure 8). T-tests comparing children's academic engagement across the models showed significant differences between focus children observed in community-based classrooms (M=.235, SD=.42) and co-taught public school classrooms (M=.30, SD=.459; t[1905.04]=3.27, p<.001) as well as significant differences between children observed in community-based classrooms (M=.235, SD=.42) and ECSE public school classrooms (M=.369, SD=.48; t[2223.75]=7.16, p<.001).

Figure 8. *Academic Engagement by Model*



Note that differences in academic engagement across the two organizational contexts were primarily the result of differences in children's rates of academic responses, not academic attention. Children in community-based centers displayed similar rates of academic attention compared to their peers in public school classrooms. However, there were more opportunities for children to engage in academic responses or manipulation in the public school classrooms. The child-driven nature of community-based teachers' lesson planning (that is, their higher scores in Regard for Child Perspectives) could have facilitated their ability to support children's attention to the academic content that was being provided. Meanwhile, public school teachers' focus on academic standards as a part of their planning potentially contributed to the creation of intentional opportunities for higher-level academic engagement.

Observed differences in the academic content teachers provided and children's subsequent academic engagement could reflect the different lesson planning processes and

expectations previously discussed. In addition to that, teachers in public school and community-based programs were differentially evaluated based on the provision of academic activities. Both Programs 1 (Co-teaching: public school) and 4 (ECE: community-based center) evaluated teachers using the CLASS. However, Program 1 and the other public school programs (Programs 2 and 3), also conducted other observations and evaluations that assessed teachers' adherence to state standards. Administrator 1 (Program 1, Co-teaching: public school) explained that when she observed teachers for non-CLASS observations, she looked for multiple components of effective teaching, but one of them was specifically the provision of "rigorous learning goals." She described her observations as "going into classrooms and seeing, are the teachers teaching the standards from the [state] early learning standards? Is it rigorous?" While the CLASS focuses on teacher-child interactions as a measure of quality, public school administrators also uniquely evaluated teachers based on the content of their lessons and adherence to academic standards. This difference in how teachers were evaluated could have contributed to how much teachers prioritize the provision of academic content and academic engagement opportunities.

In sum, the differences in teachers' instructional planning priorities and the nature of teachers' evaluations could have contributed to community-based centers' higher score in the Regard for Student Perspectives domain, and the higher levels of academic content and academic engagement observed in public school classrooms. Practitioners in community-based centers and public schools essentially took different approaches to planning classroom activities and content –one based on academic standards and the other emphasizing child-led activities and autonomy. Both approaches are important components of classrooms' global quality.

Organizational Context and Inclusion Quality

The second research question asked, *how do features of the organizational context influence the quality of children's inclusive experiences?* Inclusive Classroom Profile (ICP) item scores were examined as the primary measure of inclusion quality. Each classroom's scores on the ICP's 12 items and their total scores can be seen in Appendix G. During cross-case analysis, I looked for ICP item score differences between the two models that took place in public schools (co-teaching: public school and early childhood special education [ECSE]: public school models) and the early childhood education (ECE) community-based model. An inclusion quality difference was considered to be potentially linked to organizational context if the public school models scored similarly on an ICP item, but differed from the community-based classroom. Additionally, I examined differences between the experiences of children with and without disabilities in each model using CIRCLE results, and compared the patterns observed during within-case analysis of the two public school models and the community-based center. Differences between the experiences of children with and without disabilities within the models were examined because it allowed me to gauge whether children with and without disabilities had equitable access to learning opportunities and opportunities to participate with peers and adults, two components of DEC and NAEYC's (2009) definition of inclusion. Finally, teacher and administrator interviews both contributed to ICP scoring and illustrated potential context-specific structures and processes that influenced inclusion quality.

Based on ICP scores, public school and community-based center organizational contexts differed on two primary inclusion quality features: 1) Adult Guidance of Children's Free-Choice Activities and Play, and 2) Monitoring Children's Learning.

Guiding Children's Free-Choice Activities & Play

Public school and community-based centers differed in their scores on the ICP item, Adult Guidance of Children's Free-Choice Activities and Play. This item measured the extent to which classroom adults provide choices during free-choice play times (also referred to as centers time), demonstrate enjoyment while facilitating sustained interactions, support children's ability to make and express choices, and use scaffolding strategies to facilitate and extend children's engagement and play. Strategies to support children's play, according to the ICP, include verbal/non-verbal prompting, modelling, commenting/asking questions, using peer support strategies, and providing assistive technology and visual supports. Community-based classrooms both received a score of 6 (between "good" and "excellent") while public school classrooms generally scored in the "minimal" to "good" range on this ICP item (Table 7).

Table 7.

Adult Guidance of Children's Free-Choice Activities and Play ICP Scores by Model

Case	Adult Guidance of Free-Choice Score
Co-Teaching: Public School	4
ECSE: Public School	4.67
ECE: Community-Based Center	6

The community-based classrooms' higher score on this item largely reflected their sustained engagement with children during centers and use of multiple strategies and materials to extend children's engagement during activities and play.

While the ICP is a classroom-level measure, CIRCLE data further revealed some differences in free-choice activities between the two organizational contexts, as experienced by individual children. When CIRCLE data collected during free-choice (or centers) time was isolated, the community-based center classrooms were the only model where teachers' general conversation was significantly positively correlated with the presentation of academic content.

This was true for all children (r[548]=.259, p<.001) as well as children with disabilities, specifically (r[185]=.252, p=.001). Further, children with disabilities were engaged in more academic attention during centers time within the community-based center classrooms. There was a significant difference in academic attention for children with disabilities in community-based center classrooms (M=.08, SD=.27) when compared with both co-teaching public school classrooms (M=.005, SD=.07; t[209.4]=-3.66, p<.001) and ECSE public school classrooms (M=.02, SD=.15; t[256.2]= -2.64, p<.01). Meanwhile, the two public school models did not significantly differ in children's academic attention during free-choice time. Note that CIRCLE did not reveal significant differences in the types of teacher talk focus children in public school and community-based classrooms experienced (e.g., positive or negative feedback, open-ended questions, closed-ended questions). This was primarily because of large variance between focus children within the classrooms. Consequently, teachers' involvement in children's play may be an area where children's individual experiences vary and may not be fully reflected in classroom-level measures.

Practitioner interviews did not reveal substantial differences in teachers' approach to free-choice time. However, community-based teachers' descriptions of how they facilitate free-choice time reveal their perspective that it is an important instructional period. In addition to teachers leading a teacher-led center in place of small group, teachers emphasized that some children learned best as they were playing. For example, Teacher 10 (Classroom 4-108, ECE: community-based center) explained that,

> "some of our kids could care less about large group, but [we're] making sure that we hit [objectives] with them at small group. Or even if they're not gonna come to our teacher-led table, making sure that we try to hit on whatever we're working on, just in the conversation of blocks."

For both community-based classrooms, the teacher-led table was optional unless required for child assessments. Focus children were rarely observed during CIRCLE while at the teacher-led center (.1% of observations). However, teachers tried to infuse the themes and objectives the class was working on during individual interactions with children during center time.

Monitoring Children's Learning

Public school and community-based centers also differed in their scores on the ICP item, Monitoring Children's Learning (Table 8). This item was scored based on documentation review and teacher interviews, rather than observations. The item reflects practitioners' use of developmental screening tools and multiple assessment methods that include contextual information. Additionally, a higher score on the item requires classroom teachers to regularly attend team meetings that discuss children's progress, have access to children's individualized education plans and related service providers' assessments, and to regularly review and adjust intervention plans based on child progress monitoring data. Public school classrooms all scored between five and six ("good range") while community-based classrooms both scored a two ("inadequate" range). Community-based classrooms did not have many data collection processes in place. Meanwhile, frequent progress monitoring was central to public school programs. The public school classrooms did not score the highest possible score on the ICP because data systems did not include contextual information (e.g., level of prompting, children's approaches to completing a task) and IEPs were typically only reviewed once per year unless there were significant changes necessary.

Table 8.

Monitoring Children's Progress ICP Scores by Model

Case	Monitoring Children's Progress Score
Co-Teaching: Public School	6
ECSE: Public School	5.3
ECE: Community-Based Center	2

The community-based classrooms both collected data on children two to three times per year using Teaching Strategies Gold (TSG), the assessment program associated with their curriculum. The teachers reported periodically using other forms of documentation, such as saving or taking pictures of children's work and writing informal notes. For example, Teacher 10 (Classroom 4-108, ECE: community-based program) reported that, other than completing the Teaching Strategies Gold checkpoints, tracking children's progress was "more mental." She went on to say that "it's mainly just… we'll write a note, but it's not on official like documentation, so to speak. Just lots of scraps of paper." She did report that the program's curriculum director provided teachers with data sheets, but teachers were not required to use them or provide evidence of data collection outside of the TSG assessments. While teachers did report using the TSG assessments and mentally or generally tracking children's abilities and classroom interactions, they did not conduct consistent progress monitoring.

Teachers in the community-based classrooms also did not take data specifically tracking children's progress on IEP goals. Teachers reported that IEP-specific data collection was done by the related service providers. Classroom teachers described providing service providers with informal feedback or input in addition to the results from their Teaching Strategies Gold assessments. When asked if she took data on children's IEP goals, Teacher 9 (Classroom 4-107, ECE: community-based center) reported, "that's mostly the service provider. Like they are really in charge of establishing his goals. I can make suggestions, like, 'oh I think that area is really

good or this area could use some development.'" She went on to describe data collection as a responsibility divided amongst children's service providers based on their areas of specialty, saying "the checkpoint from Teaching Strategies [Gold] is all us, and then his speech [therapist] did a data collection, and then another, [therapist] did her own data collection on like other areas of development. So each specialist did their own area." Similarly, Teacher 11 (Classroom 4-108, ECE: community-based center), in the other community-based classroom, reported that the related service providers collect data on children's IEP progress while teachers informally talked with them about children's classroom experiences. She described,

> "basically, when they come in, we let them know what he's been doing, how he's been reacting, things that we have done, things that have worked, and then they take what they do and then they will also observe in the classroom as well, and then they figure out if he's met it, his goals or not."

Community-based teachers primarily conducted their curriculum-based assessment and provided some information to specialists, but they did not collect data specific to individual children's needs or IEP goals.

Regarding program data expectations, the administrator for the community-based program cited the TSG assessment and reported a behavior reporting system that all teachers were expected to use if they were having challenges with a child's behavior. Administrator 4 described the system, saying it was "essentially a reporting system for our student –or for our teacher to say, 'Hey, these behaviors are recurring.' And then once they hit a certain threshold then there's kinda triggers [for] the next step." Based on the significance and frequency of the reported behaviors, program support staff (e.g., the curriculum director) would then determine whether the program's part-time behavior consultant would be needed or if they could work with the teacher to develop additional supports for the child.

In contrast, all of the public school teachers reported taking data on children's individualized progress approximately once per week, and sometimes more often. Teacher 3 (Classroom 1-103, co-teaching: public school) reported that they

> "take data on different areas of development, and then enter that data four times a year at the end of every quarter, for all students. And then also on the students with IEPs, we'll take data on them on their specific goals. I try to do that at least once a week with each student and each goal."

Public school teachers' data collection included monitoring all children's progress based on a curriculum-based or developmental assessment as well as data collection that was specific to individual children's progress. Program 1 teachers took data for all children based on the district-provided curricular pacing guide and Teaching Strategies Gold (TSG). Similarly, Program 3 used the Individualized Growth and Development Indicators (IGDIs) for all children. The data that teachers collected for individual children was typically described as being less formal, and more frequently collected, compared to these assessments. For example, Teacher 1 (Classroom 1-101, Co-teaching: public school) differentiated "informal and formal" data. The later was the district-required TSG assessments while the former was based on data sheets that another teacher developed in addition to targeted child observations. She reported, "the formal ones are the ones that we do where we pull them out of centers…our informal ones are more of like what we're writing down during small group time." All public school teachers described both a formal assessment required by the public school district in addition to more informal progress monitoring data that either tracked children's progress on IEP goals or curricular goals.

Data collection was an expectation across all of the public school programs, and the administrators often described requesting data from teachers. When Administrator 2 (Program 2, ECSE: public school) was asked what she viewed as important for inclusive education, she responded that "being able to assess your student and know where they're at is very important

because you then have to be able to differentiate the learning." She viewed progress monitoring as central to teachers being able to be inclusive. In that program, the lesson plans that teachers submitted were even required to address data collection plans. Similarly, Administrator 3 (Program 3, ECSE: public school) said that "part of the expectation of how to do your job here – it's like you're gonna have to have data to back up what you say or what you're asking for." Collecting data was such a pervasive expectation that administrators also used teachers' data to evaluate their performance and identify support needs. Program 1 conducted "quarterly data check-ins" to help teachers determine children's intervention needs, particularly within the math and literacy standards. Administrator 1 (Program 1, Co-teacher: public school) reported that, during the data check-ins with teachers, they "kind of discuss where their class is at as a whole…and talk to them about what kind of either class interventions or small group interventions they can put into place." Public school teachers were required to consistently monitor children's progress and keep appropriate documentation.

Like the community-based teachers, public school teachers described some division of data collection labor between teachers and related service providers. Teacher 5 (Classroom 2-104, ECSE: public school) described this, saying, "I do a weekly data collection on their progress per goal…Now I don't collect the data for any of their speech goals, that would come from our speech language pathologist." While teachers did not collect data on all of children's goals, they were the primary ones responsible for tracking children's general developmental progress and less specialized goals (e.g., cognitive, social). Also like the community-based teachers, classroom teachers reported primarily sharing information with related service providers through informal check-ins. When Teacher 6 (Classroom 3-105, ECSE: public school) was asked if she had access to related service providers' assessments, she said that she did, but reported that, "a

lot of it, I will just say, "Hey, how're they doing on the pronoun usage for you because for me, I'm not noticing any or whatever…So, it's just a lot of informal." Teachers often collaborated with related service providers through more informal check-ins to briefly discuss children's progress and intervention plans.

Importantly, public school teachers' informal check- ins with related service providers were aided by the fact that most service providers were located within the same buildings as the classrooms or the service providers were in the buildings often for multiple children. Teacher 7 (Classroom 3-106, ECSE: public school) described, "since the speech therapists are right here, that [checking in] can happen on a daily basis but its informal. It's not a formal meeting…unless it's their –we're getting ready for their IEP, or their transition to Kindergarten." Unlike the community-based teachers who only saw service providers when they came to pull children out of the room, public school teachers and administrators reported frequent check-ins during a common planning period, and before and after school. More frequent opportunities for collaboration facilitated their ability to share information about children's progress.

Public School programs did have some challenges and unique features around data collection. For example, Program 2 (ECSE: public school) did not provide developmental screening for all children who entered the district –only those who went through special education evaluation were screened. Additionally, Administrator 1 (Co-teaching: public school) recognized that TSG was not always appropriate for children with developmental delays or disabilities. She reported that "for our special ed students, [it] turns into a report card for parents that says, 'Not yet, not yet, not yet, not yet,' and I know that that is very frustrating…our assessment system, I don't think, is very friendly for –I don't think its geared towards students that have special needs." The program still required teachers to complete the TSG, but they gave

them some freedom in how teachers completed the TSG checklists and the other types of documentation on which they based decisions. The challenges that Administrator 1 described are particularly important because TSG was the only progress monitoring tool that Program 4 (ECE: community-based center) used. Neither the Program 4 teachers nor administrator mentioned any challenges completing the TSG for their children with disabilities, but that could have been due to the nature of those children's needs. Finally, because Program 1 (Co-teaching: public school) also received Head Start funding, teachers had an additional data collection form they were required to complete and provide to parents. In sum, data collection was central to teachers' responsibilities in public school settings. This was a primary difference between the two organizational contexts in regard to inclusion quality.

Service Delivery Model and Inclusion Quality

The third research question asked, *how do features of the service delivery model influence the quality of children's inclusion?* Unlike the first two research question, this research question examined differences between each of the three models (Co-teaching: public school, ECSE: public school, and ECE: public school) based on the ways children with disabilities received individualized instruction and had opportunities to participate with peers and adults. Inclusive Classroom Profile (ICP) item scores were examined as the primary classroom-level measure of inclusion quality. Additionally, CIRCLE analyses identified differences between teachers' instructional practices for children with and without disabilities within each model. An inclusion quality difference was considered to be potentially linked to service delivery model if each of the three cases differed on an outcome variable.

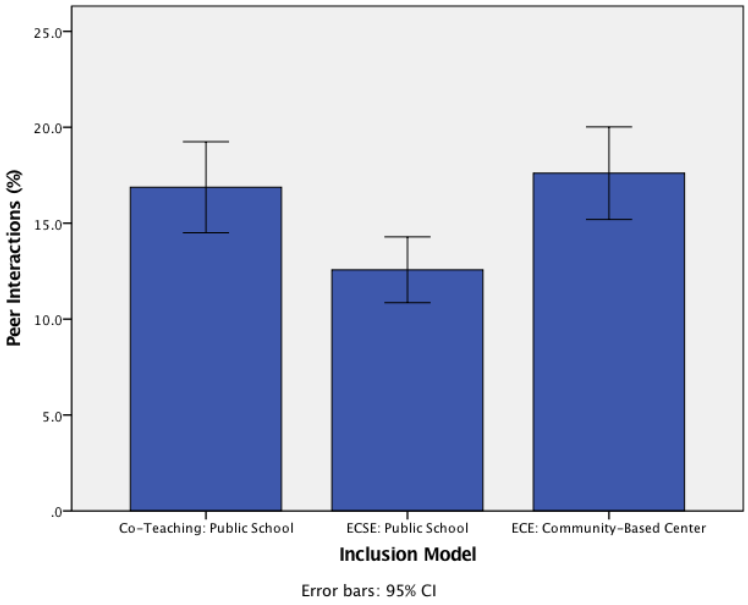
The only differences in the models' ICP item scores were attributable to organizational context features, as discussed with research question two. However, CIRCLE and interview

analyses revealed some differences in one inclusion quality feature –peer interactions. While the three models did not differ in the ICP item, Adult Facilitation of Peer Interactions (they each averaged a score of 4, between the "minimal" and "good" range), CIRCLE and interview analyses indicated that teachers across the three models facilitated social communication and peer interactions differently. Here, I will separately discuss each of the models' results regarding peer interactions in order to illustrate how service delivery model features contributed to differences in children's individual experiences beyond what was captured by the classroom-level measure. These differential mechanisms have implications for the unique needs of teachers in each model in order to improve their facilitation of peer interactions.

ECSE Classrooms –Adult Involvement and Peer Interactions

Focus children in the ECSE classrooms had the fewest peer interactions (Figure 9). T-tests showed that the percentage of time focus children with and without disabilities in the ECSE classroom socially partnered with other children (M=.126, SD=.331) was significantly less than children in co-teaching classrooms (M=.169, SD=.374; t[1880.25]=2.89, p<.01) and children in ECE classrooms (M=.176, SD=.381; t[1856.49]=-3.34, p=.001). Note that there was large variance in the amount of time children were partnered with another child across all three models. However, variance in ECSE classrooms did not reflect differences in the experiences of children with and without disabilities. That is, children with and without disabilities in ECSE classrooms did not significantly differ in the amount of time they spent interacting with peers. Therefore, this difference in peer interaction frequency between ECSE classrooms and the other models was further explored by examining correlates of peer interactions and qualitative data related to teachers' facilitation of peer interactions.

Figure 9. *Child Peer Interactions by Model (Percentage of All Interactions)*



When the social partners of focus children with disabilities was specifically examined, the difference between the models was no longer significant, but children with disabilities in ECSE models still had the lowest amount of interactions with other children. However, the correlates of children with disabilities partnering with other children indicates a unique relationship between ECSE teachers' proximity and talk with children with disabilities and their social interactions with peers. ECSE classrooms were the only ones in which *both* an adult's close proximity to the child with a disability ($r[958]=-.171$, $p<.01$) and the child being the recipient of teacher talk was negatively correlated with the child's social partner being another child ($r[958]=-.131$, $p<.01$) (Table 9).

Table 9.

Correlation between Teacher Involvement and Child Social Partner for Children with Disabilities by Model

Model	Correlation between Teacher Close Proximity and Child Social Partner - Child	Correlation between Child being Recipient of Teacher Talk and Child Social Partner-Child
Co-Teaching: Public School	-.058	-.047
ECSE: Public School	-.171**	-.131**
ECE: Community-Based Center	-.096	-.112*

Note: * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

This relationship is particularly important because children with disabilities were significantly more likely to be in close proximity to a teacher or paraprofessional in ECSE classrooms (M=.578, SD=.49) compared to co-teaching classrooms (M=.314, SD=.464; t[1426.3]=-10.814, p<.001) and ECE classrooms (M=.244, SD=.430; t[621.74]=11.55, p<.001) (Figure 10). Additionally, children with disabilities in the ECSE classroom were significantly more likely to be the sole recipient of teacher talk (M=.252, SD=.434) compared to children with disabilities in the co-teaching classrooms (M=.100, SD=.300; t[1595.96]=-8.28, p<.001) and ECE classrooms (M=.075, SD=.264; t[621.74]=11.55, p<.001) (Figure 11). Note that although the CIRCLE variables refer to "teacher," they reflect any adult being in close proximity to or talking to the child, including paraprofessionals.

Figure 10. *Teacher Close Proximity for Children with Disabilities*

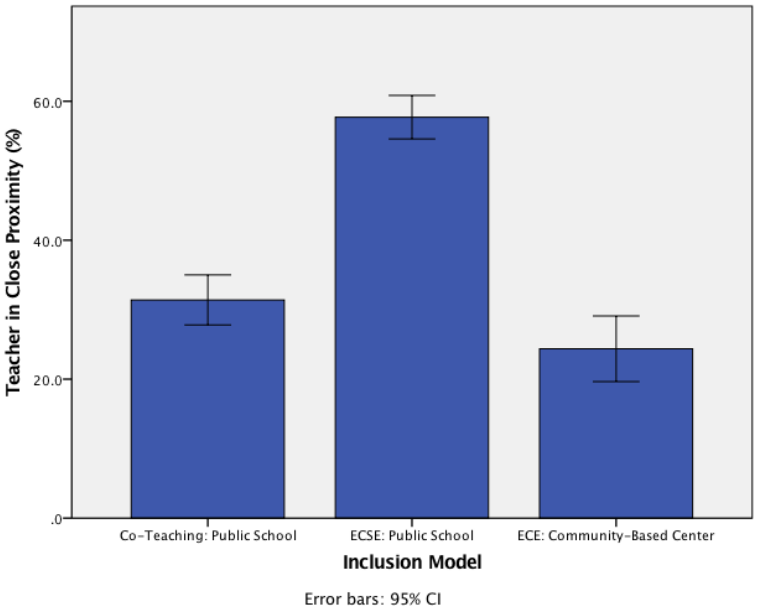
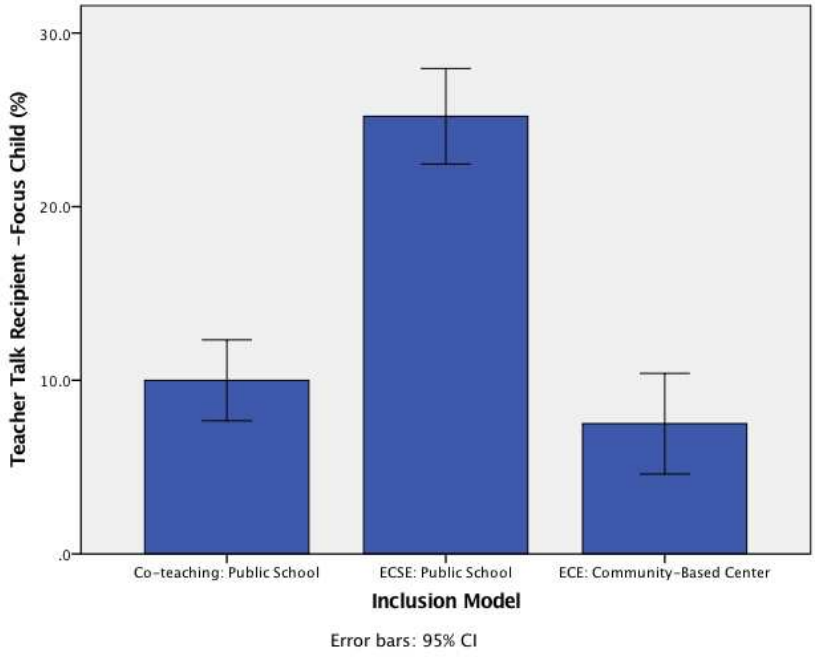


Figure 11. *Children with Disabilities –Sole Recipient of Teacher Talk*



Together, these results indicate that adults in ECSE classrooms may have had particular challenges with facilitating peer interactions when they were in close proximity to, or talking to, the focus children with disabilities. That is, their involvement with children with disabilities was potentially not supporting them subsequently partnering with peers more.

Teachers' interviews suggest that teacher talk and proximity may potentially negatively influence children's peer interactions in ECSE classrooms because adults primarily used such interactions as individualized learning opportunities for children with disabilities in ways that resulted in adults' over-involvement in peer interactions. For example, when Teacher 6 (Classroom 3-105, ECSE: public school) was asked how she supported peer interactions, she responded, "we just try to model and show them what they need to be doing. Use language with them, appropriate language…modeling that appropriate speech, and that appropriate social boundary." ECSE teachers generally described modeling and correcting children's behavior to support peer interactions. The prevalence of teachers modeling appropriate language may have contributed to the proportionately higher rates of teacher talk observed in ECSE classrooms. Indeed, modeling is an appropriate strategy to support children's social interactions (and is accounted for on the ICP item evaluating adults' facilitation of peer interactions). However, overreliance on modeling in the absence of other strategies, such as those that are indicative of a higher score on the ICP (e.g., prompting, environmental arrangements) could result in teachers actually interfering with peer interactions. Similarly, when Teacher 5 (Classroom 2-104, ECSE: public school) was asked how she supports children's participation in the classroom, she described working on their social goals using peer models. She provided an example, explaining,

> "I think they learn so much from the social play with their peers, such as during centers, in working on those learning goals…if I see one child that is just playing isolated, my first reaction is to go to that child and start asking questions, "What are you doing? May I have one?" Showing them a picture, "Oh, can I have this? Oh, thank you." And then I'll

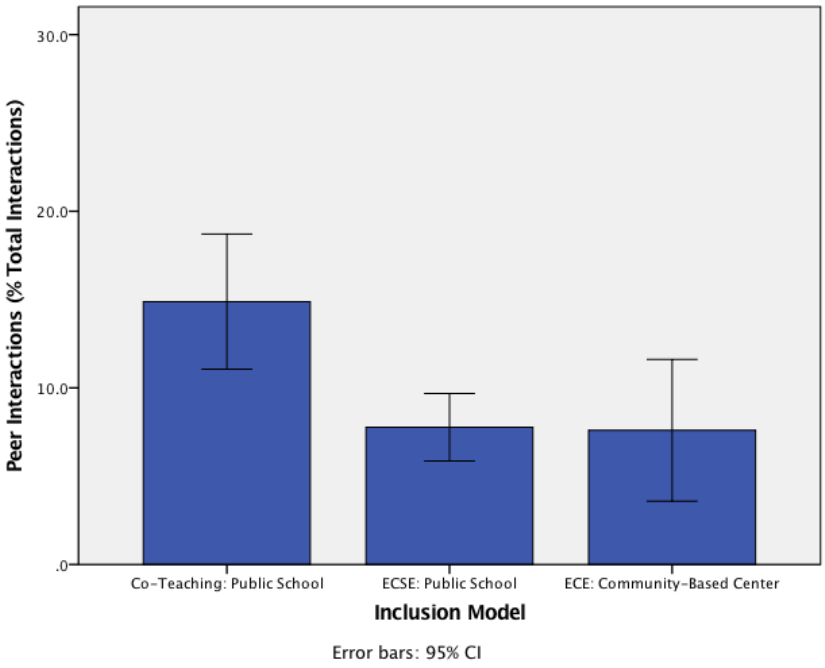
> bring a peer over. I'll say, "so-and-so, why don't you let her take your order?' In our little play kitchen."

While such an exchange does bring a peer over to a child with a disability, the teacher was still largely leading the exchange and prioritizing working on children's individual goals during the peer interaction. Thus, by consistently positioning peers as supports for children with disabilities and using such interactions for instructional purposes that require more extensive teacher facilitation, ECSE teachers were sometimes inadvertently limiting sustained peer interactions.

Co-Teaching Classrooms –Preparing Typically-Developing Peers

Co-teaching classrooms also scored a 4 on the ICP peer interaction item, primarily because they did not display the required number of different strategies facilitating peer interactions. However, children's individual experiences revealed unique patterns in the relationship between teacher proximity and peer interactions. In co-teaching classrooms, adults' close proximity to and interaction with children with disabilities was not significantly negatively correlated with children with disabilities partnering with peers. Further, when adults were in close proximity to a focus child, the child had significantly more child-child interactions in co-teaching classrooms (M=.148, SD=.36) compared to ECSE classrooms (M=.078, SD=.27; t[509.47]=3.27, p=.001) and ECE classrooms (M=.076, SD=.266; t[437.55]=2.59, p=.01) (Figure 12). ECE and ECSE classrooms did not differ. When only the peer interactions of children with disabilities were analyzed, children with disabilities in co-teaching classrooms still had significantly more peer interactions (M=.129, SD=.336) than children with disabilities in ECSE classrooms (M=.076, SD=.265) when in close proximity to an adult. The difference in peer interactions within close proximity of an adult in co-teaching and ECE classrooms was no longer significant.

Figure 12. *Peer Interactions within Close Proximity of an Adult by Model*



Teachers' interview responses revealed a unique way co-teaching classrooms approached facilitating peer interactions. Rather than only focusing on teaching children with disabilities to interact with peers, the teachers primarily described intentionally preparing typically-developing peers to initiate social interactions and respond to the many ways children with disabilities in the classroom may interact. Teachers in both of the classrooms described building classroom community at the beginning of the year due to the size and make-up of the classroom. For example, when asked how they encourage peer interactions, Teacher 1 (Classroom 1-101, Co-teaching: public school) described that, "we really, really work hard in the beginning of the year to create that community in the big classroom." Teacher 1 described the large size of the classroom as necessitating a more cohesive, intentionally-built community.

In addition to community-building taking place at the beginning of the year, teachers in the co-taught classrooms described teaching typically-developing peers how to interact with children with disabilities based on their individual abilities and needs. Teacher 4 (Classroom 1-

103) in the other co-teaching classroom reported, "sometimes you have to explain to the Gen Ed kids like, 'Hey, we need to talk on it. You can ask them to talk, you can –' we just involve them with different ways to communicate to all the kids and participate with them." In this way, rather than only helping children with disabilities during peer interactions, teachers taught typically-developing peers how to initiate and lead the interactions.

The co-teaching teachers' approach to involving typically-developing peers in social interactions with children with disabilities seemed to be due, in part, to the higher ratio of typically-developing peers in co-teaching classrooms compared to the ECSE classrooms. Teachers were more easily able to prompt children with disabilities to partner with typically-developing peers or follow their lead. For example, Teacher 2 (Classroom 1-101, Co-teaching: public school) described facilitating peer interactions by directing children with disabilities to see what their peers were doing during play. She explained,

> "We're not gonna say, 'Oh, come play this.'…Especially in the blocks area that you see a lot of individual things, a lot of kids playing near each other. But we could facilitate it by seeing and coming up with an idea together and seeing –Having them share the blocks, having them share the toys, to help with communication that way. Even with planning as well, like, 'what should we make? Oh, he's got an idea, let's try that."

The presence of many peers who were able to model play and help plan play allowed teachers to use them to lead social interactions rather than serving as the primary models themselves. These teachers' more frequent referral to peers as models and leaders in social interactions may have contributed to their proximity not being significantly correlated with reduced peer interactions. It may have also underlined the finding that co-taught children had more peer interactions in close teacher proximity compared to children in other inclusion models. Both the total number and ratio of typically-developing peers in co-taught classrooms aided this.

ECE Classrooms –Differential Peer Interactions by Disability Status

ECE classrooms were the only ones in which focus children with disabilities had significantly fewer social interactions than their peers without disabilities. T-tests comparing the percentage of times that children partnered with another child showed that children with disabilities had significantly fewer social interactions (M=.134, SD=.341) than their peers without disabilities (M=.197, SD=.398; $t[730.8]=2.53$, $p<.05$). It should be noted that one of the two children with disabilities in ECE classrooms was diagnosed with Autism Spectrum Disorder (ASD), which can significantly impact a child's ability to initiate and respond to social interactions. Additionally, like, the ECSE classrooms, teachers' talk to focus children was negatively correlated with children's interactions with peers ($r[318]=-.112$, $p<.05$) (Table 9). However, teachers' proximity to children with disabilities was not significantly correlated to them partnering with other children.

Interestingly, teachers reported using similar methods to facilitate peer interactions as ECSE teachers, particularly modeling. For example, when asked how they support children's social interactions, Teacher 10 (Classroom 4-108, ECE: community-based center) reported, "modeling is a lot of it. Just saying what you're hoping that [focus child with disability] will mirror or watching it, and then sort of interjecting to steer conversations in a certain direction." Teachers described taking an active role in trying to model and create opportunities for social interactions. Additionally, while a larger class size appeared to benefit peer interactions in the co-teaching classrooms, ECE teachers described it as a challenge and addressed it by partnering with children themselves. Teacher 9 (Classroom 4-107, ECE: community-based center) reported that children sometimes "kind of drift away from [child with disability] cause there's like so many kids…so I will suggest activities." ECE teachers still reported trying to support children with disabilities in ways that often reflected the teacher having a central role in creating and

guiding interactions, similar to the ECSE teachers. This could have contributed to their talk with focus children with disabilities being negatively correlated with them partnering with other children. However, ECE teachers did not mention these strategies in relation to supporting children's individualized goals, like ECSE teachers.

ECE teachers uniquely described challenges balancing the needs of a full class with the needs of children with disabilities. These challenges were sometimes apparent when they described peer interactions between children with and without disabilities. For example, Teacher 10 (Classroom 4-108, ECE: community-based center) reported a situation where the focus child with developmental delays was playing with a peer and a disagreement arose. She reported, "I think that's our biggest challenge is the kids who do have a little bit longer processing times, sometimes other friends get swept a bit under the rug in terms of trying to get this kid over this situation." She found it challenging to help the children work through the problem while addressing the individual needs of the child with a developmental delay. Interestingly, the large class size in ECE classrooms appeared to be a barrier to children's social interactions while it was a facilitator in co-teaching classrooms. Together, the results from the ECE classroom indicate that teachers attempted many of the same strategies as ECSE teachers and had the benefit of many peers like the co-teaching classrooms, but they had difficulty effectively using these strategies and classroom features.

In sum, the three models scored similarly on the classroom-level measure evaluating adults' facilitation of peer interactions, yet individual child experiences (measured by CIRCLE) and teacher interviews revealed different mechanisms underlying their scores. The models' differential benefits and challenges have implications for how each of the models could improve supports for the peer interactions of children with disabilities.

Service Delivery Model and Individualized Inclusive Experiences

The final research question asked, *how do features of the service delivery model influence the individualized learning experiences of children with disabilities?* To answer this question, I looked at areas where analysis from CLASS, ICP, and CIRCLE jointly revealed differences in the experiences of young children with disabilities in the three service delivery models (Co-teaching: public school, ECSE: public school, and ECE: public school). CLASS and ICP items were both examined as classroom-level measures of inclusive education quality, reflecting the dual importance of global and inclusion quality in shaping young children's inclusive experiences. CIRCLE analyses identified differences between teachers' instructional practices for children with and without disabilities within each model. Finally, practitioner interviews provided information about the inclusion model-related structures and processes that influenced children's inclusive experiences. Two important patterns were observed regarding children's individualized experiences of inclusive education quality: 1) teacher feedback emerged as an important example of how the models differed in regard to intentional instruction, 2) models differed in both the amount of academic content and how it was taught.

Teacher Feedback Quality as Example of Intentional Instruction

Teacher feedback is a key instructional strategy to intentionally support children's learning, as reflected by it being the only specific strategy included in all three quantitative measures as a standalone dimension or item. The Quality of Feedback dimension on the CLASS measures the extent to which teachers provide feedback that expands learning and encourages continued participation in an activity or interaction. Practices that are measured in the CLASS Feedback dimension include scaffolding, utilizing feedback loops (i.e., follow-up questions, back-and-forth exchanges), prompting thought processes (e.g., asking children to reflect on and

explain thinking), providing new information that clarifies or adds to children's responses, and providing encouragement that supports children's persistence. The Feedback item on the ICP recognizes the frequency with which adults provide feedback on children's learning efforts and processes (as opposed to just products), the use of verbal and nonverbal feedback appropriate to children's developmental level, the extent to which classroom adults provide feedback in individualized and supportive ways, and the creation of opportunities for children to reflect on their own work. The three models slightly differed on CLASS's Feedback item with the ECSE classrooms scoring the lowest, though all three classrooms scored within the "mid-range." Additionally, classrooms all averaged scores within the "minimal" to "good" range on the ICP, though there was a larger difference between ECE classrooms and ECSE classrooms (Table 10). The ECE and Co-teaching classrooms scored higher than the ECSE classrooms on the CLASS Feedback item because they more frequently added to children's responses to encourage back-and-forth exchanges, asked follow-up questions, and displayed more instances of scaffolding children's responses before giving corrective feedback. The ECE classrooms scored higher than both public school models on the ICP because teachers more frequently commented on children's efforts and learning process as opposed to their product.

Table 10.

Feedback CLASS and ICP Scores by Model

Inclusion Model	CLASS *Quality of Feedback* Scores	ICP *Feedback* Score
Co-teaching: Public School	4.75	4.5
ECSE: Public School	3.2	4
ECE: Community-Based Center	4	5.5

The classrooms' ICP scores initially indicated that organizational context may be a factor in the feedback teachers provided because the public school classrooms scored similarly, but were more different from the ECE: community-based classrooms. However, upon further investigation using CIRCLE and interview data, service delivery models appeared to differ in the types of feedback given to children with disabilities compared to their peers. In particular, CIRCLE allowed a count of how often teachers employed both positive and negative feedback, as well as analyses regarding the use of feedback in relation to academic content and child engagement. Different feedback patterns emerged for each of the service delivery models that illustrated both teachers' use of feedback, specifically, and intentional teaching strategies more generally.

ECSE Classrooms –Teacher feedback by disability status. Because teachers across the three models displayed similar frequencies of both positive and negative feedback (with large variances) during CIRCLE observations, I looked at the two types of feedback individually and as a composite variable reflecting both (a general measure of Teacher Feedback). CIRCLE analyses revealed that children with and without disabilities experienced different amounts of feedback within the ECSE model. Specifically, when academic content was being presented (that is, when academic content was coded as happening within the classroom context component of CIRCLE), children with disabilities got more feedback (M=.064, SD=.24) compared to their peers without disabilities (M=.029, SD=.167; $t[670.14]=-2.33$, $p<.05$) in ECSE classrooms. This difference in feedback across children with and without disabilities was not observed in co-teaching or ECE classrooms. Additionally, when the two types of feedback were separated, analyses showed that children with disabilities in ECSE classrooms got more negative feedback (M=.029, SD=.168) than their peers without disabilities (M=.008, SD=.089; $t[751.39]=-2.23$,

p<.05). This pattern was also not observed in co-teaching and ECE classrooms, where the amount and types of feedback that children with and without disabilities received was not significantly different.

Although ECSE teachers provided children with disabilities with more feedback, their feedback was significantly positively correlated with academic responses (either verbal/gestural or through object manipulation) for both children with disabilities (r[956]=.063, p<.05) and their typically-developing peers (r[478]=.091, p<.05) (Table 11). ECSE teachers were the only ones whose feedback was positively correlated with academic responses for children with disabilities. This pattern could indicate that ECSE teachers' feedback was uniquely able to support the active academic engagement of children with disabilities.

Table 11.

ECSE Classrooms –Correlation between Teacher Feedback and Children's Academic Engagement

Disability Status	Academic Attention	Academic Response[a]
Children with Disabilities	-.034	.063*
Children without Disabilities	-.015	.091*

Note: [a]: "Academic response" captures verbal and gestural responses as well as responses in the form of object manipulation. *Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed)

Although the provision of feedback, specifically, did not frequently come up in the interviews, practitioners' interview responses indicate that ECSE teachers more often focused their intentional instruction on addressing the IEP goals of children with disabilities. This aligns with the above CIRCLE results for ECSE classrooms and would help explain why their feedback was able to engage children with disabilities in academic responses. For example, when Teacher 7 (Classroom 3-106, ECSE: public school model) was asked how she differentially approaches

supporting the progress of children with and without IEPs, she responded that children with IEPs "need more one on one time with me. And it has to be intentional to make sure they're getting what they need, making sure I've gotta take data on their goals and make sure that there's a time during the day that they'll be able to show me that goal." In contrast, she reported supporting the progress of children without IEPs in "more of a general way." Together with the progress monitoring results reviewed earlier, her response indicates that ECSE teachers more intentionally and consistently addressed both instruction and data collection for children with disabilities compared to their peers without disabilities. Teacher 5 (Classroom 2-104, ECSE: public school model) similarly described her process for planning general curriculum objectives as being heavily shaped by children's individual IEP goals. She reported, "in each weekly lesson plan, I always have a box that says, 'working on these goals for this week.' A following directions goal [for example], and I'll put the initials from the IEP of each of the students that have a similar goal." She described another example, saying "we do a book and we do internet research on that. Then a goal might be, I don't know, a friend's learning colors or concepts: big, small, and those things." Thus, full-class activities were often centered around the particular IEP goals of children with disabilities. This focus on shaping classroom activities based on children's IEP goals could contribute to the use of more intentional instructional strategies, including feedback, with children with disabilities, and could have increased the likelihood of them academically responding.

Co-Teaching Classrooms –Balancing children's needs across adults. In contrast to the ECSE classrooms, in the Co-teaching classrooms, teachers reported that the Co-teaching structure helped them dually focus on children with and without disabilities as they planned and implemented curriculum. Rather than lessons centering the IEP goals of children with

disabilities, they appeared to first be developed from a general education standpoint and then accommodations and modifications were added to ensure children with disabilities were included. For example, Teacher 2 (Classroom 1-101, Co-teaching: public school), the designated SPED teacher in her room, described her lesson planning process by saying, "[Gen ed teacher] takes care of a lot of the Gen Ed curriculum lesson plans. And I am the one that kinda goes in and helps tweak it to include the special needs students." The lesson plans were generally developed first to incorporate the curriculum-based goals and standards and then the needs of children with disabilities in the classroom was added to it. That process was different from the ECSE classrooms. Similarly, Teacher 3 (Classroom 1-103, Co-teaching: public school), in the other co-teaching classroom, reported that a benefit of the co-teaching model was that "it allows for the one teacher to be focused on maybe a larger set of kiddos and the other teacher to work with the smaller groups a little bit more." Thus, co-teaching allowed a division of labor to ensure someone was focusing on the needs of both children with and without disabilities.

At the same time, both the designated-SPED teacher and the designated-general education teacher were cognizant of children's IEP goals and worked on them throughout the school day. For example, Teacher 1 (Classroom 1-101, Co-teaching: public school) described one way she keeps track of children's goals and incorporates them into her instruction as the general education teacher. She explained that,

> "they tell me all the goals and what is expected by this time, each benchmark. And then [SPED teacher], when she had free time, she posts the goals out on our data cabinet so that way it's visual…so we try to talk about it. I try to be mindful of like morning circle. If there's something that fits in with an IEP goal, I try to direct it towards that kid."

Though she was the general education teacher, she was always aware of children's IEP goals and what they were working on so that she could incorporate them into her instruction. Teacher 3 (Classroom 1-103, Co-teaching: public school), the designated SPED teacher for her classroom,

also explained, "considering we are responsible for taking data for all of the children in the classroom, we are very vigilant about interacting with all students throughout the day." Both co-teaching teams reported that they were dually responsible for teaching and regularly collecting data for all children. Thus, co-teachers were able to structure their lesson plans to incorporate intentional support for all children while also being more flexible in their roles when it came to actual instruction. In effect, having both a "SPED" teacher and a "general education" teacher allowed the co-teaching classrooms to consistently use intentional instruction, including feedback, to support both children with and without disabilities.

Co-teachers' ability to dually incorporate general education goals and children's IEP goals may have contributed to their feedback being positively correlated with academic attention in both children with disabilities ($r[637]=.102$, $p<.01$) and their typically-developing peers ($r[318]=.119$, $p<.05$). However, there were some differences between children with and without disabilities in regard to children's academic responses. Teacher feedback was only correlated with academic responses for children without disabilities ($r[318]=.112$, $p<.05$) (Table 12). It is not possible to say whether or how children's abilities contributed to this difference in academic responding. However, based on the differences in ECSE and Co-teaching teachers' approaches to planning curriculum around children's IEP goals, teachers in co-teaching classrooms may not have consistently provided feedback that was individualized enough to elicit more active engagement.

Table 12.

Co-Teaching Classrooms –Correlation between Teacher Feedback and Children's Academic Engagement

Disability Status	Academic Attention	Academic Response[a]
Children with Disabilities	.102**	.009
Children without Disabilities	.119*	.112*

Note: [a]: "Academic response" captures verbal and gestural responses as well as responses in the form of object manipulation. *Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).

ECE classrooms –General support and differential engagement. A unique pattern also emerged in the ECE community-based classrooms. There were no significant differences in the amounts or types of feedback children with and without disabilities received. Yet, teacher feedback was correlated with different types of engagement for children with and without disabilities. Teacher feedback was significantly positively correlated with academic attention for children with disabilities ($r[318]=.147$, $p<.01$) and academic responses for children without disabilities ($r[638]=.181$, $p<.01$) (Table 13).

Table 13.

ECE Classrooms –Correlation between Teacher Feedback and Children's Academic Engagement

Disability Status	Academic Attention	Academic Response[a]
Children with Disabilities	.147**	.052
Children without Disabilities	.016	.181**

Note: [a]: "Academic response" captures verbal and gestural responses as well as responses in the form of object manipulation. *Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed)

Again, children's abilities could have contributed to whether feedback was correlated with academic attention or academic response. However, teachers' interviews also indicate that ECE teachers did not intentionally build children's IEP goals into their planning. This could have influenced the extent to which teachers were prepared to provide individualized feedback or

other intentional instruction that encouraged children's active academic responding. For example, when asked what she views as really important for inclusive education, Teacher 10 (Classroom 4-108, ECE: community-based center) explained, "[we're] thinking about what are potential roadblocks? So we have a lot of visuals in our room, and we're currently making more visuals for all of our kids, but specifically for a couple of them, to try to help them before anything becomes too big of a problem." Although they had one child with an IEP, the teachers more generally thought about the needs of all children whether they had specific IEP goals or not. In part, teachers took this approach because they referred primary responsibility for children's individualized goals to related service providers. For example, when asked how she works on children's individual goals, Teacher 8 (Classroom 4-107, ECE: community-based center), in the other ECE classroom, reported that both teachers are "aware of what the children are working on and what they need help with…I don't know if I have the main responsibility of it." ECE teachers appeared to more generally consider all children's abilities and needs in the classroom when planning activities and providing instruction, and heavily relied on related service providers to more directly address children's progress in IEP goals.

The administrator for the ECE program affirmed the perspective that related service providers should take the lead in planning and intentionally working on children's IEP goals. When asked how the program partners with related service providers to address the needs of children with disabilities, Administrator 4 replied that, "if they need some things from us, they kinda tell us what they need, and we kinda talk about what's feasible and what's not. It's more of a partnership, but they kinda take the lead once a child has been identified as needing services." Thus, the ECE community-based practitioners primarily deferred to related service providers to support the individualized needs of children with disabilities. These approaches to planning and

instruction are connected to the previously discussed finding that related service providers were solely responsible for tracking children's progress on IEP goals in ECE programs. ECE teachers clearly differed from ECSE and Co-teaching teachers in this way. ECE teachers' approach to incorporating the needs of children with disabilities could have influenced their ability to provide individualized instruction and intentional instructional strategies that maximize active engagement and learning for children with disabilities.

Academic Content and Concept Development

As discussed in research question one, children in public school classrooms were exposed to significantly more academic content than community-based classrooms. ECSE teachers, in particular, presented the most academic content out of the three models (Figure 7). Additionally, ECSE teachers were the only ones whose general conversation was positively correlated with the presentation of academic content ($r[548]=.259$, $p<.01$). However, academic content was largely presented in a rote, direct instruction fashion as opposed to developing children's ways of thinking. This instructional approach was indicated by the ECSE classrooms' relatively low score on the CLASS's Concept Development dimension compared to the other two models – ECSE classrooms scored in the "low" range while the other classrooms scored within the "mid-range" (Table 14). The Concept Development dimension on the CLASS measures teachers' use of instructional discussions and activities that promote higher-order thinking skills and cognition as opposed to rote instruction. Components of this item include the extent to which teachers promote analysis and reasoning (e.g., open-ended why and/or how questions, problem-solving, experimentation, and classification), provide opportunities for brainstorming and generating new ideas or products, integrate concepts, and connect content to children's real-world experiences.

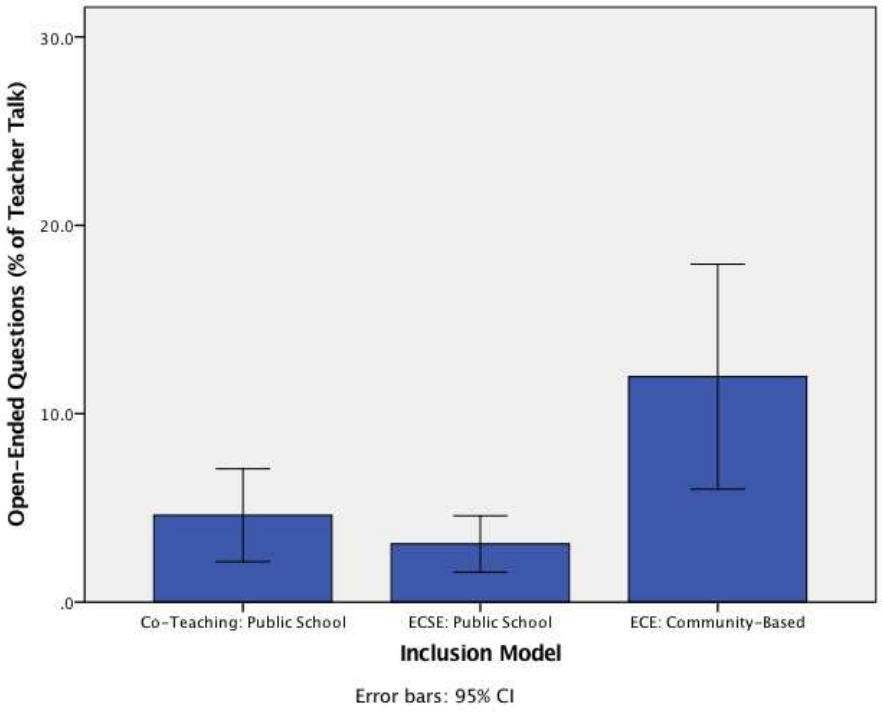
Table 14.

Concept Development CLASS Score by Model

Inclusion Model	Concept Development Score
Co-teaching: Public School	3.25
ECSE: Public School	2.08
ECE: Community-Based Center	3.75

While the ICP did not separately assess such promotion of higher-order thinking, the differences across the models in this global quality dimension was somewhat evident in children's individual experiences. When academic content was being presented during CIRCLE observations, children with disabilities were asked significantly more open-ended questions in the ECE classrooms (M=.12, SD=.33) compared to both the ECSE (M=.03, SD=.173; t[131.14]=-2.86, p<.01) and Co-teaching classrooms (M=.046, SD=.21; t[157.49]=-2.25, p<.05) (Figure 13).

Figure 13. *Open-Ended Questions when Academic Content was Presented*



An important factor in this CLASS score difference may be the fact that teachers in both Co-teaching and ECE classrooms were evaluated using a global quality measure, specifically the CLASS. Teachers' evaluation using the CLASS (or any global quality measure) may have been especially important for the Concept Development dimension because classrooms who did and did not receive global quality evaluation and feedback differed the most in this dimension out of the CLASS's 10 dimensions.

Both teachers and administrators in the co-teaching and ECE classrooms described how evaluating teachers using a global quality measure improved their ability to support higher-order thinking skills rather than solely using rote instruction. For example, Teacher 2 (Classroom 1-101, Co-teaching: public school model) recalled,

> "we've all realized that we ask those kids way too many yes/no questions, that's through our CLASS observation. We're great at asking other questions to the kids that have great language, and maybe not dual language learners, and those are our kids that we always go to for the longer answers, the harder answers. But how can we change our answer, or questions, for those kids [so] that they can still understand, and that they can still communicate their answer."

The CLASS facilitated reflection on their practice and prompted the teachers to make changes that specifically meant asking more open-ended questions to children with disabilities and children who are dual language learners. Administrator 1 (Program 1, Co-teaching: public school model) described structuring professional development around instructional strategies assessed in the CLASS, saying "when we would have debriefs about those CLASS observations, teachers had a lot of questions about why they got the scores that they did, what they could do to improve those scores, so we did some professional development around that." Using the CLASS to inform professional development helped them determine how to support teachers' use of higher-quality global instructional practices.

None of the ECSE teachers were evaluated based on a global quality measure. Instead, they were evaluated based on their incorporation of state standards into lesson plans (as previously discussed), the provision of accommodations and modifications, and individual children's participation and progress. For example, Administrators 2 (Program 2, ECSE: public school model) and 3 (Program 3, ECSE: public school model) both reported conducting observations in which they primarily provided feedback on teachers' facilitation of individual children's engagement. Administrator 2 explained that her instructional observations are "really specifically focusing on student engagement, not necessarily what the teacher is doing. That does feed into it, but it's really about what the teacher is doing to facilitate that student engagement, and how are students responding." Administrator 3 provided an example of feedback she provides teachers, saying "sometimes, its –I'll just see a little thing. I'm just like, 'Have you noticed that this particular kid always seems to be sitting to the side, or sitting in the back,' or something?" Thus, administrators' feedback to teachers in ECSE programs was primarily related to individualization, reflecting the focus of these classrooms. Because this approach was unique to ECSE classrooms, support for concept development appeared to be a matter of service delivery model, rather than organizational context.

In sum, the three service delivery models appeared to differ in the amount and types of feedback teachers provided, as well as the correlations between teachers' feedback and children's active engagement. Although teacher feedback is one instructional strategy, teacher interviews revealed that their feedback practices may have been indicative of their general approaches to intentional instruction for children with disabilities. Additionally, service delivery models differed in the extent to which they taught academic content using instructional practices

that are reflective of global quality indicators. The differential ways teachers were evaluated appeared to particularly influence their instructional approaches.

Chapter 5: Discussion

The purpose of this study was to investigate the potential influence of contextual features on inclusive education quality and child experiences. Analyses examined classroom-level global and inclusion quality, teacher and administrator perspectives on inclusive practices, and individual child classroom experiences. The study was heavily grounded in a bioecological perspective and DEC and NAEYC's (2009) definition of inclusive education. I conceptualized children's proximal processes within inclusive classrooms (that is, their direct interactions with teachers, peers, and objects) as being influenced by the more distal inclusive education context categorized by Odom and colleagues (1999). In the present chapter, I first summarize findings to illustrate how contextual features appeared to influence children's inclusive education. Next, I situate the findings within previous literature on inclusive education in order to highlight key contributions of the study and implications. Findings are discussed in relation to the three components of inclusive education –access, participation, supports. Finally, I discuss study limitations and future research directions.

Findings Summary

Multiple differences were found between the two organizational contexts represented in the three cases. First, community-based centers appeared to exhibit a higher level of regard for student perspectives by incorporating children's interests into lesson planning, facilitating child-led activities, and intentionally supporting all children's development of autonomy. Community-based ECE teachers also demonstrated greater support for children's sustained engagement during free-choice activities and play. Public school classrooms, however, including both Co-teaching classrooms and ECSE classrooms, incorporated more academic content into classroom activities and closely followed state early learning standards during lesson planning.

Additionally, public school classrooms utilized more progress monitoring to determine the abilities and learning needs of all children. Public school and community-based classrooms particularly differed in their monitoring of children's progress on IEP goals.

There were also several differences between the three models that appeared to be contributable to service delivery model features. First, ECSE classrooms had the fewest peer interactions, and ECSE teachers often appeared to support peer interactions in ways that prioritized the creation of learning opportunities for children with disabilities. In contrast, Co-teaching classrooms appeared to encourage peer interactions largely by preparing typically-developing children to interact with their peers with disabilities. This seemed to contribute to children in Co-teaching classrooms having more peer interactions within adult proximity than children in ECE or ECSE classrooms. Finally, ECE community-based teachers described supporting peer interactions through modeling and direct support. However, children with disabilities had fewer interactions compared to their typically-developing peers in ECE classrooms, and teachers expressed challenges balancing the social needs of children with and without disabilities.

Children's inclusive experiences also differed between the three models in ways that implicated differential instructional priorities and teacher supports. In ECSE classrooms, teachers largely directed intentional instruction, particularly feedback, to children with disabilities. This appeared to support their active academic engagement. However, teachers described less of a focus on intentionally supporting the learning opportunities of children without disabilities at the same frequency and intensity. Additionally, ECSE teachers presented the most academic content amongst the three models, but supported children's higher-level concept development less. In part, ECSE teachers' approaches to instruction appeared to align with the ways they were

evaluated. That is, ECSE programs largely assessed teachers based on their ability to individualize instruction and ensure all children's engagement, particularly children with disabilities. That appeared to reflect programs' priorities as opposed to more general global quality features.

ECE community-based and co-teaching public school classrooms differed from ECSE classrooms in several ways. Co-teaching classrooms demonstrated few differences in the academic content and engagement of children with and without disabilities. Teachers described the co-teaching structure as allowing them to simultaneously support all children through their lesson planning processes and data collection responsibilities. Finally, ECE classrooms appeared to approach intentional instruction from a more generalist perspective. Although there were not differences in the feedback children with and without disabilities received, ECE teachers primarily deferred responsibility for children's IEP goals to related service providers. Both Co-teaching and ECE model teachers were evaluated using a global quality measure, specifically the CLASS. Practitioners indicated that the process of being evaluated using the CLASS supported teachers' use of the practices that align with a high level of global quality.

Facilitating Children's *Access* to the General Education Curriculum

Defining the General Education Curriculum

The DEC and NAEYC (2009) inclusive education statement put forth that every young child should have "access to learning environments, to typical home or educational routines and activities, and to the general education curriculum" (p. 2). Similarly, policy has ostensibly advocated for the inclusion of children with disabilities into the general, or regular, education classroom in order to facilitate access to the general education curriculum (Individuals with Disabilities Education Act [IDEA], 2004; U.S. Department of Health and Human Services &

U.S. Department of Education, 2015; U.S. Department of Education, 2017). However, findings in the present study necessitate a closer inspection of what may be defined as "typical" or "general education." In particular, findings indicate the possibility that the general education curriculum may be differentially interpreted or accessible across inclusion models. Differences in global quality features, as measured by the CLASS, stand as evidence of the general curriculum that children had access to and how teachers approached its instruction.

One way the general education curriculum may be defined is by the primary academic content taught in early childhood classrooms (e.g., literacy, numeracy, science). In that regard, ECSE and Co-teaching public school classrooms in the present study provided more academic content compared to community-based classrooms. Previous research analyzing the nationally-representative Early Childhood Longitudinal Study's Birth Cohort (ECLS-B) has similarly reported that Head Start and public preschool programs provide more math and literacy content compared to community-based centers (Bassok, Fitzpatrick, Greenberg, & Loeb, 2016). Disproportionate presentation of academic content may contribute to children in public school preschool programs making greater academic gains compared to children in community-based centers (Forry, Davis, & Welti, 2013; Winsler et al., 2008). In this way, the focus on academic standards in public preschool programs could support access to the general education curriculum for children with disabilities within inclusive classrooms.

Alternately, the general education curriculum may be conceptualized as encompassing instruction for both academic content and children's non-academic skills, such as self-regulation, problem-solving skills, and other higher-level cognition skills. Broader conceptualizations of school readiness, in particular, have emphasized the importance of facilitating children's development of self-regulation, social skills, and positive approaches to learning (e.g., task

persistence, pursuit of learning opportunities) (Blair, 2002; Brown, 2010; Ursache, Blair, & Raver, 2012). Non-academic skills are also a part of some early learning standards, such as the "approaches to learning" domain within the Kansas Early Learning Standards (Kansas State Department of Education [KSDE], 2013). However, the inclusion of such non-academic standards has been inconsistent nationally (Scott-Little, Lesko, Martella, & Milburn, 2007). Evidence suggests that teaching non-academic skills positively influences children's later academic achievement (e.g., Cooper, Moore, Powers, Cleveland, & Greenberg, 2014; Li-Grining, Votruba-Drzal, Maldonado-Carreño, & Haas, 2010; McClelland & Wanless, 2012). Such skills may be particularly important for children who are already experiencing academic challenges due to developmental delays or disabilities, and those who are at risk for future achievement difficulties (Cooper et al., 2014; Raver et al., 2011; Rhoad-Drogalis, Sawter, Justice, & O'Connell, 2018).

In the present study, ECSE classrooms demonstrated fewer practices that are associated with supporting children's conceptual development or higher-level cognition. The prominence of teacher-led activities and rote instruction was reflected by the teacher talk children experienced (e.g., relative frequency of open-ended questions) and ECSE classrooms' global quality scores, particularly the Concept Development and Quality of Feedback dimensions within the CLASS's Instructional Supports domain. The present study results largely align with those of a large study examining global quality in different early childhood programs. Pelatti, Dynia, Logan, Justice, and Kaderavek (2016) used the CLASS to evaluate the global quality of publically-funded ECE classrooms (i.e., ECE classrooms in public schools) and "inclusive ECE" classrooms, which were most similar to the ECSE inclusion model in the present study. The authors found that the two types of classrooms differed the most in the CLASS's Instructional Support domain. The

classrooms that were analogous to ECSE classrooms scored significantly lower than other public school classrooms in the Concept Development, Quality of Feedback, and Language Modeling dimensions (Pelatti et al., 2016). Together, Petatti et al. (2016) and the present study indicate that the instructional practices used in ECSE classrooms may potentially influence children's access to the general education curriculum when it is conceptualized as being inclusive of learning experiences that expand children's ways of thinking and learning. Supporting teachers' ability to balance responsiveness to children's individualized needs with the provision of a broad general early childhood curriculum (encompassing both academic content and non-academic skills) could be an area for further examination and development within ECSE classrooms. In as much as inclusive classrooms should provide access to the general education curriculum, it is important that individualized supports are consistently grounded within both academic and non-academic skill development.

One of the most noteworthy ways the ECE community-based classrooms differed from the two public school models was related to their approach to the general education curriculum. ECE teachers scored substantially higher than both ECSE and co-teaching classrooms on the CLASS dimension, Regard for Student Perspectives. During interviews, ECE practitioners emphasized the importance of supporting children's development of autonomy and self-regulation, incorporating child interests into activities, and empowering children to take ownership of what they learned. Thus, their approach to this global quality dimension emphasized many of the non-academic skills and dispositions that might be considered a part of a broader conceptualization of the general education curriculum. However, ECE teachers were observed presenting less academic content than Co-teaching or ECSE teachers. Indeed, providing many opportunities for child-led activities and supporting self-regulation can support

academic skills and later school achievement (Curby, Downer, & Booren, 2014; Hur, Buettner, & Jeon, 2015; Kern & Clemens, 2007). Nonetheless, balancing adherence to rigorous academic standards with more child-led activities may be more beneficial for children than eschewing such standards (Goldstein, 2008; NAEYC, 2009). That is particularly true for children with disabilities who require individualized accommodations and intervention (Carta, Schwartz, Atwater, & McConnell, 1991; Greenwood et al., 2011).

Planning for the General Education Curriculum

ECE teachers' planning processes reflected their approach to the general education curriculum. They did not discuss integrating early learning standards as a part of their lesson planning processes, but did intentionally provide opportunities that encouraged children's development of autonomy and positive approaches to learning. Although community-based centers are not required to engage in the same accountability measures as public school classrooms, greater alignment with early learning standards could positively contribute to their ability to provide necessary academic content. In the present study, public school teachers' consideration of early learning standards during lesson planning appeared to contribute to their intentional presentation of academic content.

Interestingly, qualitative analyses revealed important differences between the lesson planning processes of ECSE and Co-teaching classrooms, despite them both being housed in public schools that required alignment with academic standards. ECSE teachers largely centered the IEP goals of children with disabilities during every aspect of lesson planning and instruction. In effect, ECSE teachers appeared to sometimes be focusing on supporting children's IEP progress in lieu of a broader focus on general curriculum, even though their lesson plans were grounded in academic content areas.

In contrast, teachers in Co-teaching classrooms described planning classroom activities around a general education curriculum and then incorporating the individualized goals of children with disabilities. The larger proportion of typically-developing peers may have also influenced co-teachers' lesson planning approach as they more consistently referenced being responsible for the instruction and progress monitoring of children without disabilities. These factors could have contributed to Co-teaching classrooms having a higher Concept Development and Quality of Feedback score than ECSE classrooms. Co-teachers' approach to lesson planning may also represent a reason that co-teaching classrooms have been found to have a higher global quality than hierarchical two-teacher or single-teacher classrooms (Shim, Hestenes, & Cassidy, 2004). Both teams of co-teachers described each teacher bringing a unique set of philosophies, priorities, and skill sets to lesson planning and instruction. Co-teachers' lesson planning reflected a broader interpretation of the general education curriculum that more explicitly attempted to balance developmentally-appropriate supports for both children with and without disabilities. The different lesson planning processes used by Co-teaching and ECSE teachers exemplify divergent approaches to providing the general education curriculum to both children with and without disabilities within inclusive classrooms.

Preparing Children for their Future General Education Curriculum

It is important to recognize that access to the general education curriculum holds particular significance in preschool inclusive classrooms because of the implications for children's future placement and learning opportunities. Once school-age children are placed in a certain type of setting (either self-contained or inclusive), they are more likely to stay in that setting than move to a different placement (Guralnick, Neville, Hammond, Connor, 2008; White, Scahill, Klin, Koenig, & Volkmar, 2007). If children do change placements, evidence suggests

they are more likely to be moved to a less inclusive setting (Guralnick et al., 2008). While inclusive education is not defined by physical placement alone, placement necessarily influences the instruction and supports students subsequently receive (Jackson, Ryndak, & Wehmeyer, 2010; Ryndak, Jackson, & White, 2013). This may, in part, be because inclusive and self-contained classrooms are operated in ways that primarily prepare children for the same type of setting they are presently in. Specifically, early childhood inclusive programs may prepare children to more fully participate in inclusive classrooms in the future (Guralnick et al., 2008).

The differences in both academic content and support for non-academic skills observed in the present investigation beg the question, are early childhood inclusion models differentially preparing children for future inclusion in general education classrooms? This is a complex question that cannot be answered by the present study. However, the patterns observed in this investigation related to how teachers appeared to define and provide the general education curriculum represent areas for future research to study. Concurrently looking at the ways teachers in different inclusion models approached providing access to the general education curriculum revealed potentially divergent strengths and needs in this component of inclusive education. The consequences of such differences should be further explored.

Differential *Participation* with Teachers and Peers

The Participation section of DEC and NAEYC's (2009) position statement considers the need for inclusive classrooms to provide individualized accommodations and supports for young children with disabilities to fully participate in play and learning activities with peers and classroom adults. The present study indicated that such individualized supports were differentially developed and managed by classroom teachers across the three inclusion models. Additionally, patterns of peer interactions differed greatly in ways that were associated with

teachers' approach to facilitating social interactions between children with and without disabilities. Such differences were particularly evident in classrooms' ICP item scores and children's individual experiences during CIRCLE observations.

Teacher-Child Interactions

Individualizing instruction. Inclusion models appeared to differ in who was responsible for individualized supports for children with disabilities and the extent to which classroom-wide activities were structured around the need to individualize instruction and teacher-child interactions. As previously discussed, ECSE teachers were uniquely vigilant in ensuring classrooms activities addressed children's IEP goals. Prioritizing the individualized needs of children with disabilities in such a way could have contributed to ECSE teachers facilitating children's active engagement. ECSE classrooms were the only ones in which teachers' feedback was positively correlated with academic responses from children with disabilities. ECSE teachers were also significantly more likely to be in close proximity with a focus child with a disability and to be solely talking to a focus child with a disability compared to teachers in the other models. ECSE teachers' focus on individualization in the present study may contribute to Soukakou and colleagues' finding that such classrooms have a higher total inclusion quality compared to child care, Head Start, and public preschool programs (Soukakou, Winton, West, Sideris, & Rucker, 2014). However, the present study did not find substantial differences in programs' total ICP score, similar to other studies (Vlachou & Fyssa, 2016). Differences in individual item scores appeared to average out, making the individual item scores potentially more useful for examining classrooms' inclusion quality.

ECE community-based teachers uniquely reported referring to related service providers most of the responsibility for working on children's IEP goals and collecting data on their

individualized progress. ECE teachers were aware of children's general needs due to regular communication with service providers and attempted to be responsive in their teacher-child interactions. However, ECE teachers did not appear to explicitly shape their instruction and interactions with children to support specific IEP goals. For example, their lesson planning processes did not explicitly incorporate children's IEP goals or designated support needs, like those of ECSE and Co-teaching teachers. If other community-based centers take a similar approach, this may contribute to Soukakou et al.'s (2014) finding that child care centers exhibit the lowest total inclusion quality.

ECE teachers' inconsistent consideration of children's specific IEP goals underscores the necessity of collaboration for high-quality inclusive education (Leatherman, 2007; Lieber et al., 2002; Purcell, Horn & Palmer, 2007). More specifically, community-based teachers may require professional collaboration in which related service providers more explicitly support teachers' ability to embed individualized instruction into classroom activities and collect progress monitoring data. In the present study, professional collaboration in ECE classrooms primarily took the form of short check-ins when professionals came to pull children from the room. ECE teachers did not benefit from related service providers being in the building permanently or on a more consistent basis, like teachers in the two public school models. Embedding children's individualized learning goals into typical classroom activities would be an important way for ECE teachers to better support children's progress on IEP goals (Grisham-Brown, Pretti-Frontczak, Hawkins, & Winchell, 2009; Horn, Lieber, Li, Sandall, & Schwartz, 2000; Rakap & Parklak-Rakap, 2011). Additionally, ECE teachers taking a more active role in data collection for children with disabilities would help satisfy the need for authentic assessment within children's typical routines (Bagnato, Goins, Pretti-Frontczak, & Neisworth, 2014; Fox, Carta, Strain,

Dunlap, & Hemmeter, 2010; Gettinger & Stoiber, 2012). Previous research has found that both center-based Head Start and non-Head Start ECE teachers have described challenges implementing such strategies and supporting IEP goals (Bruns & Mogharreban, 2007; Muccio, Kidd, White, & Burns, 2014). Future research could continue to explore the nature of this concern for community-based ECE teachers. Additionally, future investigations could examine how professional collaboration could contribute to teachers' skills in order to improve the quality of inclusive education children with disabilities experience.

Utilizing free-choice activities. There were individual ICP items on which ECE teachers scored highly. In particular, ECE classrooms had the highest scores in *Adult Guidance of Free-Choice Activities and Play*. They also uniquely used free-choice time as a primary (general education) instructional period. Community-based teachers were the only ones whose teacher talk was positively correlated with academic content during free-choice, or centers, time. Additionally, children with disabilities, in particular, were engaged in more academic attention during free-choice time in the community-based classrooms. This could have been, in part, because community-based teachers in the present study facilitated an optional teacher-led center during free-choice time as a replacement for small group activities. However, informal field notes indicated that focus children were rarely observed participating in the teacher-led center.

During interviews, community-based teachers specifically cited free-choice time as an important instructional period, particularly for children who had difficulties learning during other classroom activities. Interestingly, a recent large-scale study similarly found that teachers in full-day preschool programs implement more instruction during child-initiated activities and play compared to teachers in part-day programs (Reynolds et al., 2014). In that study, both types of programs included children with disabilities, though the authors did not differentiate results by

disability status. Because community-based classrooms are typically full-day programs, free-choice time might be a particularly important routine for instruction. Future research might explore how to build on this strength within community-based centers to effectively utilize free-choice periods as a key opportunity to implement interventions and support high-quality inclusion.

Mechanism for peer effects –Teacher responsiveness to classroom needs. Teacher-child interaction findings across the three inclusion models could potentially shed new light on research examining peer effects within early childhood classrooms. Multiple studies have found that the average skill level within a classroom (e.g., language skills) predict a child's growth in that domain (e.g., Ansari, Purtell, & Gershoff, 2016; Henry & Rickman, 2007; Justice, Petscher, Schatschneider, & Mashburn, 2011; Mashburn, Justice, Downer, & Pianta, 2009; Yeomans-Maldonado, Justice, & Logan, 2017). Research on peer effects in inclusive ECSE classrooms, specifically, has found that the average language skills of peers predicted the language skills of children with disabilities at the end of an academic school year (Justice, Logan, Lin, & Kaderavek, 2014). Peer effects were most consequential for children with disabilities whose classmates had relatively low language skills on average.

Findings in the present study suggest that the ways teachers tailor their instruction to meet children's needs may be an indirect mechanism through which peer effects emerge. Namely, when teachers view their class as generally consisting of children who are capable and ready for advanced material, they provide that; even children who could not fully comprehend said material may benefit from such rigorous and challenging content (with appropriate supports), and thus, they would indirectly benefit from their peers' higher developmental levels. Alternately, when teachers view their children as generally having lower skills that require more

remedial and narrow instruction, they would primarily provide that; that would subsequently limit the scope of the instruction children have access to. In the present study, as previously discussed, ECSE teachers appeared to teach academic content in narrower ways as a response to the needs of children with disabilities, who made up the majority of the classroom (e.g., using rote instruction, developing classroom activities more closely around children's IEP goals). Additionally, Co-teachers, who were in classrooms with a large dual language learner (DLL) population in addition to children with disabilities, acknowledged that they asked fewer open-ended questions, particularly when interacting with children with disabilities and those who are DLLs. Meanwhile, ECE teachers, whose classrooms had the fewest children with disabilities and a population that was not linguistically diverse, displayed the most open-ended questions and highest conceptual development. These findings are purely correlational, but other research has similarly found that children who have more significant language and/or cognitive impairments hear less teacher talk (Dykstra et al., 2012; Irvin et al., 2013) or different types of talk compared to their peers (e.g., more directives, less cognitively challenging questions) (Irvin, Boyd, & Odom, 2015; Sanders et al., 2016).

Potentially, the developmental level of children's peers could impact their development because of the ways it shapes teachers' instruction and expectations of children. This theory is in line with the bioecological systems framework, which emphasizes that the relationship between children's development and their environment is reciprocal (Bronfenbrenner, 1994; Bronfenbrenner & Morris, 2006). As such, children's abilities may shape each other's development by shaping the classroom environment that they share. Future research could test this by examining whether specific features of global and inclusion quality mediate the effects of children's developmental status on their peers' development within inclusive classrooms. Such

research would, in turn, have potential implications for how peer effects differentially operate across different types of inclusive classrooms.

Child-Child Interactions

Another major difference between inclusion models that emerged was children's opportunities for sustained peer interactions and friendship development. In particular, there appeared to be differences in how teachers facilitated peer interactions and used typically-developing peers as peer supports. Teachers' facilitation of peer interactions is particularly important given that one of the primarily goals of inclusive education is to facilitate social integration, friendships between children with and without disabilities, and a sense of belonging for children with disabilities (Guralnick & Bruder, 2016; Meyer & Ostrosky, 2014; Schwartz, Sandall, Odom, Horn, & Beckman, 2002; US Department of Education & Department of Health and Human Services, 2015). Differences in peer interactions across models seemed to be influenced by a number of factors, including teachers' facilitation of peer interactions, class size and the proportion of children without disabilities in the classrooms, and teachers' preparation to effectively use strategies that support peer interactions.

Teacher facilitation of peer interactions. ECSE teachers described using peer interactions as important learning opportunities for children with disabilities. However, their primary strategies for facilitating such interactions (e.g., modeling language, monitoring and regulating children's behavior) could have contributed to them becoming over-involved in the peer exchanges. Indeed, recent research has found that teachers' use of strategies that solely intervene on children's behavior regulation skills (e.g., verbal or gestural requesting) does not increase the amount of time children with disabilities are engaged in play with peers (Chang, Shih, & Kasari, 2016). ECSE classrooms were the only ones in which both teachers' proximity

and talk to children with disabilities was negatively correlated with children with disabilities partnering with other children. Moreover, teachers' descriptions of their involvement in peer interactions primarily positioned typically-developing peers as supports and models for children with disabilities rather than peers with whom they could form friendships. This approach to peer interactions in ECSE classrooms may contribute to previous research findings that children with disabilities in specialized classrooms (i.e., programs where most, but not all, children have disabilities) are less likely to form friendships compared to children in inclusive classrooms where the majority of children do not have an identified disability (Buysse, Goldman, & Skinner, 2002).

Findings in the present study suggest that ECSE teachers may benefit from more intentionally balancing instruction embedded within peer interactions (e.g., peer-mediated intervention) and strategies that explicitly facilitate friendship development and social integration. Meyer and Ostrosky (2014) argued that teachers should distinguish supporting friendship development from the implementation of peer-mediated interventions because the former provides an important context for children's social-emotional growth and development of other skills. Similarly, Brown, Odom, and Conroy's (2001) hierarchical framework to support children's peer interactions differentiated the implementation of naturalistic friendship-building strategies from interventions that explicitly teach social skills using peer supports. Future research could further explore peer interactions and friendships within ECSE classrooms, and the teacher strategies that support them within a context that includes fewer typically-developing peers.

Class size and child proportions. Interestingly, having a larger class size (between 17-20 children) had opposite effects on teachers' perceived abilities and challenges supporting peer

interactions in Co-teaching and ECE classrooms, despite both classrooms having two lead teachers. Co-teachers reported teaching typically-developing peers how to interact with children with disabilities and preparing them to initiate play. Having more peers helped this approach because teachers rarely had to draw typically-developing peers away from their play to engage with a child with a disability. Instead, teachers reported being able to bring together groups of children already playing within the same area and then letting typically-developing peers take the lead, as necessary. Previous research has indicated that teaching strategies aimed at co-engaging children with and without disabilities may be more effective at increasing children's social interactions than solely utilizing direct instruction to teach social skills to children with disabilities (Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012). In the present study, co-teaching teachers' use of this strategy may have contributed to children in co-teaching classrooms having the most peer interactions when an adult was in close proximity compared to the ECSE and ECE classrooms.

Challenges facilitating peer interactions. Unlike teachers in co-teaching classrooms, teachers in ECE community-based classrooms reported challenges having such a large class size while trying to ensure that children with disabilities were not overlooked by their peers and were able to work through any challenges that arose during peer interactions. Additionally, while ECE teachers reported using strategies that were similar to those of other teachers (e.g., modeling), children with disabilities in ECE classrooms had fewer peer interactions compared to their peers without disabilities. These findings indicate that ECE teachers had difficulty effectively implementing strategies that increase peer interactions for children with disabilities. Learning how to facilitate peer interactions between children with and without disabilities may be a particular area of need for ECE teachers who do not have an early childhood special education

background. Future research should continue to explore the influence of class size and teacher facilitation on the peer interactions of children with disabilities in different types of inclusive classrooms.

Supports for Teachers through Evaluation and Feedback

The supports component of the DEC and NAEYC (2009) conceptualization of inclusive education reflects the systems-level program features and processes that undergird practitioners' efforts, including professional development, stakeholder collaboration, service coordination, and quality frameworks (e.g., early learning standards, program quality guidelines). The influence of early learning standards on inclusion models within public schools has already been discussed as a key feature that appeared to influence the teachers' interpretation and implementation of the general education curriculum. However, perhaps the most consistent overarching feature of systems-level supports that influenced teachers' practices and children's inclusive experiences was programs' process for teacher evaluation and feedback. Although teacher evaluation was not explicitly discussed in the DEC and NAEYC (2009) statement, it arguably lies at the intersection of programs' quality frameworks and professional development. That is, the ways teachers were observed and evaluated shaped programs' professional development priorities and broader evaluations of program quality. Moreover, teachers' evaluation processes reflected program priorities and philosophies that differed by inclusion model.

Progress Monitoring

One of the biggest differences across the two organizational contexts included in the present study was teachers' use of progress monitoring and their ICP scores on the Monitoring Children's Learning item. Teachers in the two public school models collected more progress monitoring data on all children compared to ECE community-based teachers. This was largely

due to public school requirements and administrator expectations. Public school administrators all reported that teachers were expected to take extensive data. Moreover, some teacher supports were dependent on teachers providing data that justified requests for resources or that facilitated individualized coaching. In contrast, ECE community-based teachers collected curriculum-based data less often than public school teachers and referred data collection for children with disabilities to related service providers. These divergent data collection practices could have a substantial influence on teachers' ability to individualize instruction and provide intervention for children who are struggling or have disabilities (DEC, 2014; Fox et al., 2010; Gettinger and Stoiber, 2012; VanDerHeyden, Snyder, Broussard, & Ramsdell, 2008). Future research should continue to explore possible differences in data collection practices between inclusion models, and the influence that has on children's developmental and IEP goal progress.

Academic Standards and Expectations

All teachers reported having to submit their lesson plans to administrators. However, only teachers' lesson plans in the public school models (ECSE and co-teaching models) were evaluated based on their incorporation of state early learning standards. In fact, the community-based center's administrator acknowledged that centers are not required to adhere to such academic standards, which allowed them to engage in more child-directed activities. The extent to which preschool programs rely on standards and accountability measures has been heavily debated. While some scholars argue that an overreliance on standards potentially undermines early education and narrows children's skill sets (e.g., Pretti-Frontczak, 2014; Scott-Little et al., 2007), others emphasize that standards-focused policy can contribute to improved early childhood education quality and school readiness for children (e.g., LaParo et al., 2009; Logue,

2007). In the present study, public school programs' intentional incorporation of academic standards potentially contributed to teachers presenting more academic content.

Importantly, the community-based center that participated was NAEYC-accredited, which is perhaps the most well-respected national accreditation that monitors program quality. Yet, like other national accreditations, NAEYC does not require adherence to a certain set of academic standards. Instead, curriculum and teaching expectations focus on developmentally-appropriate practice, implementation of a developmentally-comprehensive curriculum, and the use of teaching approaches that are responsive to children's needs (NAEYC, 2018). Both community-based teachers and the administrator in the present study described the NAEYC accreditation as primarily influencing the center's physical environment and teachers' general approaches to classroom interactions. Meanwhile, state academic standards, such as those followed by the public school programs in the present study, explicitly name knowledge and skills that children should be taught (e.g., KSDE, 2013). The difference between the standards the govern teachers' academic content and practices could be even greater between public school programs and community-based centers that do not elect to obtain optional accreditation from NAEYC or another professional agency.

Expectations around the incorporation of early learning standards may be one feature on which inclusion models differ based on their organizational context. Based on findings in the present study, this could influence the academic content and general education curriculum that children with disabilities access. Future research should continue to explore how adherence to early learning standards differentially influence teachers' practices and the inclusive education quality that children with disabilities experience.

Global Quality Evaluation and Support

It was not just the organizational context that shaped expectations for teachers. The ECSE and Co-teaching models also differed in the ways administrators monitored and provided support to teachers. In particular, the two public school models differed on whether teachers were evaluated based on global quality features. ECSE administrators evaluated teachers based on their provision of individualized instruction and whether they facilitated all children's engagement. Teachers consequently received feedback and support based on those observations. Meanwhile, like ECE teachers, teachers in the Co-teaching model were evaluated using a global quality measure. Teachers in the Co-teaching classrooms received both individualized coaching and professional development sessions around their use of global quality teaching practices evaluated by the CLASS.

Co-teaching and ECE teachers' evaluation using the CLASS (or any global quality measure) could have contributed to them scoring higher than the ECSE classrooms in certain global quality practices, particularly those that align with the CLASS's Concept Development dimension. Both Co-teaching and ECE teachers described getting feedback on practices assessed within the Concept Development dimension (e.g., open-ended questions). These teachers reported subsequently reflecting on, and changing, their practices accordingly. The fact that feedback using a global quality measure prompted reflection and instructional changes is particularly important given the central role of reflection in many of the practice-oriented guides that aim to facilitate improved inclusive education quality (e.g., Barton & Smith, 2015b; Cate, Dell, & Whaley, 2018; Wolery & Odom, 2000)

Whether teachers were evaluated based on a global quality measure closely aligned with what teachers were generally expected to focus their instruction on (e.g., children's IEP goals, a broader general education curriculum) and how they were expected to teach (e.g., through rote

instruction, by encouraging exploration and conceptual development). This is not to say that these priorities were mutually exclusive or dichotomous. Indeed, all teachers recognized their responsibilities for all children. Rather, the differences were found in what was established first during lesson planning, how academic content was taught, and the intentional instruction and progress monitoring that children with and without disabilities differentially received. The ways teachers were evaluated is important because that shaped teacher reflection, feedback, and professional development. Future research might continue to explore the role of teacher evaluation in shaping their practices, and how that might differ across inclusion models.

Previous research has emphasized the importance of administrators in shaping programs' philosophies and attitudes towards inclusive education (Barton & Smith, 2015a; Leatherman, 2007; Gupta & Rous, 2016), and promoting the use of certain evidence-based practices (Ruble, McGrew, Wong, & Missall, 2018; Ruble, Usher, & McGrew, 2011). However, similar to Leatherman (2007), the present study findings suggest that administrators specifically support inclusive education quality through their evaluations, particularly the provision of observation and feedback. Findings suggest that what administrators look for during observations may contribute to inclusive education quality because it shapes professional development, teacher expectations, and teachers' self-reflection. In sum, teacher evaluation and feedback should be recognized as a specific way that programs support inclusive education quality. Future research could continue to examine how administrator expectations and supports differ across inclusion models and whether that influences the quality of inclusive education children access.

Limitations

The present study had several limitations that should be explicitly acknowledged. First, two of the three models only included one early childhood program. This significantly limits the

extent to which differences can be attributed to program-specific structures and process as opposed to inclusion model features. It should be noted that the present study used case study methodology and purposive sampling to allow a discussion centered around transferability (across similar contexts) rather than broader generalizability (Lincoln & Guba, 1985; Onwuegbuzie & Collins, 2007). However, the findings must be interpreted with this limitation in mind. A larger scale investigation could confirm that the differences observed in this exploratory study are attributable to inclusion models as opposed to program-specific features, and could further explore the nature and extent of said differences.

Secondly, there were limitations regarding interobserver agreement (IOA). IOA was not conducted for CLASS and ICP observations. Thus, although training and scoring procedures were followed for each tool, it is not possible to determine whether other observers would have scored the classrooms similarly. Quality comparisons were not the primary intent of the current study, but if future investigations intend to compare inclusive education quality across inclusion models, researchers should implement IOA procedures to ensure classrooms are uniformly assessed. Additionally, while IOA was conducted for CIRCLE observations, two classrooms did not allow IOA to be completed due to restrictions on the number of extra people allowed in the classroom (2-104 and 3-106). There is no evidence to suggest that those classrooms would be more challenging to conduct CIRCLE observations in (yielding a lower IOA), but this is a limitation.

Because there was only one observer, several months passed between the first round of observations for the first program (co-teaching: public school model) and the first round of observations for the final program (ECE: community-based classroom). The timing difference could have potentially influenced classrooms' global and inclusion quality because that data was

only collected during first round observations. However, all classrooms were observed after they had established classroom routines and expectations in the Fall semester, and re-established routines in the Spring semester. Therefore, classroom changes may have been minimal. Additionally, findings were all based on multiple sources of data so conclusions were not solely based on classroom-level quality measures. This could have minimized the effect observation timing differences had on findings. Moreover, I was able to collect data across a large percentage of an academic school year so CIRCLE data appropriately reflected children's individual classroom experiences across a wide cross-section of time. Future research might employ multiple observers to minimize timing differences between classrooms or alternate observations so that one classroom from each model is observed within a smaller time frame (e.g., one Co-teaching, one ECSE, and one ECE classroom are observed simultaneously followed by a second classroom of each model).

Another limitation of this study was the extent to which I examined the nature and significance of children's disabilities. Child information was collected from teachers, and was limited to the child's primary diagnosis and general abilities or concerns. Children's eligibility to participate was also solely determined by teacher report. A validated child screening or assessment tool was not used to confirm that their developmental delay or disability was within the mild/moderate range. Future research could use a validated tool to ensure that child participants represent the desired level of support needs. Additionally, because children in the present study were intended to reflect mild/moderate support needs, future research is also needed that explicitly examines the experiences of children with more significant support needs.

Finally, children's specific needs were minimally considered when determining the quality of teachers' practices or their use of accommodations or modifications. Due to the focus

on the present study, data collection and analysis focused on teacher's practices, general teacher-child interactions, and program-level supports. Future research could explicitly investigate features of high-quality inclusive education in relation to children's specific abilities and support needs. Moreover, the present study included children with reported mild/moderate developmental delays and disabilities who greatly differed in their diagnoses and developmental concerns both within and across inclusion models. Such diversity can support findings regarding programs' ability to include and accommodate children with a wide variety of abilities. However, examining how children with particular needs experience such settings would further reveal the types of supports programs need to ensure all children have access to high-quality inclusive education.

Potential Implications for Practice and Policy

While this was an exploratory study, there are several potential implications for teachers' practices as well as policy. First, it is important to understand teachers' practices in the context of program expectations. In particular, the focus of teachers' instruction (e.g., a global curriculum or individualized goals; their conceptualization of the general education curriculum), and the frequency and content of their progress monitoring closely aligned with administrator and program expectations. Findings provide some evidence that it is important for administrators to explicitly support teachers' implementation of a broad general education curriculum through targeted observation, feedback, and related professional development opportunities. Adopting a broader conceptualization of the general education curriculum that included teaching non-academic skills (e.g., self-regulation, independence) and deeper conceptual development appeared to benefit the global quality of children's inclusive experiences. Teachers in ECSE classrooms, in particular, may benefit from program expectations and associated supports that

help continuously ground their instruction in a general early childhood curriculum that is then differentiated or modified based on individual children's goals. For example, ECSE administrators could use a global quality measure to evaluate and provide feedback to teachers in addition to other evaluation processes. Meanwhile, ECE teachers in community-based programs may benefit from instructional supports that help them provide rigorous learning opportunities in alignment with state or national early learning standards. While community-based programs are not required to adhere to state standards and accountability measures, incorporating such early learning standards into teachers' practice, to some extent, may increase their intentional provision of academic content and better prepare children for kindergarten (LaParo et al., 2009; Logue, 2007).

Regarding progress monitoring, findings suggest that inclusive early childhood programs should ensure teachers are consistently collecting and using both curriculum-based and individualized data. When teachers were expected to collect different types of data and such data was used to shape program supports (e.g., professional development, consultation), teachers' progress monitoring was more frequent and better aligned with high-quality data collection practices. Community-based programs could facilitate collaboration between ECE teachers and related service providers to help ECE teachers understand how to collect and utilize individualized progress monitoring. Such collaboration could improve ECE teachers' ability to embed individualized instruction and, in turn, better support children's progress on IEP goals (Grisham-Brown et al., 2009; Rakap & Parklak-Rakap, 2011). In this way, collaboration between ECE teachers in community-based settings and related service providers could improve the quality of children's inclusion.

Finally, peer interactions differed across the three inclusion models represented in the current study. The differences across the models indicate that teachers may require different supports to help them facilitate sustained peer interactions. First, as others have observed, social integration and friendship development should be differentiated from peer-mediated interventions (Brown et al., 2001; Meyer and Ostrosky, 2014). Based on the present findings, teachers in ECSE classrooms may need to more intentionally attend to children's peer interactions separate from the use of typically-developing children as models and peer supports for children with disabilities. The small number of typically-developing peers in ECSE classrooms that include children with and without disabilities may also be a challenge for peer interactions in those classrooms. In the present study, teachers in Co-teaching classrooms with more typically-developing peers were able to more easily direct children with disabilities to peers who could help facilitate a positive interaction or sustained play. States may consider policies that increase the proportion of typically-developing peers in ECSE classrooms. Meanwhile, ECE teachers without a background in ECSE described the facilitation of peer interactions as particularly challenging. Findings suggest that educator preparation programs that prepare general early childhood educators, including CDA programs, may need to explicitly teach early educators how to facilitate peer interactions between children with and without disabilities within inclusive classrooms.

Because this was a descriptive exploratory study, more research is needed to confirm these implications for practice and policy. However, the present study provides important evidence that inclusion models do differ in their implementation of key features of high-quality inclusive education. Such differences have implications for the types of supports teachers need to provide a high-quality inclusive education.

Implications for Future Research

A primary contribution of the present study was the use of innovative research methods to examine inclusive education quality and the contextual features that may influence it. As such, the study findings have specific implications for future research investigating inclusive education.

First, patterns of global and inclusion quality across all three models denote the complexity of inclusive education quality. Future research investigating inclusive education should separately examine both global and inclusion quality. By doing so, investigations can capture both what children are included into, and how well they are included. Children's experiences within inclusive classrooms are dependent on both of these components, and research should reflect that. Moreover, future research should look at specific features of global and inclusion quality. Previous research examining the two types of quality have almost singularly represented classrooms based on their total quality scores, including research that has investigated differences in classroom quality across different types of programs (e.g, Bassok et al., 2016; Coley, Votruba-Drzal, Collins, & Cook, 2016; Soukakou et al., 2014). The current study revealed that the inclusion models sometimes differed on specific dimensions or items, even when they did not significantly differ in their total quality scores. That nuance should be preserved in future research, particularly investigations that aim to make recommendations for changes in practices, program supports, or policies. There are potential differences in individual components of quality across types of programs that should be considered in order to continue improving children's learning experiences and access to high-quality inclusive education.

Secondly, study findings indicate the importance of using both classroom-level and child-level assessments when examining children's inclusive experiences. Using the CIRCLE measure

revealed differences in the experiences of children with and without disabilities (e.g., frequency and type of feedback, academic engagement), specific teaching practices that were or were not utilized within certain classroom-level quality dimensions (e.g., feedback and open-ended questions), and potential ways that differences in program-level expectations translated to classroom practices (e.g., the potential relationship between early learning standards requirements and the academic content teachers presented). Child-level measures, particularly those that utilize an ecobehavioral structure, can provide important information about how children experience the classroom environment, as well as intervention and teacher support needs (Greenwood, Abbott, Beecher, Atwater, & Peterson, 2017; Greenwood et al., 2012). It is also important that classroom-level measures are grounded in an appreciation of individual child experiences given the necessarily individualized nature of inclusive education (Schwartz et al., 2002).

Finally, although the present study does not allow causal statements, substantial evidence indicated that inclusive classrooms do differ somewhat based on their organizational context and the service delivery model they utilize. Future research that takes place within inclusive classrooms should specify these features and explore possible ways they influence findings. Previous research on inclusive education quality or child outcomes has routinely been conducted in multiple types of inclusive classrooms without any analysis of differences between contexts (e.g., Nahmias, Kase, & Mandell, 2012) or without reporting contextual features related to inclusion model (e.g., Hardiman, Guerin, & Fitzsimons, 2009). Alternately, some research has taken place within classrooms that all reflect one inclusion model and researchers have presumed that findings could be generalized as representative of all inclusive early childhood classrooms (e.g., Pelatti et al., 2016; Rafferty, Piscitelli, & Boettcher, 2003). Future research examining

quality, teaching practices, and child outcomes within inclusive classrooms should systematically consider the influence of inclusion model contextual features. Inclusive education is a multifaceted, contextually-bound process, and should be operationalized as such in research.

Conclusion

Inclusive education remains, arguably, a conundrum that attracts passionate debate, even within the early childhood field. While inclusive education is arguably philosophically, ideologically, and politically favored within early childhood circles, attitudes about its "effectiveness" and feasibility continue to hinder its implementation (Barton & Smith, 2015a). Moreover, adopting an implementation science framework has been offered as a primary way to continue advancing inclusive education (Barton & Smith, 2015a; Odom, Buysee, & Soukakou, 2011), yet there is little information about how the key components and supports for inclusive education may systematically vary across the many settings that serve young children. As an exploratory study, the present investigation aimed to contribute to the still developing discussion regarding the intersections between context, quality, and inclusive practices. Findings provide evidence that early childhood settings do indeed differ in their strengths and needs related to providing high-quality inclusive education. Additionally, findings have significant implications for future research aiming to advance inclusive education. Rather than continuing to debate whether children with disabilities can or should be included, opportunities abound in discovering how settings can be differentially supported to provide a high-quality inclusive experience for all children.

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Appendix A: Structured Observation Taxonomies

Classroom Assessment Scoring System (CLASS)

Domains	Dimensions	Indicators
Emotional Support	Positive Climate	Relationships Positive affect Positive communication Respect
	Negative Climate	Negative affect Punitive control Sarcasm/disrespect Severe negativity
	Teacher Sensitivity	Awareness Responsiveness Addresses problems Student comfort
	Regard for Student Perspectives	Flexibility and student focus Support for autonomy and leadership Student expression Restriction of movement
Classroom Organization	Behavior Management	Clear behavior expectations Proactive Redirection of misbehavior Student behavior
	Productivity	Maximizing learning time Routines Transitions Preparation
	Instructional Learning Formats	Effective facilitation Variety of modalities and materials Student interest Clarity of learning objectives
Instructional Support	Concept Development	Analysis and reasoning Creating Integration Connections to the real world
	Quality of Feedback	Scaffolding Feedback loops Prompting thought processes Providing information Encourage and affirmation
	Language Modeling	Frequent conversation Open-ended questions Repetition and extension Self-talk and parallel talk Advanced language

Inclusive Classroom Profile (ICP)

Items	Indicator Content
Adaptations of space, materials, and Equipment	Space and material accessibility with support Adult monitoring for support needs Space and material accessibility independently Accommodations to space and materials Use of space and materials to encourage peer interactions
Adult involvement in Peer Interactions	Provision of social activities Adult strategies to encourage social interactions Cooperative play opportunities Sustained peer interactions
Adult Guidance of Free-Choice Activities and Play	Opportunities to make choices Adults monitor children's engagement Adult strategies to facilitate engagement Adults show enjoyment and availability Consistently extend children's engagement
Conflict Resolution	Adults intervene to prevent harmful/injurious behaviors Interventions to resolve peer conflicts Adults listen to and acknowledge child perspectives Clear rules and behavior expectations Encourage children to take active role in negotiating differences
Membership	Child social roles and responsibilities Books and materials represent individual differences Adult responses to questions about individual differences Adults promote sense of belonging and membership Materials and activities promote understanding of individual differences
Relationships between adults and children	Social interactions Adult responses to child requests or questions Sustained, reciprocal adult-child social interactions Adult responses to challenge interactions Adults respond to emotional needs
Support for communication	Awareness of communication needs Individualized adjustments to communication Encourage and facilitate language Strategies to facilitate social communication Strategies to encourage oral language Alternative means of communication, including assistive technology
Adaptations of group activities	Children participate in group activities Adults encourage participation Embed specific strategies based on individualized needs Adults monitor children's participation and adjust instruction
Transitions	Strategies to facilitate transitions Support children during multiple transitions Monitor child responses to transitions and adjust as necessary

Feedback	Feedback supports positive behavior and development
	Feedback on child efforts and process
	Verbal and nonverbal feedback
	Positive feedback
	Feedback is sensitive to child challenges
	Adults create opportunities for children to reflect on their work
Family-professional partnerships	Policy on Inclusion
	Policy on communicating with families
	Daily communication
	Opportunities for family input and feedback to program
	Share child assessments and progress
	Opportunities for families to connect with each other
Monitoring children's learning	Developmental screening tool
	Access to child's IEP
	Progress monitoring frequency
	Adults have access to related service provider reports
	Progress monitoring includes contextual information
	Individualized intervention plans are regularly adjusted

Code for Interactive Recording of Children's Learning Environments (CIRCLE)

Context

Structure		Academic Content[a]	Language
1=Centers	7=Clean-Up, Set-Up,	1=Language/Literacy	1=English
2=Story Time	8=Transition	2=Numeracy	2=Spanish
3=Large Group	9=Personal Care	3=Science and Nature	3=English/Spanish Blend
4=Small Group	10=Therapy	4=Social Studies	4=Other
5=Individual Activity	11=Restricted Access	5=None of those Listed	5=English/Other Blend
6=Meals and Snacks	12=None of Those Listed		6=None

Teacher

Teacher Talk	Recipient of Talk	Literacy Instruction[b]	Involvement
1=Negative Feedback	1=Focus Child Only	1=Phonological Awareness	1=Sharing
2=Expand, Repeat, Extend	2=Child's Group	2=Alphabet/Print Concepts	2=Close Proximity
3=Positive Feedback	3=None	3=Comprehension –Book/Story	3=General Supervision
4=Question –Open		4=Comprehension –Other	4=Not Involved
5=Question –Closed		5=Vocabulary	
6=Request for Action		6=Reading	
7=Reading		7=Literacy Involvement	
8=Singing, Reciting		8=None of Those Listed	
9=Exuberant Vocal, Laughter			
10=General Conversation			
11=None			

Child

Social Behavior[c]	Social Partner	Classroom Engagement[d]
1=Negative Social Behavior	1=Teacher	1=Competing Behavior
2=Words –English	2=Other Professional	2=Writing
3=Words –Other	3=Other Adult	3=Reading Words or Letters Aloud
4=Communicative Gesture, Vocal	4=Individual Child	4=Academic Response –Manipulation
5=Nonverbal Positive Initiation	5=Group	5=Academic Verbal Response or Gesture
6=Singing/Reciting	6=None	6=Academic Attention
7=Laughing		7=Pretend Play
8=Social Attention		8=Music, Recitation
9=None		9=Non-Academic Manipulation
		10=Gross Motor
		11=Eating, Drinking
		12=Non-Academic Attention to Materials
		13=None of Those Listed

Notes (see main document for further explanation):

a) Academic Content was re-coded into a binary variable –Academic Content (1-4) or None (5)
b) Literacy Instruction was re-coded into three variables –Literacy Instruction (1-5, 7), Reading (6), or None (8)
c) Social Behavior variables, Words –English and Words –Other, were combined
d) Classroom Engagement variables, Academic Response –Manipulation and Academic Verbal Response or Gesture were examined separately and as a combined Academic Response variable

Appendix B: Interview Guides

Note: These are the general guides for teacher and administrator interviews. Interviews were individualized for each classroom based on observations, previous data collection, and classroom- or program-specific features. For example, teachers and the administrator for Program 4 were asked about the role of undergraduate student workers in the classroom. Teachers and administrators in Program 1 were asked about the influence of Head Start standards and requirements. Many of these classroom- and program-specific questions are not included in the general guide attached here. Some of these individualized questions were under the category of "Questions from Initial Observations/Analysis," but some were related to the DEC and NAEYC (2009) definition of inclusive education translated to practice.

Teachers –1st Interview

Teaching Background

1) What is your educational background?

- Were you specifically prepared to implement practices/supports to facilitate inclusive education? In what ways (e.g., specific courses, student teaching)?

2) How long have you been teaching? In your current position?

General Knowledge/Beliefs about Inclusive Education

3) How do you define inclusive education?

4) How would you describe your role in supporting inclusive education?

5) What practices or procedures do you view as important to inclusive education?

Classroom/Model-Specific Questions about Facilitating IE

6) How does your classroom support the inclusion of children with disabilities? What are some strengths of how it supports inclusive education?

- How do you think [inclusion model] influences inclusive education?

7) What are some challenges your classroom has experienced around implementing inclusive education or including children with disabilities?

- What challenges do you see that you think are unique to [inclusion model]?

Definition of IE Translated to Practice

Prompt: As you're probably familiar DEC defines early childhood IE as access to learning opportunities, participation with peers and adults, and institutional supports undergirding practice.

8) What are some practices/strategies you use to support all children's access to learning opportunities in the classroom?

- If needed: Some of the practices DEC describes as creating access are the use of modifications, UDL, technology, positive behavior supports. Do you use those in your classrooms? If so, how?
- Do you think those practices would look different in another type of early childhood classroom? How?

9) What are some practices you use to support all children's participation in the classroom?

- If needed: Some of the practices DEC describes as supporting participation are supporting interactions with peers and adults and involvement in classroom activities facilitated by individualized modifications and accommodations, use of tiered models of support, use of embedded and naturalistic instruction. How do you use those in your classroom?
- Do you think those practices would look different in another type of early childhood classroom?

10) What are some institutional supports your program provides that helps you implement inclusive education?

- If needed: Some of the supports DEC describes as supporting inclusion include professional development, procedures that facilitate collaboration and service coordination, program quality frameworks/assessments that support practice improvement, and consultation as appropriate. Does you program offer any of these?
- Do you think those supports would look different in another type of early childhood context?

EXAMPLE Questions from Observations/Initial Analysis

11) I noticed [Teacher 2] ran a smaller "large" group that specifically prepared children for concepts that were discussed in small groups. Do you separately plan those large groups? How do you determine when or who needs that separate large group?

12) What is your planning process like?

13) How do you incorporate working on children's individual goals during planned instruction time?

14) In what ways and how often do teachers communicate with specialists (related service providers)?

Inclusive Classroom Profile (ICP) Interview Questions

1) Item 5, Indicator 3.1: Do all children in the classroom have opportunities to assume any classroom helper roles/responsibilities?

- How do you decide helper roles?

3) Item 5, Indicator 7.2: How do you help children understand each other's differences in learning, skills, or behaviors? Can you describe some activities that you might do in the classroom?

- Can you describe how you explain children's differences in the moment (e.g., if a child asks about another child's hearing device or about what Drake is doing)?

5) Item 8, Indicator 3.1: (edited) About how much of the time would you say children who receive some pull-out services participate in daily planned group activities?

6) Item 11, Indicators 1.1 & 3.1: Do you have a written policy on inclusion that can be shared with families?

- Can I see it?
- How is it shared with families?

7) Item 11, Indicators 1.2 & 3.2: Do you have any written policies/procedures for communicating with families?

- Can I see it?

8) Item 11, Indicators 3.3 & 5.2: Do you have any procedures for regularly communicating with families about daily issues, family concerns, priorities, resources, and children's needs? If so, do your procedures include opportunities for daily bi-directional communication with families? Please describe.

9) Item 11, Indicator 3.4: Do you request copies of children's assessments and any other child-related information from families, such as information on children's interests, strengths, and learning needs? What other child-related information might you request from families?

10) Item 11, Indicator 3.5: How do you share information on children's progress with families? What kind of child progress monitoring information do you exchange with families?

- Can I see an example?

11) Item 11, Indicator 5.1: Are you or other staff available to attend intervention planning meetings such as IEP or IFSP meetings with service providers and families?

- Who typically attends? Is it always Victoria (technically the ECSE teacher)

12) Item 11, Indicator 5.3: How do you encourage family participation in parent-teacher meetings?

13) Item 11, Indicator 5.4: Do you have a system for identifying family priorities, concerns, and resources?

- Can I see it?

14) Item 11, Indicator 7.1: Do you offer all families opportunities to provide feedback on the quality of a wide range of aspects of the program?

- Can I see how or examples?

15) Item 11, Indicator 7.3: Do you provide all families with opportunities to connect with other families from your program or your community? How might you do this?

16) Item 12, Indicators 1.1 & 3.1: Do you have a way for identifying a child who might be at risk for developmental delay or a learning disability?

- Can I see an example of the form/process?

17) Item 12, Indicators 1.2, 3.2, & 5.1: How do you monitor children's progress on various learning and developmental goals?

- Can I see an example of the forms/process?

18) Item 12, Indicator 3.4: How often do you monitor children's progress on various goals?

19) Item 12, Indicator 3.5: How often do staff meetings take place with a goal to discuss children's profiles?

20) Item 12, Indicator 5.2: Do you have individualized intervention plan for each child with a disability that describes a child's current needs as well as the specific intervention/instructional supports that are being implemented?

- Can I see where those are kept? (or where are those kept)

21) Item 12, Indicator 5.3: Do you have access to assessments, intervention plans, and progress reports from specialized therapists? How do you use such information?

22) Item 12, Indicator 7.2: How often do you review and adjust intervention plans for individual children?

- Can I see where those reviews are kept? (documentation required, but I'm not sure what evidence should be shown)

Teachers –2nd Interview

Teacher Background

1) What is your age range (21-30; 31-39; 40-49; over 50)?

2) Do you currently hold a state licensure, if so, what is your current licensure?

3) Do you have experience implementing inclusive practices in a different role or type of program (e.g., paraprofessional, itinerant teacher, ECSE teacher, administrator; community-based center)?

- Follow-up: How did you think your role differed?

General Knowledge/Beliefs about Inclusive Education

4) What coursework, professional development, or other experiences would you say has influenced your knowledge of inclusive education the most?

5) What are some things that you feel like you still don't know about inclusive education or are still concerned about regarding inclusive education?

Definition of IE Translated to Practice

6) Last time we spoke, we discussed some practices that you think support inclusive education, such as technology, visuals, and professional development. Are there other practices, strategies, or supports that [Program] provides that you think helps you be inclusive of children with IEPs?

7) Are there additional challenges to implementing inclusive education you can think of?

8) As the semester has progressed, are there any new practices you've learned or implemented or curriculum modifications you've made to make your classroom more inclusive?

EXAMPLE Questions from Observations/Initial Analysis

9) What are some challenges of supporting all children's academic attention/engagement? How do you try to address that?

10) One of the differences I've noticed between center-based classrooms and public school classrooms is that you have a dedicated time for small group whereas community-based centers seem to have a small group that's a teacher-led activity during centers time. How was that structure determined? What do you see as advantages and challenges of that structure?

11) One of the things I've found is that children with disabilities in the classroom have similar amounts of peer interactions as children without disabilities. Would you say that's true? How do you try to support peer interactions?

12) One difference I've seen between ECSE classrooms and more general ECE classrooms is that the teachers do a lot of explicit 1:1 teaching during centers. Would you say that you do a lot of that? How do you use centers to support children's inclusive education?

13) How do the teachers divide responsibilities (e.g., teaching large group, planning, data collection/assessment)?

Administrators –1st Interview

Teaching & Administration Background

1) What is your educational background?

- Did your preparation program specifically prepare you to implement or supervise practices/supports to facilitate inclusive education? If so, in what ways?

2) What previous experience do you have teaching and/or supervising classrooms with children with and without disabilities?

General Knowledge/Beliefs about Inclusive Education

3) How do you define inclusive education?

4) What practices or procedures do you view as important to inclusive education?

5) Can you describe your role in supporting inclusive education?

Model-Specific Questions about Facilitating IE

6) Does your program philosophy or mission statement reflect objectives or goals to support inclusive education? How? (Adapted from Wolery & Odom, 2000)

7) How does your program support inclusive education? What are some strengths of how it supports inclusive education?

- How do you think [inclusion model] influences inclusive education?

8) What are some challenges your program has experienced when implementing inclusive education?

Definition of IE Translated to Practice

Prompt: As you're probably familiar DEC defines early childhood IE as access to learning opportunities, participation with peers and adults, and institutional supports undergirding practice.

9) What are some practices you've used or advised teachers to use to support all children's access to learning opportunities in the classroom?

- If needed: Some of the practices DEC describes as creating access are the use of modifications, UDL, technology, positive behavior supports. Are these used here? How do you support the use of these in the classroom?
- Do you think those practices would look different in another type of early childhood context?

10) What are some practices you've used or advised teachers to use to support all children's participation in the classroom?

- If needed: Some of the practices DEC describes as supporting participation are supporting interactions with peers and adults and involvement in classroom activities facilitated by individualized modifications and accommodations, use of tiered models of

support, use of embedded and naturalistic instruction. Are these used here? How do you support the use of these in the classroom?
- Do you think those practices would look different in another type of early childhood context?

11) What are some institutional supports you implement to support inclusive education?
- If needed: Some of the supports DEC describes as supporting inclusion include professional development, procedures that facilitate collaboration and service coordination, program quality frameworks/assessments that support practice improvement, and consultation as appropriate. Does your program offer any of these?
- Do you think those supports would look different in another type of early childhood context?

EXAMPLE Questions from Observation/Initial Analysis

12) How do you think becoming a Head Start provider has impacted general practice and your supervision for teachers?
- Impact on support for children with disabilities in the center?

13) I've gotten to observe dialogic reading and I see that there are some differences in how teachers implement it. What expectations does the program have to teachers' implementation of DR?

14) I've learned a little about the system that that teachers enter data into. What are the expectations for teachers around data collection –for all children and for children with IEP's in particular?

Administrators –2nd Interview

Teaching & Administration Background

1) How long have you been in current position? How long have you been in the early childhood field in some capacity?

2) What is the current licensure you hold? What previous licensures have you had?

3) What is your age range (21-30; 31-39; 40-49; over 50)?

4) Do you have experience implementing or supervising inclusive practices in a different role or context (e.g., paraprofessional, itinerant teacher, ECSE teacher, administrator; community-based center)?

- How do you think your role differed?

Administrator's Guide to Inclusion (Wolery & Odom, 2000)

5) How do you support teacher knowledge about inclusive education?

- Follow-up: How do you support staff knowledge about embedded instruction/intervention and the use of classroom modifications and adaptations?

6) How do you support staff collaboration amongst teachers and other staff?

7) How do you support staff collaboration between teachers and school district (related service provider) collaboration?

- I've noticed the teachers and service providers talk within the classroom, but service providers generally pull out children for services and are responsible for IEP data collection and development (with teacher input)

8) How does your program facilitate communication with families regarding IEP development and supporting children's IEP goals?

9) How does your program facilitate communication between staff families regarding IEP development and supporting children's IEP goals?

Questions from Observations/Initial Analysis

10) Last time we spoke, you named a lot of professional development and behavioral support that [program] provides as institutional supports that support inclusion. Are there other institutional supports you use that you believe support inclusion?

- Follow-up: Do you think those supports would look different in another type of ECE context? (e.g., one that's at public school, Head Start, community-based center that's not University-affiliated)

11) How does the program support student workers to engage with and support children with different needs within the classroom?

- I imagine this could be a challenge because they're in different classrooms a lot and are only there for short periods of time
- One of the patterns I noticed is that children with disabilities were less likely to have "other adult" as a social partner (was significant correlation)

12) I've seen that Centers time is when teachers a small group-type activity. One of the differences I've noticed between [center] classrooms and public school classrooms is that structure of doing small group within Centers instead of a dedicated small group time. How was that decided? Are there expectations for how that time/that activity is used? Are there expectations around Centers?

- Adult guidance during free-choice activities and play is a component of ICP

13) Do you see any limits to [program]'s ability to be inclusive of different child needs?

EXAMPLE Questions from Observations/Initial Findings

14) One of the recurring themes has been that teachers' educational background in ECSE influences how comfortable they feel implementing supports for children with disabilities? Do you agree?

- Follow-Up: How do you see the educational backgrounds of your teachers as influencing inclusion?

15) Collaboration between service providers and teachers seems to differ between public school classrooms and community-based classrooms. What are expectations for collaboration between teachers and service providers? How do you support professional collaboration?

Appendix C: Qualitative Codebook Derived from Structured Observations

Code	Source	Definition (from Structured Observation)
Access		
Productivity	CLASS	Maximizing learning time; creating routines that all children understand and are able to access; strategies that facilitate all children's efficient transition between activities; activity preparation (i.e., materials are ready for children's use)
Instructional Learning Formats	CLASS	Effective facilitation of classroom activities (e.g., how they involve children in activities); use of a variety of modalities and materials; recruiting student interest in content/classroom activities; clarity of learning objectives
Concept Development	CLASS	Support for children's development of analysis and reasoning skills; opportunities to create and plan their own ideas/products; integration of concepts; creating/identifying connections between content and children's the real world experiences
Adaptations of Space, Materials, and Equipment	ICP	Accessibility of classroom physical space, materials, and equipment; adult support for children to gain access; environmental arrangements supporting individual learning and social experiences; adult support for promoting independent access and use of space, materials, and equipment
Adult guidance of children's free-choice activities and play	ICP	Opportunities for children to participate in a variety of learning activities and play of their choice
Support for Communication *	ICP	Adult use of alternative means of communication systems and supports to facilitate communication
Academic Content	CIRCLE	Describe the content of the academic instruction they provide (i.e., language/literacy, numeracy, science & nature, social studies)
Access –Other	N/A	Other information regarding children's access to learning opportunities, as defined by DEC & NAEYC (2009)
Access –Disconfirming Evidence	N/A	Descriptions that contradict previous findings/patterns (e.g., within-case divergence)

Participation		
Positive Climate	CLASS	Support for positive relationships within the class; how teachers show positive affect, positive communication, and respect

Teacher Sensitivity	CLASS	How teachers monitor to be aware of child needs; emotional responsiveness; how teacher addresses social conflicts that come up; supports for students to feel comfortable in the classroom
Regard for Student Perspectives	CLASS	Flexibility in plans in order to incorporate student ideas/interests; Support for autonomy and leadership; strategies to evoke student expression; opportunities/strategies for students to be free of movement restrictions
Behavior Management	CLASS	Clear behavior expectations; ways that teachers proactively correct behavior/remind children of expectations; strategies to redirect misbehavior
Feedback		
Quality of Feedback	CLASS	Strategies to scaffold children's learning; creation of feedback loops; how teachers prompt children's thought processes about content; strategies/evidence of providing new information based on child responses; provision of encouragement and affirmation that extends children's participation and learning
Feedback	ICP	How teachers provide children positive feedback on children's efforts, behaviors, and learning; teachers use of different types of feedback (e.g., corrective, positive reinforcement) to support important goals (e.g., positive behavior, learning, engagement); process-oriented feedback; verbal and non-verbal feedback; adults provide sensitive, individualized feedback in responsive and supportive ways
Support for Language		
Language modeling	CLASS	Teachers support frequent conversation; use of open-ended questions; use of repetition and extension to encourage back and forth conversation; use of self- and parallel talk; how teachers incorporate advanced language/vocabulary
Support for Communication*	ICP	Adult responsiveness to children's initiated communication; scaffolding to encourage and facilitate social communication; use of individualized strategies for encouraging and facilitating oral language development; use of visual supports, books, and classroom resources for supporting social communication
Adult involvement in peer interactions	ICP	Opportunities for children to participate in activities and routines with their peers; adult planning of social play and learning activities; adult scaffolding for supporting positive, reciprocal, sustained peer interactions and relationships between children; how teachers balance between adult involvement and support for children's

		spontaneous social engagements; adult facilitation of problem solving between children
Adult guidance of children's free-choice activities and play	ICP	Opportunities for children to make choices, and adult help for children to understand, develop, and communicate choices; scaffolding to support active engagement in activities and play; how teachers show availability and enjoyment when engaging with children; strategies to extend children's learning and play skills
Conflict resolution*	ICP	Adult provision of activities or strategies to prevent and mediate peer conflict; how teachers communicate clear expectations for positive social engagements; how teachers address peer conflict and help children work through it; use of individualized strategies for helping children negotiate peer conflict and generate solutions
Membership*	ICP	Opportunities for children to assume equal roles and responsibilities in the classroom; strategies to prevent bullying or persistent teasing; teacher's use of positive and inclusive strategies for responding to children's individual differences; how teachers promote acceptance and understanding of individual differences
Relationships between adults and children	ICP	Adult engagement in positive, reciprocal, and sustained social interactions with children; how teachers demonstrate responsiveness to children's interests; responsiveness to children's emotional needs; how teachers support children when challenging social interactions arise; use of visual supports and additional classroom resources for supporting children's emotional needs and development
Adaptations of group activities*	ICP	Opportunities for children to participate with their peers in planned whole-group and small-group activities; teacher's use of embedded strategies and modifications/ adaptations of activities to support children's active engagement and participation while also meeting individual needs; adult planning and monitoring of embedded strategies and adaptations to support children's individual needs
Transitions between activities	ICP	Classroom individualized supports to facilitate smooth transitions; adult use of individualized support for children experiencing difficulty with transitions (proactive and reactive); adult use of visual supports to facilitate transitions; how adults adjust transition supports over time in response to child needs
Teacher Recipient of Talk & Involvement	CIRCLE	Teachers describe how they balance interactions with children with different needs (e.g., children with and without disabilities) and/or structures of talking (e.g., group vs. individual)
Children's Classroom Engagement	CIRCLE	How teachers support children's academic engagement in the classroom (e.g., writing, reading, academic responses, academic attention, pretend play, manipulation/Attention

		to materials); differences in academic engagement supports for children with and without disabilities/with different needs
Participation –Other	N/A	Other information regarding children's participation with peers and adults, as defined by DEC & NAEYC (2009)
Participation –Disconfirming Evidence	N/A	Descriptions that contradict previous findings/patterns (e.g., within-case divergence)

Supports		
Collaboration to support transitions between activities	ICP	Teaming and collaboration between adults to support planning for and facilitating transitions between classroom activities and routines
Family-professional partnership*	ICP	Policies and procedures for communicating with families; support for staff to participate in meetings with families to plan for and discuss individualized education; procedures implemented daily for bidirectional communication; procedures for sharing and exchanging information on children's progress; opportunities for families to contribute information on families' priorities; opportunities for families to provide feedback on the quality of the program; opportunities for families to socialize/meet each other
Monitoring children's learning*	ICP	Assessment systems and methods for monitoring children's progress toward individualized goals; frequency of use of progress monitoring systems; quality of intervention planning methods; use of progress monitoring data to adjust interventions and instruction; evidence that planning includes interventions that support children's needs in their home and community
Program Philosophy	Administrator's Checklist	The extent to which inclusive education is explicitly included in the program's philosophy, objectives, and commitments to parents; the program's definition of inclusion; perspectives/policies about placement decisions
Adequate Space, Equipment, & Materials	Administrator's Checklist	Describing program supports to ensure program and classroom areas are accessible to all children; program resources to support buying or adapting equipment and materials to make them accessible to all children (note this is at the program level, not the classroom level)
Staff Management & Training	Administrator's Checklist	Program supports to improve staff knowledge about child development and instruction; the provision of professional development relevant to inclusive

		education and/or supporting children with developmental delays or disabilities, specifically
Individualizing Curriculum & Instruction	Administrator's Checklist	Supports for teachers to individualize curriculum; program curriculum expectations; support for therapy and/or IEP goals to be incorporated into curriculum; program expectations regarding teachers embedding individualized goals into curriculum/differentiating curriculum; flexibility in teachers implementing curriculum to fidelity
Staff Planning & Collaboration	Administrator's Checklist	The extent to which staff have regular meeting times and opportunities for collaborative staff development; supports to facilitate collaboration between teachers/classroom staff and related service providers (excludes collaboration regarding transitions between classroom activities)
Staff Monitoring & Evaluation	Administrator's Checklist	Ongoing program-level monitoring of children's development; program progress monitoring or data collection requirements; QRIS system or other process through which teachers are evaluated and provided with feedback
Supports -Other	N/A	Other information regarding program-level supports, as defined by DEC & NAEYC (2009)
Supports –Disconfirming Evidence	N/A	Descriptions that contradict previous findings/patterns (e.g., within-case divergence)

Other –Inclusion Model	N/A	Teachers describe their inclusion model; compare/contrast their model to other models; describe how their inclusion model influences their ability to provide high-quality inclusive education

*Indicates an ICP item that was evaluated in whole, or in part, by interview questions (and therefore there are explicit interview questions that were answered regarding that item)

Appendix D: Within-Case Data Displays

Co-Teaching: Public School

<table>
<tr><th>d</th><th>Inclusive Education Quality</th><th>Instructional Content & Processes</th><th>Teacher-Child & Child-Child Interactions</th><th>Differences between Children with and without Disabilities</th></tr>
<tr><td rowspan="2">Access</td><td><table>
<tr><td colspan="2">CLASS</td></tr>
<tr><td>Productivity</td><td>5.75</td></tr>
<tr><td>Instructional Learning Formats</td><td>5.75</td></tr>
<tr><td>Concept Development</td><td>3.25</td></tr>
<tr><td colspan="2">ICP</td></tr>
<tr><td>Adapt Space & Materials</td><td>7</td></tr>
</table></td><td>Academic Content Presented -46.3%
<u>Teacher Talk w/ Ac. Content</u>
Feedback -8.5%
Open-Ended Q -3.9%
Request for Action -9.2%

<u>Literacy Instruction</u>
Lit Instruction -22.9%
Reading -3.2%</td><td><u>Activity Structures</u>
Centers -30.8%
Large group -26.6%
Small group -20.6%

<u>Teacher Talk</u>
- Feedback -12.2%
+ Feedback -7.3%
Open-Ended Q -3.7%
Request for Action -29.3%

<u>Teacher Involvement</u>
Close Proximity -35%
Gen Supervision -65%</td><td>• No diff. in Teacher Talk amount or types
• No diff. in academic content presented</td></tr>
<tr><td colspan="4">T1: “we plan side-by-side. She takes the objectives, the [state] early learning standards, and the TSG. And then I take the curriculum book…And then we talk about, “Okay. According to our pacing guide, that we have right now, what should be taught?”
T1: “My role is to make sure that the curriculum meets everybody’s needs and that everybody has access to the same curriculum and that I make sure that that curriculum is appropriate, and at times that it’s not, I find another way that it can be beneficial to everyone here.”
T2: “understand self-regulation is something that you teach first before you start teaching more academic stuff.”
T2: “[T1] takes care of a lot of the Gen Ed curriculum lesson plans. And I am the one that kinda goes in and helps tweak it to include the special needs students.”</td></tr>
</table>

<table>
<tr><td></td><td colspan="5">T3: “the standards they want these children to be at are extremely high”
A1: “There are three goals that we have that we would like to see teachers doing in the classroom. One of them is around providing rigorous learning goals. And so it’s going into the classrooms and seeing, are the teachers teaching the standards from the [state] early learning standards?”</td></tr>
<tr><td>Participation</td><td colspan="2">CLASS</td><td rowspan="13">• Feedback positively correlated with academic attention for children with disabilities (.102**) and children without disabilities (.119*)
• Open-ended questions positively correlated with academic attention for children with disabilities (.133**) and without disabilities (.176**)</td><td rowspan="13"><u>Child Social Behavior</u>
Child –Words -12.1%
Child –Social Attn -40.8%

<u>Classroom Engagement</u>
Academic Response -6.1%
Academic Attn -24%
Nonacademic manip. -17.6%
Nonacademic attn. to materials -11%
Pretend Play -2.8%

<u>Child Social Partner</u>
Teacher -34.7%
Other Professional -1.6%
Indiv. Child -16.9%
None -45.3%

• Neither teacher involvement or talk was significantly correlated with children’s social partner being another child</td><td rowspan="13">• Children with disabilities less likely to be in close proximity to the teacher; more likely to be in general supervision
• Children with disabilities more likely to use comm. Gesture/vocalization
• Children with disabilities less likely to show academic attention
• Relationship between feedback & academic engagement (attn. vs. response)
• Teacher Feedback correlated with social attention for children with disabilities (.122**), but not children without disabilities
• Teacher General Convo correlated with</td></tr>
<tr><td></td><td>Positive Climate</td><td>6</td></tr>
<tr><td></td><td>Negative Climate</td><td>7</td></tr>
<tr><td></td><td>Teacher Sensitivity</td><td>6</td></tr>
<tr><td></td><td>Regard for Student Perspectives</td><td>4.75</td></tr>
<tr><td></td><td>Behavior Management</td><td>5.6</td></tr>
<tr><td></td><td>Quality of Feedback</td><td>4.75</td></tr>
<tr><td></td><td>Language Modeling</td><td>3.5</td></tr>
<tr><td></td><td colspan="2">ICP</td></tr>
<tr><td></td><td>Adult Involvement in Peer Interactions</td><td>4</td></tr>
<tr><td></td><td>Adult Guidance of Free Play</td><td>4</td></tr>
<tr><td></td><td>Conflict Resolution</td><td>5.5</td></tr>
<tr><td></td><td>Membership</td><td>6</td></tr>
</table>

	Relationships Btwn. Children & Adults	4			academic attention for children with disabilities (.180**), but not children without disabilities • During centers, no differences in social partner of children with and without disabilities
	Support for Communication	4			
	Adaptations of Group Materials	5			
	Transitions	6			
	Feedback	4.5			
	T1: "we really, really work hard in the beginning of the year to create that community in the big classroom." T2: "I make sure that I try to meet them where they're at, but we all do that. I feel like [T1] does that just as much as I do. Particularly me, I come through with more of the paperwork part where I know what each student needs to work on for their IEPs, what their services are, what needs they have." T2: We model language as far as kids can't give us just one-word answer. We make sure that we model full sentences, have them repeat it back." T3: "during free play, we try and embed some of those skills." T4: "we have the involvement with the children and sometimes you have to explain to the gen ed kids, like "hey, we need to talk on it.' You can ask them to talk, you can –we just involve them with different ways to communicate to all the kids and participate with them."				
Supports	ICP				
	Family-Professional Partnerships	4			
	Monitoring Children's Learning	6			
	T1: "At the end of each quarter, [T1] does a IEP progress report, and then every student, SPED and Gen Ed, both get a report from TSG. That's where we enter our data and that's sent home every quarter."				

	T1: “So we use the pacing guide as a guide on where they should be. We take, obviously, baseline data. We take data during small groups. We do informal and formal. So we have the formal paper copies… The formal ones are the ones that we do where we pull them out of centers, or I feel like that they're formal ones. Our informal ones are more of like what we're writing down during small group time.” T1 (on co-teaching): “I think it’s good to have more teachers in here for that ratio piece of it…also helps with just being –for observation purposes and data collection…you can bounce ideas off of each other.” T2: “Special Ed coordinators really know and able to trouble short with me if I need it.” T2 (on meeting with service providers): “With [speech pathologist], our speech pathologist, yes we do, but it’s not really a planned thing. We do invite he into our planning every week. She doesn’t come all the time…we’ll sit down with [speech pathologist], we’ll ask what we can do for certain kids, what she’s working on when she pulls them out, and then what she can do to help us in our classroom.” T3 (school district supports): “providing materials, the school or the special education cooperative as a whole…professional development to help us work with different –you learn more about different needs that kiddos have.” T3 (on speech teacher who comes to the classroom for some activities): “She’ll sit down with the students regardless of if they’re on an IEP or not. So she kind of just adds into the group as like another teacher.” T3: “we are required by Head Start to do the conferences and the home visits.” (also do quarterly progress reports that are sent to families) T4 (on co-teaching): “a different perspective that we still –we can agree on the same thing, and we still want the child to succeed no matter what, but we have different ideas on how to do it.” T4: “we have professional development every Wednesday, and if we have a question, they can come in and observe us and then give us feedback.” T4: “We have a data notebook that we record data, and it’s a lot of data is just during small groups” A1: “There are three goals that we have that we would like to see teachers doing in the classroom. One of them is around providing rigorous learning goals. And so it’s going into the classrooms and seeing, are the teachers teaching the standards from the [state] early learning standards?” A1: “then as a SPED department, a lot of those monthly professional developments that they do are specifically around different modifications.” A1: “there just seemed to be some extra hoops that are associated with getting the Head Start money that probably take away from other things that we can be doing to better serve kids.” A1: “we told them when we had professional development around data collection is that we needed to be able to –that they needed to have enough data to support their instructional decisions.”

ECSE: Public School

<table>
<tr><th></th><th>Inclusive Education Quality</th><th>Instructional Content & Processes</th><th>Teacher-Child & Child-Child Interactions</th><th>Differences between Children with and without Disabilities</th></tr>
<tr><td rowspan="2">Access</td><td>CLASS
Productivity 6.25
Instructional Learning Formats 4.75
Concept Development 2.08
ICP
Adapt Space & Materials 6.67</td><td>Academic Content Presented -46.9%

<u>Teacher Talk w/ Ac. Content</u>
Feedback -5.2%
Open-Ended Q -2.6%
Request for Action -8.9%

<u>Literacy Instruction</u>
Lit Instruction -23.5%
Reading -2.6%</td><td><u>Activity Structures</u>
Centers -33.3%
Large group -34.1%
Small group (including “project time/activity center”) -11.5%

<u>Teacher Talk</u>
- Feedback -8.8%
+ Feedback -6%
Open-Ended Q -6%
Request for Action -28.9%

<u>Teacher Involvement</u>
Close Proximity -52.7%
Gen Supervision -47.3%</td><td>• Children with disabilities got significantly more negative feedback
• Children with disabilities more likely to be the sole recipient of teacher talk
• Children with disabilities more likely to be read to
• Children with disabilities more likely to receive literacy instruction
• Children with disabilities more likely to be in close proximity to a teacher</td></tr>
<tr><td colspan="4">T5: “The universal design for learning, I’m a big proponent of it, because …The students in here need things to be very visual but not too visual. I mean if there’s too much visual stimuli going on, then they will just be tempted to look around and not listen.”</td></tr>
</table>

<table>
<tr><td></td><td colspan="5">T6: “When I do my planning, we all have pacing guides and so it'll tell us what letter we're working on, it'll tell us what we need to be working on with math and so I use those to pull from…it’s based on the early learning standards.”
T6: “I'll give a kiddo a pair of scissors and, "Oh, those don't work? Here, let's use these modified scissors". "Oh, we're having trouble cutting on that? Let me draw with my lime green highlighter over the line for you."
T7: “I’ve just looked at our indicators and, “Okay, now we need to be learning this.”
T7: “I think the community preschools, they do a lot of that more because we’ve got these indicators, these kids are supposed to count to 30, and these kids are supposed to know 13 upper and lower case. So, some of that you can’t just embed, some of that you gotta drill.”
A3: “We do have a pacing guide, and it goes in order of the curriculum…If you wanna do that using materials that you bring in from outside or other activities you find, that’s fine too, as long as you’re teaching the standards and the kids are making progress.”
A2: “They’re required to turn in lesson plans, they’re required to turn in like what their room looks like as far as setup of the room. Lesson plans are weekly and we require that they align them with the [state]ELS [early learning standards] and they also have to discuss specific instructional areas for individual students. Data collection, it has to address data collection.”</td></tr>
<tr><td>Participation</td><td colspan="2">CLASS</td><td rowspan="9">• Teacher feedback positively correlated with child words for children with disabilities (.086**) and without disabilities (.093*)
• Teacher general convo correlated with academic attention for children with disabilities (.134*)</td><td rowspan="9"><u>Child Social Behavior</u>
Child –Words -17.2%
Child –Social Attn -38.3%

<u>Classroom Engagement</u>
Academic Response -6.1%
Academic Attn -24%
Nonacademic manip. -17.6%
Nonacademic attn. to materials -11%
Pretend Play -2.8%

<u>Child Social Partner</u>
Teacher -29.3%</td><td rowspan="9">• Children with disabilities talked to more by teacher/para
• Children with disabilities more likely to have a teacher or para as their social partner
• Children with disabilities less likely to be engaged in writing
• Children with disabilities less likely</td></tr>
<tr><td></td><td>Positive Climate</td><td>6.4</td></tr>
<tr><td></td><td>Negative Climate</td><td>6.8</td></tr>
<tr><td></td><td>Teacher Sensitivity</td><td>5.9</td></tr>
<tr><td></td><td>Regard for Student Perspectives</td><td>3.75</td></tr>
<tr><td></td><td>Behavior Management</td><td>6.25</td></tr>
<tr><td></td><td>Quality of Feedback</td><td>3.2</td></tr>
<tr><td></td><td>Language Modeling</td><td>3.5</td></tr>
<tr><td></td><td colspan="2">ICP</td></tr>
<tr><td></td><td>Adult Involvement in Peer Interactions</td><td>4</td></tr>
</table>

	Adult Guidance of Free Play	4.67	and without disabilities (.275**)	Other Professional -11.7% Indiv. Child -12.6% None -42.8% Composite Teacher OR Para: 41% • Teacher general conversation correlated with social attention for children with disabilities (.170*) and without disabilities (.131**) • Teacher close proximity negatively correlated with child social partner for children with disabilities (-.171**) and without disabilities (-.119**)	to give academic response • Children with disabilities more likely to be engaged in academic attention • During centers, child social partner more likely to be an adult if the child has a disability • Teacher open-ended questions only correlated with academic attention for children with disabilities (.066*) • Teacher request for action only correlated with academic response for children with disabilities (.064*) • Teacher general conversation correlated with child words for children without disabilities (.105*), but not children with disabilities
	Conflict Resolution	4.3			
	Membership	6			
	Relationships Btwn. Children & Adults	5			
	Support for Communication	3.33			
	Adaptations of Group Materials	5.67			
	Transitions	5.67			
	Feedback	4			

<table>
<tr><td></td><td colspan="5"></td></tr>
<tr><td></td><td colspan="5">T5: “And if I see that the project is just not very engaging or not very fun, I also will follow the child’s lead on what their interests are.”
T5: “we call them hearing peer models…so they are modeling for us age-appropriate speech production for our deaf/hard of hearing students. They are modeling listening skills for our deaf/hard of hearing students. They are modeling compliancy. They are modeling following directions”
T5: “And if I see one child that is just playing isolated, my first reaction is to go to that child and start asking questions, "What are you doing? May I have one?" Showing them a picture, "Oh, can I have this? Oh, thank you." And then I'll bring a peer over. I'll say, "so-and-so," "Why don't you let her take your order?" In our little play kitchen.”
T5: “If I just present a material to a child and say, “Do what you want with it. It’s open-ended.” Some children who are in special education with just sit there. They need a model.”
T6: “It can be the same activity, but it can have a completely different purpose.”
T6: “When we're at centers and they're together, we try to foster that communication, that sharing.”
T7: “In the afternoon, it's differentiation all the time”</td></tr>
<tr><td>Supports</td><td colspan="2">ICP</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Family-Professional Partnerships</td><td>3.67</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Monitoring Children’s Learning</td><td>5.3</td><td></td><td></td><td></td></tr>
<tr><td></td><td colspan="5">T5: “Well, daily I’m assessing, but formally, I do a weekly data collection on their progress monitoring per goal.”
T6: “You see us carrying around our clipboards. We all collect data on our kiddos and their goals. And just keep tracking of language and what words we’re saying spontaneously.”
T7: “Our transitioning to kindergarten is sometimes a struggle because they’re not gonna get what they get here, or that –all that attention and that tight structure. Once they get up to kindergarten, they’re not gonna get a lot of that built in structure.”</td></tr>
</table>

	A2: “I think whenever a child is enrolled in a classroom that teacher has to be just as responsible for those peer models as they are for those inclusive kids. I think sometimes those peer model kids tend to get lost on the radar a bit.” A2 (describing what is necessary for inclusive education): “knowing the state standards and being able to assess your student and know where they’re at is very important because you then have to be able to differentiate the learning based on where those children are at.” A2: “An instructional round for us is, I'm sure you're familiar, is we're walking in the classroom, it's a snapshot of what we see when we come into the classroom, really specifically focusing on student engagement, not necessarily what the teacher is doing. That does feed into it, but it's really about what is the teacher doing to facilitate that student engagement and how are students responding to the learning at that time.” A3: “part of the expectation of how to do your job here –it’s like you’re gonna have to have data to back up what you say or what you’re asking for”

ECE: Community-Based Center

	Inclusive Education Quality		Instructional Content & Processes	Teacher-Child & Child-Child Interactions	Differences between Children with and without Disabilities
Access	CLASS		Academic Content Presented -34.1% <u>Teacher Talk w/ Ac. Content</u> Feedback -6.4% Open-Ended Q -7.3% Request for Action -3.7% <u>Literacy Instruction</u> Lit Instruction -13.1% Reading -3.3%	<u>Activity Structures</u> Centers -57.3% Large group -34.3% Small group (“teacher-led center”) -.1% <u>Teacher Talk</u> - Feedback -6.5% + Feedback -8.7% Open-Ended Q -10.9% Request for Action -21.7% <u>Teacher Involvement</u> Close Proximity -17.8% Gen Supervision -82.1%	• No difference in Teacher Talk types • Children with disabilities more likely to be sole recipient of teacher talk (but overall similar amounts of talk) • Children with disabilities more likely to get literacy instruction • Children with disabilities less likely to be read to
	Productivity	6.1			
	Instructional Learning Formats	5.1			
	Concept Development	3.75			
	ICP				
	Adapt Space & Materials	7			

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td>• Children with disabilities more likely to be in close proximity to the teacher</td></tr>
<tr><td></td><td colspan="5">T8: “Our children know where the item are, it’s very open so they don’t have to go looking through things. It’s just look around and you’re –easy to flow through.”
T9: “I try to make sure that the appropriate amount of space is there to get between all the furniture and allow the children access to centers. I also try to make sure that anything that contains toys as manipulatives, they can open and close their own boxes, they can reach their own boxes.”
T10: “We don't have a textbook, obviously, but not just sitting and reading and telling them information but, "Oh, you have a question? Well, let's Google it. Let's find out together. Let's go outside and look for that thing," or even using some of the cartoons that they watch and being able to relate it back.”
A4: “We don't have to do... We have assessments, but they're in more generalized, developmentally appropriate ranges we want the kids to be in before they leave here. We don't fall under those confines of MAP testing or the standards based testing the school district has to fall under. We don't have numbers to meet essentially from an assessment stand point. I think the way we approach children is just different.”</td></tr>
<tr><td>Participation</td><td colspan="2">CLASS
Positive Climate 6.75
Negative Climate 7
Teacher Sensitivity 6.25
Regard for Student Perspectives 6.25
Behavior Management 6.1
Quality of Feedback 4
Language Modeling 5.25
ICP
Adult 4</td><td>• Open-ended questions correlated with social attention for children with disabilities (.222**) and without disabilities (.125**)
• Open-ended questions correlated with</td><td><u>Child Social Behavior</u>
Child –Words -12.9%
Child –Social Attn -40%

<u>Classroom Engagement</u>
Academic Response -3.8%
Academic Attn -19.8%
Nonacademic manip. -24.9%
Nonacademic attn. to materials -13.1%
Pretend Play -4.7%

<u>Child Social Partner</u></td><td>• Children with disabilities less likely to be speaking words
• Children with disabilities more likely to have a teacher as their partner
• Children with disabilities less likely to have another adult (i.e., student worker) as their partner
• Children with disabilities less likely</td></tr>
</table>

	Involvement in Peer Interactions		academic attention for both children with disabilities (.319**) and without disabilities (.157**) • Teacher general convo correlated with academic attention for both children with disabilities (.382*) and without disabilities (.100*)	Teacher -25.9% Indiv. Child -17.6% Other Adult (i.e., student workers) -6.1% None -45.9% • Teacher general convo correlated with social attention for both children with disabilities (.279**) and without disabilities (.214**) • During Centers, teacher conversation positively correlated with children's academic attention (.252**)	to have another child as their partner • Children with disabilities more likely to be engaged in academic attention • Children with disabilities less likely to be engaged in pretend play • Children with disabilities less likely to be engaged in non-academic attention to materials • Teacher feedback positively correlated with academic attention for children with disabilities (.147**) and academic responses for children without disabilities (.181**) • Requests for action correlated with academic response for children with disabilities only (.117*) • Teacher close proximity negatively correlated with child
	Adult Guidance of Free Play	6			
	Conflict Resolution	6			
	Membership	6.5			
	Relationships Btwn. Children & Adults	7			
	Support for Communication	4			
	Adaptations of Group Materials	5			
	Transitions	5			
	Feedback	5.5			

					social partner being a child for children without disabilities only (-.126**)
	T8: "And then the same thing with centers, I try to introduce new and interesting things based on like, "Here are [what] the children talking about…" So, for example, we've been learning about birds for a month, because our kids have been really excited about birds. We also have…We're gonna move into magic, cause our kids have been doing magic tricks like a little…" T9: (in response to what she views as especially important for IE) "Knowing your children…and what things excite them, and then I think choices is a really good idea in all classrooms…" T8: "We have not planned a lesson that the children have not said, "This is what I wanna learn about." We always base what we talk about in our classroom off what they're interested in. Even if its…one lesson we did was about cucumbers because somebody said, "How does a cucumber become a pickle?...We always try to listen to what they are interested in and curious about." T10: "We do intentionally try to make sure that we're hitting different groups of kids at different times…if we can't hit [objectives] in large group because, like I said, some of our kids could care less about large group, but making sure we hit it with them at small group. Or even if they're not gonna come to our teacher-led table, making sure that we try to hit on whatever we're working on, just in the conversation at blocks...This kid learns the best while building blocks, so let's figure out a way to work whatever it is." T11: "It's just very child-led. We have that availability. Our children tell us what they wanna do from day to day. Like today I'm like, "What do we wanna do?" "I think we should paint." Oka maybe we can get some painting stuff out." They know that it's their room, and they're comfortable cause our class is there. We have a really early class, and a really late class." T11: "Large group is a little more difficult, but we have different expectations. So ways we may do something for one child is gonna look completely different than how we do something for another child in large group, but it all kind of goes together."				
Supports	ICP				
	Family-Professional Partnerships	4			

	Monitoring Children's Learning	2			
	T8: "They're always sending out professional development possibilities, opportunities. We have an entire website dedicated to lessons and learning that you can go and pick any of them and take any of them." T 9: "will record or take pictures on the tablet…and then also I'll do written stuff. I'll follow the kids around and just kind of write down things that they're saying" T9: "that's mostly the service provider. Like they are really in charge of establishing his goals. I can make suggestions, like, oh I think that area is really good or this area could use some development…The checkpoint from teaching strategies is all us." T10: "A lot of it's just watching them for social, emotional, and stuff like that. And then we do second step, so just seeing what they've picked up on our second step. But then we also have data-related: Can you do your alphabet? Do you know the sounds of the letters? So that's actually just sitting down and asking them to recite or tell us what they know… We use Teaching Strategies GOLD. The assessment that we fill out is on that." T10: "It's more mental, I would say, unless it's something that we're tracking for a specific kid, and then we'll take... We have data sheets. But it's mainly just... Or I guess... I mean we keep files. So like, we'll write a note, but it's not on official like documentation, so to speak. Just lots of scraps of paper." A4: "Operate the curriculum at fidelity to the best of our ability, but sometimes that doesn't always work for all of our kids. So depending on the needs of the classroom, how do we adapt our curriculum to meet the needs of each individual child?" A4: "So I think the training that our teachers have is a struggle. I don't know if it has anything to do with our affiliation, but it does put a huge burden on, especially early childhood centers, to train people." A4: "We don't use QRIS. We use the CLASS evaluation is a big tool… We also use the NAEYC criterion to gauge our –It's not a really data collection on effectiveness, but more on the physical environment to make sure we're compliant with all those standards, which are considered to be the highest standards you can have in early childhood. So we use those NAEYC guidelines from a data collection, quality improvement, the CLASS tools are our primary tool that we use."			

Appendix E: Cross-Case Data Display

	Co-Teaching: Public School	ECSE: Public School	ECE: Community-Based Center
How do features of the organizational context influence the global quality of inclusive classrooms?	Regard for Student Perspectives (CLASS)		Regard for Student Perspectives (CLASS)
	Co-Teaching: 4.75 ECSE: 3.75		6.25 • Significantly less closed-ended questions for all children and children with disabilities, specifically (opportunities for child expression) • T8: "And then the same thing with centers, I try to introduce new and interesting things based on like, "Here are [what] the children talking about…" • T8: "We have not planned a lesson that the children have not said, "This is what I wanna learn about." • T11: "It's just very child-led. We have that availability. Our children tell us what they wanna do from day to day. • T9: (in response to what she views as especially important for IE) "Knowing your children…and what things excite them, and then I think choices is a really good idea in all classrooms…"
	Academic Content & Instruction		Academic Content (CIRCLE)

	(CIRCLE)	
	• Public school classrooms had significantly more academic content & literacy instruction • Children engaged in significantly more academic responses (all children and children with disabilities, specifically) • Children with disabilities, specifically, were presented with significantly more academic content • T1: "we plan side-by-side. She takes the objectives, the [state] early learning standards, and the TSG. And then I take the curriculum book…And then we talk about, "Okay. According to our pacing guide, that we have right now, what should be taught?" • T3: "the standards they want these children to be at are extremely high" • A1: "There are three goals that we have that we would like to see teachers doing in the classroom. One of them is around providing rigorous learning goals. And so it's going into the classrooms and seeing, are the teachers teaching the standards from the [state] early learning standards?" • T6: "When I do my planning, we all have pacing guides and so it'll tell us what letter we're working on, it'll tell us what we need to be working on with math and so I use those to pull from…it's based on the early learning standards." • T7: "I've just looked at our indicators and, "Okay, now we need to be learning this."	• A4: "We don't have to do... We have assessments, but they're in more generalized, developmentally appropriate ranges we want the kids to be in before they leave here. We don't fall under those confines of MAP testing or the standards based testing the school district has to fall under. We don't have numbers to meet essentially from an assessment stand point. I think the way we approach children is just different."
How do features of the organizational	Adult Guidance of Free-Choice Activities & Play (ICP)	Adult Guidance of Free-Choice Activities & Play (ICP)

context influence the quality of children's inclusion?	Co-Teaching: 4 ECSE: 4.67 • T3: "during free play, we try and embed some of those skills."	6 • Only in ECE was CIRCLE teacher convo positively correlated with academic content during centers • Children engaged in significantly more pretend play & non-academic manipulation • Children engaged in significantly more academic attention during centers • "some of our kids could care less about large group, but [we're] making sure that we hit [objectives] with them at small group. Or even if they're not gonna come to our teacher-led table, making sure that we try to hit on whatever we're working on, just in the conversation of blocks
	Monitoring Student Learning (ICP)	Monitoring Student Learning (ICP)
	Co-Teaching: 6 ECSE: 5.3 • T1: "At the end of each quarter, [T1] does a IEP progress report, and then every student, SPED and Gen Ed, both get a report from TSG. That's where we enter our data and that's sent home every quarter."	2 • T9: "that's mostly the service provider. Like they are really in charge of establishing his goals. I can make suggestions, like, oh I think that area is really good or this

	• T1: "So we use the pacing guide as a guide on where they should be. We take, obviously, baseline data. We take data during small groups. We do informal and formal. So we have the formal paper copies… The formal ones are the ones that we do where we pull them out of centers, or I feel like that they're formal ones. Our informal ones are more of like what we're writing down during small group time." • A1: "we told them when we had professional development around data collection is that we needed to be able to –that they needed to have enough data to support their instructional decisions." • T5: "Well, daily I'm assessing, but formally, I do a weekly data collection on their progress monitoring per goal." • A3: "part of the expectation of how to do your job here – it's like you're gonna have to have data to back up what you say or what you're asking for"		area could use some development…The checkpoint from teaching strategies is all us." • T10: "A lot of it's just watching them for social, emotional, and stuff like that. And then we do second step, so just seeing what they've picked up on our second step. But then we also have data-related: Can you do your alphabet? Do you know the sounds of the letters? So that's actually just sitting down and asking them to recite or tell us what they know… We use Teaching Strategies GOLD. The assessment that we fill out is on that." • T10: "It's more mental, I would say, unless it's something that we're tracking for a specific kid, and then we'll take... We have data sheets. But it's mainly just... Or I guess... I mean we keep files. So like, we'll write a note, but it's not on official like documentation, so to speak. Just lots of scraps of paper."
How do features of the service delivery model influence the quality of children's inclusion?	Peer Interactions (CIRCLE)	Peer Interactions (CIRCLE)	Peer Interactions (CIRCLE)
	• When adult was in close proximity, children had significantly more peer interactions compared to ECSE and ECE	• Teachers in close proximity to children with disabilities significantly more & talked with children with disabilities more	• Only model where children with disabilities had significantly fewer peer interactions than typically-developing peers

	classrooms (pattern was true for children with disabilities compared to ECSE classrooms, but not ECE) • T1: "we really, really work hard in the beginning of the year to create that community in the big classroom." • T2: "We're not gonna say, 'Oh, come play this.'…Especially in the blocks area that you see a lot of individual things, a lot of kids playing near each other. But we could facilitate it by seeing and coming up with an idea together and seeing – Having them share the blocks, having them share the toys, to help with communication that way. Even with planning as well, like, 'what should we make? Oh, he's got an idea, let's try that."	• Only model where both teacher proximity and talk was negatively correlated with peer interactions • Children partnered with an adult significantly more (as opposed to a peer) • Children partnered with other children significantly less • T5: "we call them hearing peer models…so they are modeling for us age-appropriate speech production for our deaf/hard of hearing students. They are modeling listening skills for our deaf/hard of hearing students. They are modeling compliancy. They are modeling following directions" • T5: "I think they learn so much from the social play with their peers, such as during centers, in working on those learning goals" • T6: "we just try to model and show them what they need to be doing. Use language with them, appropriate language…modeling that	• T10: "I think that's our biggest challenge is the kids who do have a little bit longer processing times, sometimes other friends get swept a bit under the rug in terms of trying to get this kid over this situation."

		appropriate speech, and that appropriate social boundary."	
How do features of the service delivery model influence the individualized learning experiences of children with disabilities?	Feedback (CLASS, ICP, CIRCLE)	Feedback (CLASS & ICP, CIRCLE)	Feedback (CLASS & ICP, CIRCLE)
	CLASS: 4.75 ICP: 4.5 • Feedback correlated with academic attention for both children with and without disabilities • Feedback only correlated with academic responses for children without disabilities • T1: "I try to be mindful of like morning circle. If there's something that fits in with an IEP goal, I try to direct it towards that kid."	CLASS: 3.2 ICP: 4 • Only model where children with disabilities got significantly more feedback than typically-developing peers • Only model where children with disabilities got significantly more negative feedback than typically-developing peers • Only model where teacher's feedback was positively correlated with academic responses for children with disabilities (also positively correlated with academic responses for children without disabilities) • T7: "need more one on one time with me. And it has to be intentional to make sure they're getting what they	CLASS: 4 ICP: 5.5 • Feedback correlated with academic attention for children with disabilities and academic responses for children without disabilities • T8: "we're aware of what the children are working on and what they need help with…I don't know if I have the main responsibility of it." • A4: service providers "kinda take the lead once a child has been identified as needing services."

		need, making sure I've gotta take data on their goals and make sure that there's a time during the day that they'll be able to show me that goal."	
	Concept Development (CLASS)	Concept Development (CLASS)	Concept Development (CLASS)
	3.25 • T2: "[T1] takes care of a lot of the Gen Ed curriculum lesson plans. And I am the one that kinda goes in and helps tweak it to include the special needs students." • T3: "the standards they want these children to be at are extremely high" • A1: "There are three goals that we have that we would like to see teachers doing in the classroom. One of them is around providing rigorous learning goals. And so it's going into the classrooms and seeing,	2.08 • Only model where teacher's general conversation was positively correlated with academic content • Only model where children with disabilities got different types of teacher talk and more teacher talk • T5: "we do a book and we do internet research on that. Then a goal might be, I don't know, a friend's learning colors or concepts: big, small, and those things." • (asked about the goals and objectives that guide the individual work time), T6: We use IEP goals but then we also do other things.	3.75 • Significantly more open-ended questions when academic content was presented compared to ECSE and Co-teaching classrooms • T10: "We don't have a textbook, obviously, but not just sitting and reading and telling them information but, "Oh, you have a question? Well, let's Google it. Let's find out together. Let's go outside and look for that thing," • A4: "We don't have to do... We have assessments, but they're in more generalized, developmentally appropriate ranges we want the kids to be in before they leave here. We don't fall under those confines of MAP testing or the standards based testing

	are the teachers teaching the standards from the [state] early learning standards?"		

Appendix F: Classroom CLASS Dimension and Domain Scores

Classroom CLASS Dimension Scores

	Co-Teaching: Public School		ECSE: Public School			ECE: Community-Based Center	
	1-101	1-103	2-104	3-105	3-106	4-107	4-108
Positive Climate	5.75	6.25	7	6.75	5.5	6.5	7
Negative Climate[a]	7	7	7	6.5	7	7	7
Teacher Sensitivity	6	6	6.25	6.25	5.25	6.25	6.25
Regard for Student Perspectives	4.5	5	3.75	3.25	4.25	6.5	6
Behavior Management	6	5.25	6.5	6	6.25	6	6.25
Productivity	5.75	5.75	6.5	6.25	6	6	6.25
Instructional Learning Formats	6	5.5	5	4.5	4.75	5	5.25
Concept Development	3	3.5	2.25	1.75	2.25	3.25	4.25
Quality of Feedback	4.75	4.75	3.75	2.5	3.25	3.25	4.75
Language Modeling	3	4	4.5	2.25	4.25	4	5.5

Note: [a]Negative Climate is reverse coded so a high score represents the absence of a negative climate

Classroom CLASS Domain Scores

	Co-Teaching: Public School		ECSE: Public School			ECE: Community-Based Center	
	1-101	1-103	2-104	3-105	3-106	4-107	4-108
Emotional Support	5.8	6.1	6	5.7	5.5	6.6	6.6
Classroom Organization	5.9	5.5	6	5.6	5.7	5.7	5.9
Instructional Support	3.6	4.1	3.5	2.2	2.4	3.5	4.8

Appendix G: Classroom ICP Scores

	Co-Teaching: Public School		ECSE: Public School			ECE: Community-Based Center	
	1-101	1-103	2-104	3-105	3-106	4-107	4-108
Adaptations of space, materials, and Equipment	7	7	7	6	7	7	7
Adult involvement in Peer Interactions	4	4	4	3	5	4	4
Adult Guidance of Free-Choice Activities and Play	4	4	6	4	4	6	6
Conflict Resolution	5	6	5	4	4	6	6
Membership							
Relationships between adults and children	4	4	7	4	4	7	7
Support for communication	4	4	4	3	3	4	4
Adaptations of group activities	6	4	6	6	5	5	5
Transitions	6	6	6	6	5	5	5
Feedback	4	5	4	4	4	5	6
Family-professional partnerships	4	4	4	5	2	4	4
Monitoring children's learning	6	6	5	6	5	2	2
Total (Average) Score	5	5	5.3	4.75	4.5	5.13	5.17