A Conceptual Framework for Understanding and Supporting Children's Development During the Kindergarten Transition

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Abstract This chapter presents a conceptual framework through which researchers, practitioners, and policy-makers can organize an understanding of children's development during their transitions from their primary preschool settings (e.g., homes, public pre-K programs, private pre-K programs) into the K-12 educational system. The first half of this chapter focuses on developing an understanding of the processes that impact children's Kindergarten transitions. We conclude that children's experiences of the Kindergarten transition are affected by the characteristics of children themselves, their educational settings, the large-scale systems that support children's educational experiences, and the way each of these is dynamic over time. We draw on research and theory to show that children's transitions are smoothest when their experiences in educational settings are of consistent high-quality and become increasingly complex over time to support children's developing skillsets. The second half of this chapter applies the conceptual framework to educational practice by showing how some common strategies for improving children's Kindergarten transitions fit within this framework.

A Conceptual Framework for Understanding and Supporting Children's Development During the Kindergarten Transition

The start of Kindergarten occurs at a time of life when young children are undergoing rapid changes in their neurological, biological, and cognitive systems (e.g., Sameroff & Haith, 1996; Werner, 1995) and when strategic investments of resources have the powerful potential to produce lasting positive impacts on children's well-being and development (e.g., Diamond & Lee, 2011; Heckman, 2007). To leverage this potential of intervening early in young children's lives, an entire system of early childhood education (ECE) has been built in the United States over the past 60 years. The system comprises different programs for young children and their families

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operating at federal (e.g., Early Head Start and Head Start), state (e.g., pre-K programs and Kindergarten), and local levels (e.g., pre-K programs in some cities). The system also includes many stakeholders from varied backgrounds—parents, preschool and Kindergarten teachers, preschool directors, school principals, and federal, state, district, and local policy-makers and program administrators—all of whom are working toward a common goal of supporting young children in ways that help them adapt to the new demands of Kindergarten and set the stage for later success in school and in life.

To achieve this goal, there are three general strategies at hand that function as the "levers" to improve the effectiveness of the system of ECE. These are *policies* that design and structure programs in ways that create favorable conditions for children to develop and thrive (e.g., full-day or part-day programs, minimum requirements for teacher education, maximum class sizes); *programs* for teachers, parents, and other primary caregivers that develop their skills in promoting experiences at home and school that foster children's development (e.g., teacher professional development, parent education); and *practices* that educators, including parents and professionals, implement directly with children that are focused on promoting specific domains of learning (e.g., curricula, social-emotional learning activities). The chances that our policies, programs, and practices will produce meaningful improvements in young children's lives, in the near- and long-term, are increased when these strategies are informed by an understanding of children's development during this time period. This includes an awareness of the developmental processes occurring within the child during this dynamic time of life and, more importantly, an understanding of the specific types of experiences that children need over time within their home and other primary settings that best support their long-term development and well-being.

The purpose of this chapter is to construct a "conceptual framework"—a comprehensive and integrative perspective about children's transition to Kindergarten—that helps organize our understanding of children's development from the ages of 5–7 when they transition from their primary preschool settings (e.g., homes, public pre-K programs, private pre-K programs) into the K-12 educational systems. The first half of this chapter focuses on developing a common understanding of the processes affecting children's development during the Kindergarten transition. In the second half of this chapter, we discuss the implications of this conceptual framework for implementing strategies that can most effectively support children's long-term development.

Understanding Children's Development During the Kindergarten Transition

A wealth of research has been conducted to understand how to support children's learning during early childhood and into their elementary school years. Given the complexity of this problem, it is not a surprise that the research on how to best

support early learning is also widely varied. For example, research on early learning focuses on *a diverse set of outcomes* (e.g., some studies focus on children's development of academic skills (Duncan et al., 2007), while others focus more on social and emotional skills (LoCasale-Crouch, Mashburn, Downer, & Pianta, 2008)). This research also uses *a diverse set of predictors* (e.g., some studies focus on what children's teachers and parents can do to support their learning, while others focus on systemic influences like growing up in poverty (Evans, 2004), and still others think about how children's own characteristics influence their development (Duncan et al., 2007)) and seeks to understand development across *a diverse set of timeframes* (e.g., some studies focus on how children develop during a single year of preschool (Mashburn et al., 2008), while others follow children across multiple years of school (Duncan et al., 2007; Mashburn & Yelverton, in press)). Despite these differences in research questions and study designs, this research from the field of early education is united by the goal of helpings us understand and support children's early learning. However, because it spans such a broad set of research questions and because studies that focus on different aspects of children's development may come to seemingly contradictory conclusions, it can be difficult for researchers, educators, parents, and policy-makers to organize our understanding of this research in a way that illuminates clear, actionable steps that can be taken to support children's development.

Child, Setting, and System Characteristics Supporting Children's Development

One way we can begin to organize our understanding of the literature on children's early education is to specify the key players in children's development and how each of those players can positively impact children's growth. These players might include parents (e.g., mothers influence children's social development; Ainsworth, Waters, & Wall, 1978), teachers (e.g., high-quality instructional interactions influence children's development of literacy skills; Mashburn et al., 2008), and peers (e.g., being in a class with highly verbal peers predicts children's language growth; Mashburn, Justice, Downer, & Pianta, 2009). Children themselves are also active participants in their own learning processes (Piaget, 1977). Children's learning may also be influenced by people in the educational community with whom they may never directly interact: for example, the policies put into place by a school district superintendent are likely to impact individual children's classroom experiences.

In this conceptual framework, we will organize early education research into three broad categories by the primary focus: (1) research that describes *processes occurring within the child* that lead to further learning and development, (2) research on *the interactions that children experience with members of key developmental settings* (e.g., at home or in a preschool classroom) that may foster learning, and (3) research on *processes that occur in larger-order systems*, such as federal, state, and

local education agencies, that influence the types of experiences children will have as they move through educational settings. We will describe the ways in which *children*, *settings*, and *systems* all have their own sets of characteristics, and we will review existing research to identify which of these characteristics foster and hinder children's growth.

A Child Perspective: Child Characteristics that Support Children's Development Each child brings their own personal characteristics, experiences, and skills into Kindergarten, and these qualities have a powerful impact on their development throughout school (Claessens, Duncan, & Engel, 2009; Duncan et al., 2007; Li-Grining, Votruba-Drzal, Maldonado, & Haas, 2010). Understanding children's unique sets of skills and characteristics is critical to understanding the Kindergarten transition for two reasons: first, supporting the development of children's skills throughout early childhood is one major goal of parents, educators, and policy-makers during this time and, second, children's characteristics, experiences, and skills may serve as resources to support their further development once they are in Kindergarten.

In order to understand how to best support children's development during the Kindergarten transition, it is important to identify which skills and characteristics are developing during these years. Children are experiencing major developmental milestones during this "five to seven year shift" (Sameroff & Haith, 1996) across a broad set of domains—social-emotional, motivational, cognitive, and self-regulatory. This view of child development as being differentiated across a multitude of important domains is matched in many national initiatives around ECE that defines these key developmental outcomes. For example, during the infant and early childhood years, the American Academy of Pediatrics has identified developmental milestones in the domains of health, motor, cognitive, and social skills (Hagan, Shaw, & Duncan, 2008). Furthermore, Head Start's Child Development and Early Learning Framework identifies specific standards of development for children aged 3–5 in 11 domains—physical development and health, social and emotional development, approaches to learning, language, literacy, math, science, creative arts expression, logic and reasoning, social studies, and English language development (Head Start, 2017). Clearly, supporting children's development during the Kindergarten transition means supporting skill development across multiple domains both within and outside of the traditional academic skills framework.

Children's characteristics, experiences, and skills may also serve as potential *resources* for children as they develop throughout Kindergarten. For example, early self- and emotion-regulation abilities can support development of academic skills (Li-Grining et al., 2010), linguistic skill can support development of self-regulatory skills (Peterson et al., 2013), development of social skills is a key piece of being an effective learner (Konold & Pianta, 2005; Zill & West, 2001), and early academic skills can support later academic success (Claessens et al., 2009; Duncan et al., 2007). In contrast, some child qualities may impede children's adjustment in a classroom: for instance, children who enter Kindergarten with externalizing behavior problems, who may be aggressive in the classroom, are at risk for academic struggles (Miles & Stipek, 2006).

Collectively, the types of characteristics at Kindergarten entry that predict children's growth throughout their academic careers have been extensively studied by school readiness researchers. The "school readiness" model for understanding the transition into Kindergarten gained attention at the federal level in the wake of the National Education Goals Panel's commitment to the goal that all children should start school ready to learn (NEGP, 1999). Over the following years, the NEGP's five proposed domains of school readiness—physical well-being and motor development, social and emotional development, approaches toward learning, language usage, and cognition and general knowledge—have been the topic of research and debate. In general, however, research has shown that children's skills in each of these domains at Kindergarten entry predicts at least some elements of their growth across multiple developmental domains as they move through elementary school (fine motor skills and general knowledge (Grissmer, Grimm, Aiyer, Murrah, & Steele, 2010), social and emotional development (Konold & Pianta, 2005), approaches toward learning (Claessens et al., 2009; Duncan et al., 2007; Li-Grining et al., 2010), language and mathematics ability (Duncan et al., 2007), prosocial behavior and aggression (Miles & Stipek, 2006)).

Overall, the research on school readiness shows the importance of focusing on children themselves as key players in their own learning during the Kindergarten transition. Each child enters school with a set of strengths and weaknesses that may contribute to their ability to take advantage of classroom opportunities for learning and which are likely to predict their development of the set of skills that are the desired outcome of schooling. Parents and educators who want to apply the study of school readiness to their own practice might use this information in a few different ways: (1) this research identifies which skills may be beneficial for children to learn by Kindergarten entry, so parents and teachers who work with pre-Kindergarteners may choose to focus instruction on some of those skills and (2) understanding an individual child's strengths and weaknesses at Kindergarten entry may help parents and teachers in constructing individualized programs of learning for children that utilize their strengths to make improvements in their areas of weakness.

In addition to personal characteristics and skillsets, each child also brings a unique set of prior experiences to Kindergarten entry. For example, while some children may have been enrolled in a preschool for years prior to Kindergarten entry, for other children, the first day of Kindergarten represents the transition from being cared for primarily by parents into a school setting with new expectations and a new social structure. The nature of children's experiences prior to Kindergarten may contribute to their development during Kindergarten in multiple ways. First, in accordance with school readiness literature, when children's experiences prior to Kindergarten have given them a set of skills and characteristics that are adaptive in the Kindergarten context, children may benefit (Claessens et al., 2009; Duncan et al., 2007; Grissmer et al., 2010; Li-Grining et al., 2010, Miles & Stipek, 2006). In addition, when children's previous experiences in classrooms share similarities with their experiences in Kindergarten, they may experience smoother transitions: for example, a child who is already familiar with classroom routines like sitting on a carpet and raising a hand to speak may have an easier time adjusting to Kindergarten than a child who has never practiced those routines.

Some sets of early experiences put children at risk for starting Kindergarten at a disadvantage. For example, children with experiences of living in poverty during their early childhood years are more likely than their higher-income peers to experience instability in housing, separation from their families, and toxic environmental pollution and are less likely to have experiences with books, computers, and high-quality preschools at an early age (Evans, 2004). Correspondingly, they are also at risk for starting Kindergarten with lower levels of academic and social-emotional skill than their peers from higher-income families (Reardon, 2011; Zill & West, 2001). Moreover, in addition to contributing to school readiness, children's early experiences with family and in preschool may predispose them to engage with Kindergarten in different ways. For example, children whose earliest social experiences are with parents who are highly responsive to their needs are more likely to enter school with a secure attachment style which leads them to seek out positive relationships with teachers, whereas children whose earliest social experiences have included less responsivity from primary caregivers may need additional teacher support to forge positive student-teacher bonds (Buyse, Verschueren, & Doumen, 2011).

In sum, the unique set of skills, characteristics, and experiences that each individual child brings to the table at Kindergarten entry is of great importance to understanding the Kindergarten transition. These skills serve both as potential resources for children's development and also as the outcomes that classrooms are hoping to foster. Understanding how these skills grow over time as children move from their pre-Kindergarten experiences into the Kindergarten classroom is fundamental to understanding the Kindergarten transition.

A Setting Perspective: Setting Characteristics that Support Children's Development Developmental settings can be thought of as the immediate social settings that children inhabit in which they actively participate and have defined activities, relationships, and roles. Children's direct experiences within these settings are one of the primary mechanisms through which learning and development occur (Hamre et al., 2013; Mashburn & Pianta, 2010).

Perhaps the most impactful setting for children's development is their home and family: children's caregivers and surroundings in the home setting begin to impact their development before they are even born (e.g., maternal prenatal depression predicts infant temperament, Field, 2011) and continue to be powerful factors in children's development across all domains throughout childhood (e.g., social (Ainsworth et al., 1978). cognitive (Vygotsky, 1980), language (Zimmerman et al., 2009), neurological (Huttenlocher, 2009)). In addition to children's home setting, their educational settings are also key developmental contexts. To understand children's development across the Kindergarten transition, two educational settings are particularly critical: ECE settings (e.g., Head Start, preschool classrooms) and Kindergarten classrooms. Similarly to children's home experiences, their experiences with teachers and surroundings in these educational settings will influence the ways in which they develop across all developmental domains (e.g., social (Buyse et al., 2011), cognitive (Vygotsky, 1980), language (Mashburn et al., 2008)).

Although the majority of children attend a school-based Kindergarten classroom (NCES, 2017), the specific type of ECE setting that children experience often varies from child to child. Some children may attend family childcare homes, in which a caregiver provides childcare out of their home to a small number of families. Other children may attend childcare centers, larger programs in which care is provided for children outside of the home at some sort of facility. Childcare centers can further range from facilities that provide only custodial care to facilities that include educational and social-emotional development as their goals (e.g., Head Start, Montessori). Finally, some children may not experience an ECE setting outside their own home.

Just as each child has their own set of particular characteristics that are important for their later development, each of these developmental settings has its own set of characteristics that can influence children's learning. When settings' characteristics are attuned to children's needs, skills, and prior experiences, this supports children's learning and growth. More specifically, research indicates that educational settings that offer well-organized, instructionally stimulating, and emotionally supportive experiences have positive impacts on children's skills development across domains (e.g., Howes et al., 2008; Mashburn et al., 2008).

One important setting-level characteristic involves the quality of the child's interactions within their homes, ECE classrooms, and other primary settings wherein the child spends substantial time. For example, ecological and social interaction theories of development (e.g., Bronfenbrenner & Morris, 1998; Vygotsky, 1980) applied to preschool classrooms (Mashburn & Pianta, 2010) offer explanations for how children's development occurs within ECE and Kindergarten classrooms. Namely, learning and development occurs through the child's back-and-forth interactions with adults, peers, and learning materials that occur on a regular basis and over extended periods of time, are appropriate to the child's current ability, and become progressively more complex.

More specifically, types of social interactions in classrooms that impact young children's development of academic and social-emotional skills include those characterized as emotionally supportive, well-organized, and instructionally supportive (Hamre et al., 2013). For example, Mashburn et al. (2008) found that emotionally supportive classroom interactions (e.g., positive climate, responsivity to children's emotional needs) were positively associated with children's development of social-emotional skills. Further, instructionally supportive classroom interactions (e.g., language modeling, concept development) were positively associated with children's development of literacy, math, and language skills during the preschool year.

Characteristics of instructional practices that children experience within their classrooms also affect children's development from ECE through Kindergarten. Instructional practices vary across ECE classrooms with regard to how much time is spent on academic instruction (e.g., math and literacy instruction), child-led activities (e.g., free-choice centers), and teacher-directed whole-group activities (e.g., book readings, group lessons). There is some empirical evidence suggesting that specific instructional practices in ECE classrooms are positively associated with children's development. For example, Ball and Blachman (1991) found that Kindergarten instructional practices focused on phonemic segmentation and

letter-sound combinations were positively associated with children's reading and spelling outcomes. Further, Claessens, Engel, and (2014) found that greater exposure to *advanced* math and reading instruction in Kindergarten was positively associated with academic skills; however, frequency of *basic* skills instruction was not associated with children's development.

Taken together, this body of research shows that the setting characteristics that are most important for children's development are those that directly impact the interactions children have with the people, objects, and ideas in their homes and classrooms. When settings include caregivers and teachers who are emotionally supportive, have a well-organized structure, and include instructionally rich and supportive stimuli and interactions which are appropriate to children's current level of understanding, children benefit (Mashburn et al., 2008; Hamre et al., 2013). Furthermore, the extent to which children benefit from these positive home and classroom interactions depends on the extent to which the interactions are sustained over time (e.g., children's teachers consistently interact with them in ways that are emotionally supportive, Curby, Brock, & Hamre, 2013) and become increasingly complex to match children's needs as they gain new developmental skills (e.g., once children have mastered early reading skills, their instruction shifts to target more advanced reading skills, Claessens et al., 2014).

The System Perspective: System Characteristics that Support Children's Development Each setting that children directly experience is supported by larger systems of support. These *systems* are the offices, agencies, and/or departments that determine the policies, programs, and pedagogical practices that structure the developmental settings in ways that affect the quality of a child's experiences within. For example, the Kindergarten classroom setting is situated within federal, state, and district Department of Education administrative agencies, and the policies and organizational structures of these agencies have implications for the experiences a child will have within their Kindergarten classroom. The systems that support ECE classrooms are less cohesive: while many are housed within federal, state, and local agencies like Head Start, many more ECE settings are part of private agencies with separate standards, and others still are fully independent.

At the federal level, the Department of Health and Human Service's Office of Head Start and the Department of Education set standards and provide supports for Head Start and Kindergarten programs, respectively. However, individual states and local governments may also set separate standards and provide separate supports that affect children's experiences in pre-K and Kindergarten. State accreditation systems exist to monitor the quality of private and home-based childcare settings. Other systems that exist to support children's early development may affect family, ECE, and Kindergarten settings: for example, the State of Oregon has instituted local Early Learning Hubs, which are organizations that attempt to unite and coordinate efforts to improve children's learning and well-being from the prenatal years to age 8, in family, school, and ECE settings. Collectively, these systems enact policies regarding minimum credentials for teachers, class size, and teacher-to-child ratios. They determine the types of programming and practices that are available to

children, families, and school staff. And they define standards of development, methods of assessing whether standards are met, and pedagogical approaches to promote development.

The systems that affect the family setting are even more varied than those affecting education settings. Families may be impacted by a range of federal, state, and district systems, such as those put in place to protect children from abuse and neglect and those that give assistance to low-income families. Families may also be impacted by private systems such as parents' workplace policies around flexible workdays, paid sick leave, and maternity and paternity leave.

Each of these systems has characteristics that may impact children's development by affecting the environments in which they are growing and learning. For example, federal standards surrounding learning goals and benchmarks for children's development can impact the nature of the curricula that children experience (Bassok, Latham, & Rorem, 2016). State accreditation standards for ECE settings may affect a variety of setting-level characteristics, including the child-to-teacher ratio in children's classrooms, and the types of routines and behavior management techniques used. For public schools, funding and staffing levels of programs may be set by higher-order government systems.

Decisions made at the system level have the potential to promote young children's development when they improve the quality of children's direct experiences within their immediate developmental settings (Mashburn & Pianta, 2010). When systems' policies and goals are well-aligned with children's needs and provide caregivers and teachers with the resources and training they need to implement high-quality classroom practices, children's development is supported. For example, systems may provide resources and programming targeted toward the Kindergarten transition to support schools' and teachers' use of transition practices, such as Kindergarten teachers communicating with parents, preschool-aged children visiting Kindergarten classrooms, teachers visiting students' homes at the start of the year, parent orientations, and in-school summer programming for pre-Kindergarten students (LoCasale-Crouch et al., 2008; Schulting, Malone, & Dodge, 2005). The success of this increased system-level support for children and families across the Kindergarten transition depends on the extent to which these practices directly involve students—when transition practices involve children themselves, these practices are more likely to close income-based gaps in school readiness (LoCasale-Crouch et al., 2008). Overall, the research suggests that when policies are designed to lead to improvements in those setting-level characteristics that support children's learning—in other words, when policies will help children's homes and classrooms to become more emotionally supportive, well-organized, and/or instructionally supportive—those policies are more likely to support children's learning.

The Dynamic Perspective: Children, Settings, and Systems Over Time Until this point, this chapter has discussed children, settings, and systems as being relatively stable. We have discussed children's traits that may benefit them in the school system, classroom qualities that lead to increased growth for students, and characteristics of system-level approaches that are likely to create meaningful change in

children's lives. However, over the Kindergarten transition, the characteristics of children, settings, and systems are *dynamic,* meaning they change over time. For example, as children grow, they will learn new skills that may act as new resources for their future development; classrooms that are disorganized at the beginning of a school year may become more organized over time as a teacher adapts to children's needs; and systems frequently implement new policies designed to support students' growth. Therefore, when thinking about the Kindergarten transition, it is not sufficient to understand how the characteristics of children, settings, and systems support children's growth—it is also essential to understand how these children, settings, and systems change over time and how these dynamics may support or hinder children's development.

The Dynamic Child Across the Kindergarten transition, children experience growth across many developmental domains. As discussed previously, this growth is the desired outcome of most home and school settings: federal and state systems have described learning benchmarks that children are expected to reach by specific ages (Council of Chief State School Officers, 2012; Shepard et al., 1998) and educational researchers are interested in describing both children's attainment of certain levels of knowledge and skill (e.g., Duncan et al., 2007) and the rate at which children are learning those skills (e.g., Li-Grining et al., 2010).

This dynamic growth is both underpinned by natural biological processes and conditioned upon children's experiences in key developmental settings. For example, children experience rapid growth in their prefrontal cortex between the ages of 4 and 6, and this neural development makes possible advances in entering Kindergarteners' cognitive, social, academic, and self-regulatory capacities (Durston & Casey, 2006). However, this neurological growth is maximized when children's environments are responsive, are language-rich, challenge them to perform to their fullest capacity, and set consistent, age-appropriate limits for children's behavior (Huttenlocher, 2009). The result of the interactions between these biological and environmental influences is growth across many important developmental domains: children develop physiological, psychological, and social capacities throughout their ECE and Kindergarten years, which they will draw on to engage in productive academic development throughout their school careers.

For parents, teachers, and policy-makers, whose goal is to support children's learning, understanding these dynamics can lead to supportive educational practices in a few ways. First, since individual children have different trajectories of growth, the interactions that support one entering Kindergartener might be less effective for another entering Kindergartener at a different developmental point. Further, since much of children's growth depends on their experiences with their worlds, to be effective in supporting children's growth, adults can ensure that children have high-quality experiences in developmental settings.

Dynamic Settings The previous section indicated that children tend to thrive in settings that are emotionally supportive, are well-organized, and include supportive instruction that is appropriately targeted to children's developmental level

(Hamre et al., 2013; Mashburn et al., 2008). However, much like the characteristics of children themselves, the characteristics of settings are dynamic. For example, the qualities of interactions a child experiences within their classroom may change over the course of a single day (e.g., there may be a difference in instructional quality between math center time and art time), from day to day (e.g., there may be differences in the overall level of classroom emotional support on the day of a field trip compared to the day of a standardized test), and from year to year (e.g., the behavioral expectations in a child's preschool classroom may look different than the behavioral expectations in their Kindergarten classroom).

Given these dynamics within children's educational settings, it is important for researchers, parents, teachers, and policy-makers to understand not only which types of interactions represent high-quality interactions that are supportive of children's growth but also how those interactions are or are not sustained over time. Developmental theory suggests that there are two major ways in which the dynamics of settings can benefit children: children benefit when they experience high-quality interactions repeatedly over the course of some extended period of time and between multiple settings (*consistency*; Bronfenbrenner, 1979) and when the content of children's interactions with the people, objects, and ideas in their settings becomes progressively more complex as children themselves develop increasing capacities (*continuity*; Bronfenbrenner, 1979; Dewey, 1938; Vygotsky, 1980).

Understanding how the dynamic characteristics of settings impact children's growth is complicated by the fact that different stakeholders in children's education may be invested in different developmental timeframes. For example, an educator who creates a school readiness promotion program in a preschool may be primarily interested in children's development from their preschool years up until their entry into Kindergarten. A Kindergarten teacher, in contrast, is likely more concerned with the classroom dynamics and learning that occur during the Kindergarten year. Educators who run summer programs for entering Kindergarteners may have an even shorter timeframe in which to create positive changes in children's lives. And parents support children's growth on a much longer time scale, as they are invested in their children's well-being from infancy through adulthood. To understand how to support children cumulatively, throughout their childhoods and into their futures as adults, it is necessary to understand the cumulative impact of dynamic settings throughout all of these shorter periods of time.

Dynamics of an Interaction Within Settings The educational theory and research that focuses on dynamic settings over time at the smallest level seeks to understand how children's experiences within a single interaction may shape their development. According to Bronfenbrenner's Bioecological Theory of Development (1979), the building blocks of human development are repeated, increasingly complex reciprocal interactions between developing individuals and their environments. Research that focuses on this type of dynamic process tracks children's moment-to-moment experiences with their world, to (a) describe how their development unfolds in real time and (b) determine whether there are types of interactions that are beneficial for children's learning. The interactions that are of interest to early educational

researchers may include children playing with learning materials in a Montessori classroom, children and teachers talking with each other, or children being read to and interacting with books.

The Classroom Assessment Scoring System (CLASS, Pianta, La Paro, & Hamre, 2008) is a popular measure that can be used to examine the ways in which children's settings are dynamic at the interaction level. To use the CLASS, observers directly watch and take notes on teachers' interactions with the children in their classroom and make ratings on the classroom's quality based on the interactions they see. For example, if researchers see interactions in which teachers spend time engaged in a back-and-forth conversation with children about children's work, where they help children work through learning problems using hints and scaffolding, those researchers might rate classrooms as having high-quality feedback for students. In contrast, in classrooms where teachers' interactions with students are relatively short and do not meaningfully engage with instructional content, where errors in students' understanding of subject matter are not adequately addressed during interactions with teachers, observers might rate classrooms as having lower-quality feedback for students. Research using this observational framework, which documents the quality of these moment-to-moment interactions within a classroom, suggests that over time, the accumulation of these high-quality smaller interactions leads to children's learning (Mashburn et al., 2008). Given that theory and research suggest that the accumulation of these small interactions are the most direct mechanism for children's learning, understanding how to ensure that the interactions children experience with their world are *high-quality*, and *sustained over time* in a way that is *aligned with children's developing skillsets and needs*, is key to supporting children's development throughout their educational careers (Bronfenbrenner, 1979).

Dynamics Across a Day: Consistency Within Settings Over the course of a given day, the nature and quality of the interactions children experience within any given setting are also dynamic. For example, in some classrooms, teachers are consistent in their provision of emotional support to children—they are similarly warm and caring to the children in the classroom regardless of what time of day it is or what activity is occurring. In other classrooms, teachers may alternate between expressing warmth, sensitivity, and caring during parts of the day and having a more neutral or negative affect during other times. This *consistency or inconsistency* in children's daily interactions is another important characteristic of their experiences within a setting.

Research shows that children's development benefits from predictability and stability in interactions, particularly when children experience interactions that are consistently high-quality and supportive of their developmental needs. Within children's home settings, caregivers' consistent responsivity to children's needs leads children to develop a secure attachment style (Ainsworth et al., 1978), which is a precursor to later social competence and achievement. In contrast, unpredictability and inconsistency in responsiveness can lead to children's cognitive and behavioral struggles down the road (Moss, Bureau, Beliveau, Zdebik, & Lepine, 2009). A simi-

lar pattern of findings is true in the classroom setting: Curby et al. (2013) found that in classrooms where teachers were consistent in their provision of emotional support throughout a day, children developed more academic skills and social competence and experienced reductions in problem behavior over the course of a school year. Overall, the research on the daily dynamics of characteristics of developmental settings shows that ensuring that children's experiences are of *consistent high-quality* should benefit children's development while experiencing variations in interactional quality throughout a day may be less optimal for children.

Dynamics Across a Day: Consistency Between Settings In addition to a single setting changing over the course of a day, a child may move between different settings. For example, on school days, a Kindergartener will travel from their family and home setting to their Kindergarten setting and back again. As a result of these setting changes, they may experience changes in caregiver responsivity, rules and expectations, peer groups, language, environmental stimuli, and more (Rimm-Kaufman and Pianta, 2000).

Developmental theory suggests that the extent to which children's daily experiences have elements of *consistency* as they move through different settings should support their development. Connections between family, neighborhood, peer, and school settings are at the heart of Rimm-Kaufman and Pianta's (2000) ecological and dynamic model of Kindergarten transition. This model proposes that when there are strong relationships between key players in children's developmental settings, children experience smooth Kindergarten transitions. Similarly, Bronfenbrenner and Morris (1998, p. 1019) concluded that "proximal processes cannot function effectively in environments that are unstable and unpredictable across time and space.… The cumulative effects at this [between-setting] level are likely seriously to jeopardize the course of human development."

Overall, research and theory that focuses on the impact of children's dynamic experiences within a given day suggests that children thrive when they experience *consistent*, *high-quality* interactions with their caregivers, peers, and teachers throughout a single day. For researchers and policy-makers who want to use research to make a positive impact on children's learning, this means that efforts targeted toward improving the abilities of all adults a child encounters during a day to be consistently emotionally, organizationally, and instructively supportive may be an avenue for improving children's learning. Similarly, infrastructure that enhances connections between children's developmental settings, such as connections between teachers and parents, to ensure that the types of educational interactions children experience at school are supported at home, may be beneficial for children's development (Rimm-Kaufman & Pianta, 2000).

Dynamics Across a Year: Adapting Settings to Children's Growing Skills The type and quality of interactions children experience within a given setting are not just dynamic throughout the course of a given day, but are also likely to shift across the course of a year. As the view of development now broadens to this larger time scale, setting dynamics can impact children in new ways. Specifically, although *consistent*

high-quality interactions still support children's development, it may also be advantageous for children's environments to *change* in ways that support children's developing skillsets and needs.

Kindermann and Skinner (1992) note that settings that optimize children's development attune themselves over time to the needs of growing children. This means that over time teachers may adapt their relationships, rules/expectations, and academic practices to best support the academic needs of individual students. When the interactions children experience within a classroom build on themselves over time to scaffold children through a series of progressively more complex skills, children's development benefits (Bronfenbrenner and Morris, 1998; Vygotsky, 1980).

For example, a body of literature shows that which types of curricula are most beneficial for children during Kindergarten depends on which skills children have already mastered by Kindergarten entry. When mathematics instruction during Kindergarten targets basic skills that the majority of Kindergarteners have already mastered by Kindergarten entry, children who already have those skills experience diminished growth in math skill development compared to children who move on to more advanced skills (Bodovski & Farkas, 2007; Engel et al., 2013). However, children who enter Kindergarten with lower school readiness continue to benefit from this more basic instruction. This research suggests that curricula are most effective when they are targeted to the specific needs of a classroom and should become progressively more advanced as children gain skills.

Conversely, some types of changes in interactions over the course of a year may be a barrier for children's optimal development. Sameroff's (1975) transactional model of development describes the ways in which interactions between children and caregivers may become progressively more negative through a sequence in which, for example, children's early problem behavior leads to negative caregiver attributions of that child, which lead to coercive caregiver-child interactions, which lead to increased problem behavior, which lead to increasingly difficult caregiver-child interactions, and so on and so forth. In this way, early negative interactions may be amplified over time, leading to increases in children's development of problem behavior and decreases in their development of the skillsets that are the desired outcome of schooling. Overall, when interactions are dynamic across a year in a way that matches children's developing skillsets, children benefit, but when these dynamics introduce mismatches between children's needs and their environments, children may struggle.

Dynamics Across a Year: Increasing Positive Ties Between Settings Similarly, the connections between children's developmental settings may change over the course of a year in ways that are beneficial or harmful to children's development. Rimm-Kaufman and Pianta's (2000) ecological and dynamic model of Kindergarten transition demonstrates that the Kindergarten transition is a time during which relationships between schools and parents are forming and developing relatively rapidly. The nature of these relationships may impact children's development over the course of their school careers. For example, the authors imagine a case in which a teacher has early negative interactions with a student's parents and therefore decides not to

contact the parent when a discipline problem arises and the problem worsens over time. When these relationships solidify in negative patterns early in children's school careers, this may be a barrier to creating consistency between the home and school contexts.

Conversely, when schools and teachers invest resources into forming positive relationships with parents during the transition into school, children benefit. For example, Sheldon and colleagues (Epstein & Sheldon, 2002), Sheldon, 2007) have studied the impacts of a school-based program for families of entering Kindergarteners on children's attendance in school during Kindergarten. These studies have shown that facilitating family-school connections is key to increasing student attendance and reducing chronic absence—two important factors in children's learning during Kindergarten.

Overall, the research on the dynamics of children's experiences within a given school year shows that children benefit from interactions that are of *consistent high-quality*, in which the content of children's interactions *becomes more complex* as children themselves develop and master new skillsets. Furthermore, within a school year, the interactions between teachers and parents may develop in ways that are beneficial or unsupportive for children's development. Positive parent-teacher relationships, in which high-quality communication can occur, support children's development. Since the transition into Kindergarten is a period of time during which relationships between teachers and parents are forming rapidly and may solidify into consistent patterns of positivity or negativity (Rimm-Kaufman & Pianta, 2000), efforts to create positive teacher-family relationships are particularly critical during this period of time.

Dynamics Between Settings and Systems Across Multiple Years Throughout their time in school, children generally move into new classroom settings each year, and each classroom setting may have different characteristics. Most relevant to the Kindergarten transition is the move from ECE to Kindergarten, in which children are not only transitioning into a new classroom but are also likely to be moving between larger-level systems. For instance, a child who attends public Kindergarten after participating in a private Montessori preschool moves from a classroom that is supported by a private organization, has a specific constructivist curriculum, and is accountable to state-run preschool licensing organizations into a school that is supported by and accountable to federal, state, and local governmental organizations, using a different set of academic standards and curricula.

The move between preschool and Kindergarten represents a time when the nature and quality of children's interactions undergo a particularly abrupt shift. Children's ECE settings are more likely to focus on supporting children's social, emotional, and self-regulatory development, whereas Kindergarten classrooms tend to be more academically focused (Rimm-Kaufman & Pianta, 2000). Kindergarten classrooms also often have more challenging behavioral expectations: children must sit still and focus on adult goals for longer periods of time (Rimm-Kaufman & Pianta, 2000).

While play is often a central part of ECE classrooms, play-based learning is increasingly absent from the Kindergarten setting (Bassok et al., 2016).

These shifts in experiences from ECE to Kindergarten classrooms may have implications for children's long-term development. In 1953, Dewey introduced the concept of *continuity of experience*, which posits that acquiring new knowledge involves a process of taking current knowledge from previous learning experiences and modifying it based on current experiences. Thus, the learner's prior experiences and current capacities are the starting place for developing new knowledge, and teaching must build upon those prior experiences and current capacities to make learning more meaningful and effective. Therefore, when shifts in children's experiences are abrupt and do not align with their developmental needs, children struggle.

Some setting-level changes are aligned with children's developmental needs and developing skillsets. For example, increasingly challenging behavior expectations are matched by children's rapidly developing capacities for self-regulation and so may represent an appropriate, positive learning experience for those children. However, some setting-level changes are not aligned with children's developmental needs—for example, children's play continues to support their development during Kindergarten (Berk, Mann, & Ogan, 2006), so the absence of play-based learning may not be a good fit for children at this age.

Research also shows that some elements of consistency between ECE and Kindergarten settings may support children's development across this transition. Consistency in instructional practice (i.e., amount of time spent doing literacy/language, math, whole-group, and child-chosen activities) across Head Start and Kindergarten classrooms is associated with children's development of academic and social-emotional skills during Kindergarten (Mashburn & Yelverton, in press). Similarly, exposure to classroom interactions that are consistently emotionally supportive and well-organized as children move from ECE to Kindergarten predicts children's development of social skills and reductions in problem behavior across the Kindergarten transition (Broekhuizen, Mokrova, Burchinal, & Garrett-Peters, 2016). Overall, when instruction is consistently high-quality and builds on itself with increasing complexity to match children's developing skillsets across multiple years, children's learning benefits.

Dynamic Settings and Systems Over Long Periods of Time Over time, the systems that support family and school settings may change, as governmental and private agencies work to enact policies and create programs to support children's development. While changes in these systems may happen more slowly than within- and between-setting changes, they often have far-reaching consequences for children's, families', and teachers' experiences. For example, a large cultural shift occurred in the United States with the implementation of the No Child Left Behind (NCLB) Act in 2002, which required that all public school students third grade and older take standardized tests and instituted punitive measures for schools in which students did not hit state benchmarks. Between the years preceding the implementation of NCLB and the years following, the types of proximal processes that children experienced

within a typical Kindergarten classroom changed. Specifically, between 1998 and 2006, US Kindergarteners' classrooms evolved to include more interactions that focused on literacy and fewer on social sciences, art, and physical education, moved from spending 56% of instructional time on child-directed activities to 33%, and changed to focus more on supporting children in skills that had previously been in the first grade curriculum, such as conventional spelling (Bassok et al., 2016). It is likely that these changes in the nature of interactions children experience within their classrooms as a result of these large-system changes in educational policy impact their academic development.

In sum, this dynamic perspective about understanding children's development finds that settings and systems can promote children's development at four different levels of time: within a given interaction, within a given day, within a given school year, and across multiple school years (see Table 1). In addition, these results identify two major types of dynamics at work that can support children's development: (1) children's development is supported when children experience interactions that are *consistently high-quality* and (2) children's development is supported when the content of those interactions becomes *increasingly complex* in ways that match their own developmental levels. Furthermore, this is both true within a given setting (e.g., consistency of children's classroom experiences of emotional support within a day supports their learning, Curby et al., 2013) and between settings (e.g., positive connections between children's families and their schools can support their learning; Epstein & Sheldon, 2002; Rimm-Kaufman & Pianta, 2000).

Supporting Children's Development During the Kindergarten Transition

In the previous section, we reviewed theories and research about young children's development, which resulted in a comprehensive conceptual framework that helps organize the complex set of factors that affect children's development during these critical years. More specifically, the conceptual framework identified four salient perspectives for understanding children's transition to Kindergarten—child, setting, system, and dynamic. In addition, using a dynamic perspective, it elucidated two key sets of experiences that directly support children's long-term development—consistently high-quality interactions with adults and peers within and between home and school settings and experiences that are appropriate for the child's current capabilities and become more complex as the child develops. These conclusions have clear implications for how stakeholders charged with supporting young children during the early childhood years can most effectively support children's long-term development—the strategies must promote consistently high-quality experiences that are attuned to the child's capabilities and become appropriately more complex over time (see Table 1 for optimal strategies and examples that support effective interactions during the Kindergarten transition).

Table 1 Four types of effective interactions during the Kindergarten transition

Time level	Setting level	Optimal strategy	Examples
Interaction	Within a setting	Engage in interactions that are high-quality: emotionally supportive, well-organized, and instructionally rich	A teacher reads a book with a child and talks through "What do you think will happen next?" and why
Day	Within a setting	Maintain consistent high-quality	A teacher greets children with a smile and a high five in the morning. Throughout the whole day, the teacher praises children's thinking and lets them know that he cares about them
	Between settings	Maintain consistent high-quality	A child's teacher and parents create a plan to help reduce a child's aggression. The same rules apply to her interactions with her siblings as her classmates, and those rules are enforced consistently, regardless of whether she is in the classroom or the home
Year	Within a setting	Increase complexity of instruction to match children's developing skillsets	A child arrives in a classroom who struggles with emotional outbursts. His teacher starts working with him to recognize his emotions. Once he is able to recognize strong emotions, she teaches him strategies for calming himself down. At first, his teacher provides extra support to help him remember these strategies, but by the end of the year, he is expected to be able to use them on his own
	Between settings	Develop stronger relationships	Over the course of a year, a teacher and parents communicate about a child's strengths and needs. Over time, the parents and teacher grow to trust each other, and the parents become more involved with the school
Multiple years	Between settings and systems	Increase complexity of instruction to match children's developing skillsets	During preschool, many children learn to recognize the first few letters of the alphabet. When these children enter Kindergarten, the curriculum is modified to add more challenge for these children instead of repeating the letters they already know
		Instruction builds consistently on children's previous experiences	Many children in a classroom are transitioning into Kindergarten from a specific local Head Start. The Kindergarten teacher communicates with the Head Start director to find out which curriculum these children were using and adopts elements of that curriculum into her own practice

In the next sections, we discuss three types of commonly implemented strategies to support children's development during the transition to Kindergarten and highlight the ways in which each has the potential to promote children's long-term development. The first is a child-level strategy—transition practices and programs—that supports children's transitions to school by affording young children opportunities to become acquainted with the new school, Kindergarten classroom, and/or teacher before the school year begins. The second strategy is a setting-level strategy—expanding access to pre-K programs—that supports children's transitions to Kindergarten by creating new social settings and structures (i.e., pre-K classrooms) that provide young children opportunities to develop a comprehensive set of skills the year before Kindergarten to help prepare them to succeed in school. The final strategy is a systems-level strategy—aligning pedagogy, programs, and policies across the multiple systems of ECE and K-12—that helps create a more seamless and unified system of ECE which offers learning experiences to children that are consistent over time and build upon the child's current capabilities.

Transition Practices and Programs A common type of strategy to support children's well-being upon transitioning to Kindergarten is one in which, prior to Kindergarten, the child is provided opportunities to become acquainted with their new teacher and the school and classroom. There are a number of specific types of these acquainting strategies, such as the child attends an open house, meets with their teacher, or observes the classroom, the teacher visits the child's home, and the teacher calls the child or sends the child a letter. These strategies are relatively inexpensive to implement, and there is some evidence that they promote children's positive adjustment in Kindergarten (LoCasale-Crouch et al., 2008; Schulting et al., 2005). In addition to transition practices, there are also transition programs, which are more intensive strategies to support children's transitions to Kindergarten before, during, and after the start of Kindergarten.

Transition practices have the potential to improve children's long-term development in two ways. First, acquainting the child with the new teacher begins the process of cultivating their relationship prior to the beginning of the school year. From the perspective of the child, these early connections then serve a resource when the child transitions into Kindergarten. For example, from these early interactions, the child may begin to view the teacher as a secure base of attachment; as such, the child may be more willing to explore and take risks in the new Kindergarten classroom, be positively engaged in activities, and be a partner in warm and supportive interactions with the teacher. These positive interactions at the beginning of Kindergarten directly support children's development during Kindergarten. In addition, strategies that acquaint the child with the new environment will allow the child to learn about the activities they will encounter and the expectations for behaviors. Thus, upon entering the new setting, the activities and behavioral expectations are organized in ways that are familiar. This will enable the child to effectively manage and regulate their behavior and, in turn, be better able to capitalize on learning opportunities within the classroom that impact their cognitive, academic, and/or social-emotional outcomes.

The ways in which transition programs are hypothesized to affect children's positive development at Kindergarten entry are similar to transition practices—they establish early relationships between children and their elementary grade teachers and/or familiarity with the routines of the school and classroom setting. This can create more supportive interactions within the home and in each grade. Furthermore, the provision of ongoing resources to the child and their families during elementary school can help build relationships between home and school settings and promote interactions that are consistently high-quality and attuned to the needs of the child in both settings. Despite the benefits each of these two transition strategies to improve the quality of children's interactions within the Kindergarten classroom and/or home settings, most do not explicitly ensure that children experience consistently high-quality experiences across grades that become increasingly complex and are attuned to their current capabilities.

Access to Early Childhood Education Programs A common setting-level transition strategy to promote positive transitions and development is to create opportunities for young children to attend ECE programs before they enter school. Kindergarten is considered the first large-scale transition strategy implemented in the United States. Friedrich Froebel is credited with the creation of Kindergarten in Germany in the 1830s, and it was widely adopted in the United States in the early twentieth century after it was showcased at the 1904 World's Fair in St. Louis (Froebel Foundation, 2017). One purpose of Kindergarten was to provide experiences in a formal education setting that help children make a successful transition from their homes—the primary developmental settings during the first 5 years of life for most children in that era—into the more formal system of public education. The specific goals of Kindergarten at that time were to promote children's development of social skills through activities such as games, dancing, creative play with toys, and observing and nurturing plants (Froebel Foundation, 2017).

Since its introduction to the United States as a strategy to assist children's transition from home to the school setting, Kindergarten has formally become part of the institution of public education. Yet, the difficulties that children have transitioning to school remain, as evidenced by the prevalent problems that Kindergarten teachers report about children's adjustment to school (Rimm-Kaufman, Pianta & Cox, 2000). A similar transition strategy has been more recently adopted—the expansion of pre-Kindergarten programs for 4-year-olds. Since 1964, the year before Head Start began, the percentage of 4-year-olds who attended a formal pre-K program has increased from 17% (Barnett & Yarosz, 2007) to approximately 70%, with approximately half of those children currently enrolled in publicly funded programs (Barnett, et al., 2017).

The expansion of opportunities for children to attend ECE programs may positively affect children's transitions to school in a number of ways. First, these strategies are hypothesized to provide children with high-quality experiences within a classroom setting, which directly impact children's development during this year before Kindergarten. Second, through these experiences, it is expected that children gain familiarity with formal education settings in general and acquire a repertoire of

behaviors that are appropriate for the different school-based contexts. Then, as children transition from pre-K into Kindergarten, their familiarity with the routines of school can ease the transition by helping the child more easily adapt to the new demands of the Kindergarten classroom.

However, the power of pre-K in preparing children to succeed in Kindergarten depends upon whether pre-K and Kindergarten programs are administered and implemented in ways that build seamlessly on each other. When this is the case, the child's Kindergarten experiences will be familiar and predictable and build upon the current capabilities of the child. As it currently stands, however, there is an almost universal lack of alignment between the pedagogy, programs, and policies across pre-K and Kindergarten systems. As a result of these disconnections, young children's experiences in pre-K settings may not adequately prepare them for Kindergarten classrooms in ways that promote their long-term development.

Aligning Systems A final strategy is a systems approach to supporting children's long-term development through the alignment of pedagogy, programs, and policies across the multiple subsystems that support young children during this time of life. This includes alignment between systems within ECE (Head Start, state pre-K programs, private programs) and alignment between these ECE systems and K-12 systems. According to Kagan (2010), alignment strategies may target three components of these systems. *Pedagogical alignment* strategies build connections among three components of pedagogy that children directly experience: the standards of development that the child is expected to attain at a given age or stage, the assessments that are used to determine whether the child has achieved the standards, and the types of instructional and learning experiences in these settings, including the curriculum, teaching philosophy, expectations, and perspectives about children (Scott-Little & Reid, 2010). *Programmatic alignment* strategies connect across systems the non-pedagogical resources and services that promote the child and family's health and well-being. *Policy alignment* strategies connect across systems the policies and regulations that promote high-quality experiences within early education and care settings.

There are at least three different types of systems alignment. "Horizontal alignment" (Bogard & Takanishi, 2005; Kagan, 2010) connects the pedagogy, programs, and policies across the multiple, concurrent subsystems of ECE and care that serve children of the same age cohort in order to create a more integrated and coherent system. As it is now, the system of ECE involves multiple entities (child care, state pre-K, Head Start, private programs) that adopt different standards of development, assessments, pedagogy, policies, and programs. Programs target children of different ages from different cultural, ethnic, and economic backgrounds; they are delivered in different settings, including schools, centers, homes, and churches; they offer different types of services in addition to the direct care and education provided to children; they have different policies and regulations; they adopt different standards of development and methods of assessing whether children achieve them; and they are based upon different educational philosophies and use different instructional approaches for teaching young children. As a result of this fragmented,

loosely organized "nonsystem" (Pianta, 2010) of ECE, a cohort of children who simultaneously enter the K-12 system come with a vast array of experiences that may be neither similar to their peers' experiences nor aligned with the types of experiences they will encounter in this new system. Thus, horizontal alignment is intended to bring together the multiple, coexisting systems of ECE and care in ways that build a more coherent system of ECE in which settings are organized and regulated in similar ways, and children come to Kindergarten with a more common set of prior experiences.

A second, complementary type of alignment is "vertical alignment," which focuses on uniting the ECE and K-12 systems in three different areas: pedagogy, programs, and policies. The powerful potential of vertical systems alignment is clear when pedagogy is aligned across the ECE systems and K-12 systems. When standards of development are aligned across systems, children are likely to experience activities and instruction that focus on their attainment of the same set of outcomes. Furthermore, when assessments of children's attainment of these standards are aligned across systems, the results from assessments made in the ECE system may be carried forward to new systems to guide instruction. When instruction is aligned, children's experiences within their ECE and KG classrooms build upon their base of knowledge. As discussed in the first section of this chapter, these are key processes that directly affect children's long-term development.

A third type of alignment is pedagogical alignment within pre-K systems and within Kindergarten systems. Alignment of pedagogical content *within* a setting involves connecting the standards of development, the methods of assessing children's attainment of these standards, and the pedagogical approaches that support children's attainment of these standards. Pedagogical alignment strategies begin by defining the standards of development that children are expected to attain over the course of and by the end of their time within a specific setting. For example, the previously described Head Start standards of development (Head Start, 2017) identify very specific behavioral indicators relating to 11 different developmental domains that 3–5-year-old children are expected to achieve.

Once standards or goals for developmental progress are made clear, a program or setting then selects and implements periodic child assessments to determine each child's status and progress toward meeting each standard. These assessments give the teacher information about the child's current skills in each developmental domain. It is expected that the teacher will use this information to provide learning opportunities that are attuned to the child's current strengths and needs. Thus, the types of learning opportunities that the child experiences are more likely to be attuned to their ability level and promote their attainment of the developmental standards that the program has defined as its goal.

Despite the potential benefits of aligning systems for promoting children's learning and development, a tension emerges when implementing this strategy. Across the systems of ECE, there is wide variability in the standards of development, assessments, instructional approaches, policies, and programs; and there is validity to and support for all of these approaches. Thus, building a unified system with common features may force some systems to be modified in ways that are different

from how they are currently structured, which presents a barrier to successful alignment across all systems. This tension is perhaps more profound when attempting to align early childhood and K-12 systems. Many early childhood systems focus on children's independent exploration and discovery, which are guided by developmental standards of creativity, self-expression, self-regulation, and social skills and achieved through self-guided instructional activities. In contrast, many K-12 systems' standards of development relate to academic outcomes that align with the common core standards and are achieved through teacher-directed activities or independent seat work. Thus, successful alignment across these systems requires the development of a shared view about the appropriate developmental standards, assessments, instructional practices, programs, and policies, and the wide variability among these systems presents challenges in creating a fully coherent system that supports children from birth to third grade.

Conclusions

This chapter described a theoretical framework for understanding how to best support children and families during the transition into Kindergarten. This framework posits that (1) *children*, the developmental *settings* in which they learn, and the larger *systems* that support those settings are all important to children's development; (2) the characteristics of children, settings, and systems are *dynamic over time*; and (3) children's development is optimized when the interactions they experience in their developmental settings are *high-quality*, are relatively *consistent* within and between settings, and become *increasingly complex* over time to match children's growing capacities.

This conceptual perspective gives policy-makers, researchers, and educators a variety of possible areas to target efforts to improve children's experiences during the Kindergarten transition. We can enact strategies that improve the quality of children's interactions within home, ECE, and classroom settings. We can enact strategies that increase the consistency of children's positive experiences in these settings, either by making it possible for caregivers to create consistency within a setting or by ensuring that as children travel between these settings, their experiences are stable and predictable. Finally, we can enact strategies that ensure that the content of children's interactions becomes increasingly complex over longer periods of time, as children themselves develop new capacities and needs.

We described three specific types of strategies in use in the US school system today to promote children's development during the Kindergarten transition—use of transition practices and programs, expanded access to pre-K, and alignment of pedagogy, programs, and practices between the many systems that comprise the field of early education. Although one of these strategies focuses primarily on the child, one focuses primarily on building effective settings, and one focuses primarily at the system level, each incorporates practices that fit into this theoretical framework. Transition programs create predictability for children not only across years of

their early childhood educations but also between home and school settings when families are brought in as key members of these transition programs. Pre-K is designed to give children access to high-quality, emotionally and instructionally supportive interactions from an early age. And alignment of pedagogy across systems helps to ensure that children's experiences are consistent and become more complex with time as they transition from early childhood into the K-12 system.

To use this framework to support practice, however, we recommend noting not only where strategies *do* fit into this framework but also where they *do not* fit into the framework, since these missing pieces are likely where programs can make improvements that will further boost their efficacy. For instance, if alignment strategies focus on creating consistency between settings without simultaneously promoting high-quality within settings, these strategies are not likely to be effective. Transition practices may be most effective when they are maintained over some time to promote deepening school-family relationships. High-quality pre-K instruction is most effective when it is built on in increasingly complex ways as children move to Kindergarten. When strategies focus on the strengths and needs of the child, promote high-quality interactions in school and at home, create consistency within and between developmental settings, and ensure that children's instruction builds on their previous learning to become increasingly complex over time, children should experience smoother transitions into Kindergarten and greater success throughout the early elementary grades.

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